

Final, Rev. 2

Permittee-Initiated Interim Measures Report
Parcel 24 – Igloo Block A

Fort Wingate Depot Activity
McKinley County, New Mexico

September 27, 2019

Contract No. W9128F-13-D-0025

Delivery Order No. DS01 & Modifications

Prepared for:



**US Army Corps
of Engineers®**

US Army Corps of Engineers
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REPORT DOCUMENTATION PAGE

Form Approved
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1. REPORT DATE (DD-MM-YYYY) 09-27-2019			2. REPORT TYPE Permittee-Initiated Interim Measures Report		3. DATES COVERED (From - To) July 2016 - 11 August 2019	
4. TITLE AND SUBTITLE Final, Rev. 2 Permittee-Initiated Interim Measures Report Parcel 24, Igloo Block A Fort Wingate Depot Activity McKinley County, New Mexico					5a. CONTRACT NUMBER W9128F-13-D-0025	
					5b. GRANT NUMBER N/A	
					5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Emily McRee/ZAPATA Katie Stout/ZAPATA Cindy Lee Westergard/HSW Engineering, Inc.					5d. PROJECT NUMBER R20179	
					5e. TASK NUMBER DS01, Mod. No. 01	
					5d. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Zapata Incorporated 6302 Fairview Rd., Ste 600 Charlotte, North Carolina 28210					8. PERFORMING ORGANIZATION REPORT NUMBER N/A	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Corps of Engineers, Tulsa District 1645 South 101st East Avenue Tulsa, OK 74128 Project Manager: Mr. Saqib Khan (USACE SWT)					10. SPONSOR/MONITOR'S ACRONYM(S) USACE	
					11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Unlimited.						
13. SUPPLEMENTARY NOTES N/A						
14. ABSTRACT This Report summarizes the Permittee-Initiated Interim Measures completed in May 2018 for Parcel 24, Igloo Block A, as outlined in the Notification of Permittee-Initiated Interim Measures dated October 17, 2014.						
15. SUBJECT TERMS Fort Wingate Depot Activity, Permittee-Initiated Interim Measures Report, Parcel 24, Igloo Block A						
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 465	19a. NAME OF RESPONSIBLE PERSON Mark Patterson	
a. REPORT U	b. ABSTRACT U	c. THIS PAGE U			19b. TELEPHONE NUMBER (Include area code) 330/358-7312	

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Final, Rev. 2

Permittee-Initiated Interim Measures Completion Report
Parcel 24, Igloo Block A

Fort Wingate Depot Activity
McKinley County, New Mexico

September 27, 2019
Contract No. W9128F-13-D-0025
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DOCUMENT CERTIFICATION

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SEPTEMBER 2019**

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Mr. Mark Patterson

Base Realignment and Closure Environmental Coordinator

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PREFACE

This Resource Conservation and Recovery Act Permittee-Initiated Interim Measures Report summarizes field operations completed in May 2018 for Parcel 24, Igloo Block A, as outlined in the *Notification of Permittee-Initiated Interim Measures for Parcel 24 at Fort Wingate Depot Activity*, dated October 17, 2014. This report addresses the requirements of the U.S. Army Corps of Engineers (USACE) revised Performance Work Statement (PWS), dated May 22, 2014.

This Report was prepared by ZAPATA in September 2019. Mr. Mark Patterson served as the FWDA Base Realignment and Closure (BRAC) Environmental Coordinator and Mr. Saqib Khan served as the USACE Tulsa District Project Manager.

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 BRACD – U.S. Army Base Realignment and Closure Division
 DOI – Department of Interior
 FWDA – Fort Wingate Depot Activity
 HWB – Hazardous Waste Bureau
 NM – New Mexico
 NMED – New Mexico Environment Department
 NN – Navajo Nation
 NR – Navajo Region
 OH – Ohio
 POZ – Pueblo of Zuni
 USACE ERDC – U.S. Army Corps of Engineers, Engineer Research and Development Center
 USACE SWF – U.S. Army Corps of Engineers – Fort Worth District
 USACE SWT – U.S. Army Corps of Engineers – Tulsa District
 EPA – U.S. Environmental Protection Agency

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TABLE OF CONTENTS

DOCUMENT CERTIFICATION	i
PREFACE.....	iii
DOCUMENT DISTRIBUTION LIST	v
TABLE OF CONTENTS.....	vii
ACRONYMS AND ABBREVIATIONS	ix
1.0 INTRODUCTION	1-1
2.0 PARCEL 24 INTERIM MEASURES	2-1
2.1 Drain Pipe Removal	2-1
2.2 Soil Removal	2-1
2.3 Confirmation Sampling	2-1
2.4 Waste Profile and Disposal.....	2-2
2.5 Deviations from the Work Plan	2-3
2.6 Data Usability	2-3
3.0 SUMMARY AND CONCLUSIONS	3-1
4.0 REFERENCES	4-1

LIST OF TABLES

Table 1 Confirmation Soil Sample Results.....	3
Table 2 Sample IDs, Laboratory Reports, and Analyses	7

LIST OF FIGURES

Figure 1 A-Block Igloos and Designated Soil Excavations.....	3
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PHOTOGRAPHIC LOG

Photograph No. 1 Igloo Block A.....	3
Photograph No. 2 Igloo A-947.....	3
Photograph No. 3 Excavation at Igloo A-920.....	4
Photograph No. 4 Excavation Beneath a Plugged Drain Pipe	4
Photograph No. 5 Confirmation Sample Collection.....	5

LIST OF APPENDICES

Appendix A NMED Correspondence..... A-1
Appendix B Field Documentation..... B-1
Appendix C Quality Control Summary Report (Electronic Only) C-1
Appendix D Waste Characterization and Disposal Documentation (Electronic Only) D-1
Appendix E Confirmation Sample Laboratory Reports (Electronic Only)..... E-1

ACRONYMS AND ABBREVIATIONS

ADC	Alternate Daily Cover
BRAC	Base Realignment and Closure
CCV	Continuing Calibration Verification
CY	cubic yard
EM	Engineer Manual
EPA	United States Environmental Protection Agency
ER	Engineer Regulation
FCR	Field Change Request
FWDA	Fort Wingate Depot Activity
GCAL	Gulf Coast Analytical Laboratories, LLC
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
mg/kg	milligram per kilogram
MS	matrix spike
MSD	matrix spike duplicate
NMED	New Mexico Environment Department
NWNMRSWA	Northwest New Mexico Regional Solid Waste Authority
PIIM	Permittee-Initiated Interim Measures
PWS	Performance Work Statement
QCSR	Quality Control Summary Report
RCRA	Resource Conservation and Recovery Act
SOP	Standard Operating Procedure
SSL	Soil Screening Level
TCLP	Toxicity Characteristic Leaching Procedure
USACE	United States Army Corps of Engineers

1.0 INTRODUCTION

The Department of the Army, Fort Wingate Depot Activity (FWDA) has completed the Permittee-Initiated Interim Measures (PIIM) per the Resource Conservation and Recovery Act (RCRA) Permit NM6213820974 Section VII.G.3 for Parcel 24, Igloo Block A. The interim measures were based on sample results and conclusions presented in the *Final Release Assessment Report, Parcel 24* (USACE 2014) and outlined in the *Notification of Permittee-Initiated Interim Measures for Parcel 24* (ZAPATA 2014); NMED concurred with the proposed work as documented in Appendix A.

The Release Assessment Report recommended removal of all igloo drain pipes coated with lead-based paint and soil from beneath drains where sample results identified concentrations of lead, arsenic, or mercury greater than NMED soil screening criteria. ZAPATA executed the PIIM letter work plan scope; however, it should be noted that New Mexico Environment Department (NMED) Soil Screening Levels (SSLs) outlined in the 2019 guidance (NMED 2019) were implemented, as opposed to the 2015 levels presented in the *Notification of PIIM for Parcel 24*.

The Permittee-Initiated Interim Measures included the following:

- Removal of drain pipes from Block A igloos (154 drain pipes)
- Excavation of soil from beneath drain pipes where previous investigations indicated concentrations of arsenic, lead, and/or mercury above the NMED SSLs:
 - drain pipes (both left and right)
 - A-903, A-905, A-909, A-912, A-913, A-914, A-915, A-916, A-917, A-918, A-920, A-922, A-923, A-925, A-926, A-929, A-933, A-935, A-936, A-939, A-941, A-942, A-943, A-944, A-946, A-948, A-950, A-951, A-952, A-955, A-962, A-964, A-969, A-970, A-971, A-976, and A-977
 - left drain only
 - A-927, A-934, A-945, A-963, and A-965
 - right drain only
 - A-907, A-924, A-938, A-947, and A-975
- Confirmation sampling
- Waste characterization and disposal of excavated soil

A Photographic Log of various site activities is included at the end of this report.

1 **2.0 PARCEL 24 INTERIM MEASURES**

2 The following sections describe the interim measures performed for Parcel 24, Igloo Block A including
3 removal of igloo drain pipes coated with lead-based paint and excavation of soil from beneath select
4 igloo drain pipe outfalls.

5 **2.1 Drain Pipe Removal**

6 Drain pipe removal activities were performed January 29 through February 2, 2018. In preparation for
7 drain pipe removal, polyethylene plastic sheeting was placed below each pipe to prevent the spread of
8 lead particles to surrounding uncontaminated soil. Two drain pipes at each igloo (154 total) were cut flush
9 with the outside wall with a power saw. Following piping removal, drain pipe holes were filled with six
10 inches of concrete mix.

11 **2.2 Soil Removal**

12 Approximately ¼ cubic yard (CY) of soil was removed from beneath each designated igloo drain outfall.
13 Soil was removed using a mini-excavator from beneath the left and right drain pipes at igloos:

- 14 • A-903, A-905, A-909, A-912, A-913, A-914, A-915, A-916, A-917, A-918, A-920, A-922, A-
15 923, A-925, A-926, A-929, A-933, A-935, A-936, A-939, A-941, A-942, A-943, A-944, A-946,
16 A-948, A-950, A-951, A-952, A-955, A-962, A-964, A-969, A-970, A-971, A-976, and A-977

17 Soil was removed from beneath the left drain only at igloos:

- 18 • A-927, A-934, A-945, A-963, and A-965

19 Soil was removed from beneath the right drain only at igloos:

- 20 • A-907, A-924, A-938, A-947, and A-975

21 The excavated soil, initially totaling 20.5 cubic yards, was placed into roll-off containers on-site pending
22 waste characterization. Following receipt of confirmation sample results as described in the next section,
23 an additional 10 cubic yards was excavated from locations that presented exceedances of SSLs. Daily
24 reports, weekly summaries, and Field Change Requests (FCRs) for field operations are included in
25 Appendix B.

26 **2.3 Confirmation Sampling**

27 Sampling equipment was decontaminated prior to the investigation and between locations using non-
28 phosphate laboratory-grade detergent, deionized water, and pesticide-grade ethanol. Following soil
29 removal, one discrete confirmation soil sample was collected from the floor of each excavation. Soil
30 samples were collected manually from 0 to 6 inches below the floor of the excavation using stainless steel
31 spoons and thoroughly homogenized within a stainless steel bowl prior to placing in a certified pre-
32 cleaned 4-oz glass sample jar. Samples were immediately labeled, wrapped with bubble wrap, and placed
33 in a sealable plastic bag on ice. Soil samples were shipped in a sealed cooler (with custody seal) overnight
34 via FedEx to Gulf Coast Analytical Laboratories, LLC (GCAL) in Baton Rouge, Louisiana for analysis of
35 lead, arsenic, and mercury. Chains of custody are contained within laboratory reports (Appendix E).

36 Confirmation sample results were compared to screening levels for arsenic (7.07 milligrams per kilogram
37 [mg/kg]), lead (400 mg/kg) and mercury (20.7 mg/kg) (NMED 2019). Confirmation soil sample
38 collection was performed from February 6 through April 12, 2018.

1 Table 1 presents analytical results for each confirmation sample collected during the implementation of
2 Parcel 24 Igloo Block A interim measures. Arsenic concentrations ranged from 0.964 mg/kg at 24A977-
3 EFR-D-SO to 7.1 mg/kg at 24A969-EFL-D-SO. Detected lead concentrations ranged from 10 mg/kg at
4 24A933-EFL-D-SO to 6,350 mg/kg at 24A941-EFR-D-SO. Sixteen confirmation samples exhibited lead
5 concentrations greater than the NMED SSL (residential) of 400 mg/kg, one of which exceeded the arsenic
6 SSL of 7.07. Mercury concentrations in confirmation samples ranged from 0.0055 mg/kg at 24A913-
7 EFL-D-SO to 0.06 mg/kg at 24A922-EFR-D-SO2; none had concentrations that exceed the lowest human
8 health NMED SSL of 20.7 mg/kg (construction worker scenario) for mercury.

9 In cases where arsenic and/or lead exceeded the SSL, an additional ¼ CY of soil was removed from the
10 existing excavation. For Igloo A955, a third excavation was required from beneath the left drain pipe.
11 Confirmation samples were collected from the floor of each additional excavation, designated by a “2” or
12 “3” following the original sample ID corresponding to the second or third soil removal, respectively.

13 Analyses were performed by GCAL and reported in six laboratory data reports and corresponding staged
14 electronic data deliverables (Stage 2a). Data validation was performed using ADR.net supplemented by a
15 concurrent manual review of the Stage 4 Laboratory Reports which, together, allowed validation of the
16 Stage 2b deliverables. The analytical data were validated in accordance with specifications given in the
17 Parcel 21 Interim Measures Work Plan (ZAPATA 2017) and USACE guidance documents including
18 Engineer Manual (EM) 200-1-10 (USACE 2005) and Engineer Regulation (ER) 200-1-7 (USACE 2014).

19 Table 2 presents the soil samples with their corresponding laboratory report, collection date, and analyses.
20 Daily reports, weekly reports and soil sample log sheets are contained in Appendix B. Appendix C
21 contains the Quality Control Summary Report (QCSR). Laboratory analytical results and chains of
22 custody are contained in Appendix E.

23 As presented in Table 1, results for the final confirmation sample collected from the floor of each
24 excavation are less than the lowest human NMED SSLs for arsenic, lead, and mercury. The interim
25 measures at Parcel 24, Igloo Block A have successfully removed soil that exceeded NMED cleanup
26 standards and presented unacceptable risk to human health.

27 **2.4 Waste Profile and Disposal**

28 The steel igloo drain pipes and plastic sheeting were packaged, labeled as lead-containing materials, and
29 transported by Kachina Rentals to All City Recycling and Towing in Gallup, New Mexico for recycling.

30 A composite soil sample (containing 10 aliquots) was collected from each roll-off for waste
31 characterization. Each composite sample was analyzed for:

- 32 • Ignitability using EPA Method 1030
- 33 • Corrosivity (pH) using EPA Method 9045
- 34 • Reactivity (cyanide/sulfide) using EPA Method 9012A/9034
- 35 • Explosives using EPA Method 8330B
- 36 • Toxicity Characteristic Leaching Procedure (TCLP) semi-volatile organic compounds using EPA
37 Method 1311/8270D
- 38 • TCLP RCRA 8 metals using EPA Method 1311/6020A/7470A
- 39 • Paint filter liquids test using EPA Method 9095B

40 Analytical results were submitted for approval to the Northwest New Mexico Regional Solid Waste
41 Authority (NWNMRSWA) Red Rock Landfill in Thoreau, New Mexico. Upon approval, the waste was

1 shipped under Profile Number 7350-2018-A and manifest for disposal as solid waste (special waste). Five
2 roll-offs containing 32.6 tons of soil were disposed and used as Alternate Daily Cover (ADC) as
3 described in the applicable *Waste Management Plan & Hazardous Waste Contingency Plan* (ZAPATA,
4 2016) and approved by NMED Solid Waste Bureau on 31 August 2015 (NMED, 2015). Waste
5 characterization results, soil sample log sheets, and disposal documentation are contained in Appendix D.

6 **2.5 Deviations from the Work Plan**

7 Field duplicate samples were collected to provide site-specific, field-originated checks of the quality of
8 the data generated by the laboratory, and to determine whether the sampling and analytical procedures are
9 providing representative analytical results. The Notification of PIIM for Parcel 24 specified collection of
10 duplicate samples at a rate of 1:10; however, only four duplicate samples were collected for Parcel 24
11 (approximately 4%). This error is discussed in Section 2.6 and the QCSR. The inadvertent oversight is not
12 believed to have adversely impacted project objectives as the data has been reviewed and is otherwise
13 sound.

14 A mini-excavator was used for removal of contaminated soil to increase productivity, rather than hand
15 tools specified in the Accident Prevention Plan (ZAPATA 2016b). Field Change Request (FCR) No. 4
16 was submitted and approved on February 2, 2018. In addition, the PIIM letter work plan for Parcel 24
17 stated that soil would be disposed at San Juan County Landfill in Aztec, New Mexico, approximately 125
18 miles from Fort Wingate. Following submittal of the document, NWNMRSWA Red Rock Landfill in
19 Thoreau, New Mexico became available as an option for disposal of non-hazardous soil. For efficiency,
20 non-hazardous waste was disposed at Red Rock Landfill since it is located 32 miles from Fort Wingate.
21 FCR No. 5 was submitted and approved on March 13, 2018. FCR Nos. 4 and 5 are contained in Appendix
22 B.

23 **2.6 Data Usability**

24 The QCSR, contained in Appendix C, provides detailed information on data validation procedures and
25 results; Stage 2 laboratory reports are contained in Appendix E. No results were rejected; therefore,
26 analytical completeness in terms of usable data is 100%. Four field duplicates (4%) were collected during
27 the Parcel 24 interim measures, rather than the 10% specified in the Notification of PIIM letter. This
28 inadvertent oversight is not believed to have adversely impacted project objectives as the collected
29 samples and data produced by the laboratory have been reviewed and are otherwise sound. The error has
30 been noted and discussed in the QCSR as directed in Department of Defense (DoD) Data Validation
31 Procedure (DoD 2019). No data were qualified or rejected based on duplicate frequency.

32 As described in the Interim Measures Work Plan, cumulative precision for soil samples is deemed to be
33 high when the RPD between a set of paired results exceeds 20%. In low level detections (i.e., when one or
34 both results is less than five times the magnitude of the reporting limit), cumulative precision is deemed
35 to be high when the absolute difference in results is greater than twice the magnitude of the reporting
36 limit. The results for arsenic and lead reported for the primary sample-field duplicate pair collected from
37 location 24A903-EFR-D-SO, and for lead collected from 24A917-EFR-D-SO exceeded the precision goal
38 of 20% RPD and were qualified with “J” to indicate that the results may not be fully representative of the
39 sampled locations. Based on an evaluation of field and laboratory procedures and QC, the duplicate data
40 are deemed usable and reflect the variability of analyte concentrations and heterogeneity of Parcel 24 soil.
41 All sample/duplicate pairs were diluted by ten, and reported matrix interferences as shown in the
42 laboratory reports (Appendix E). The elevated RPDs indicate further evidence of sample heterogeneity.
43 Analyses of subsamples repeatedly taken from a single jar of soil can have widely varying results, as
44 reflected in the high RPD between field or laboratory duplicates. Most of this is primarily caused by

1 heterogeneity (ITRC 2012). The combination of field and lab QC results supports the conclusion that the
2 high RPDs are a result of non-homogeneity, rather than sampling error. The precision of the data reflect
3 the cumulative effects of heterogeneity of the soil, the variability of field concentrations, and routine
4 analytical measurement uncertainty. Therefore, qualification based on duplicate precision was limited to
5 the primary sample and field duplicate as recommended by DoD's latest data validation procedures (DoD
6 2019) and EPA's SOP No. HW-3b ICP-MS Data Validation (EPA 2015).

7 Additionally, the majority of the sample/duplicate comparisons meet the precision criteria with four RPDs
8 less than 2%; this indicates that appropriate duplicate collection procedures were followed, but sample
9 heterogeneity affected three of 12 results in cases where MS recovery exceeded the upper acceptance
10 limit (by 26%), biasing the results high.

11 Arsenic, lead, and mercury concentrations for all primary and duplicate samples are significantly less than
12 site-specific background/SSLs; some duplicate pairs are biased high and qualified based on elevated
13 RPDs (>20%) but are considered usable for the purpose of confirmation of contaminated soil removal.
14 Therefore, the interim measures were successful in removing soil that presented unacceptable risk to
15 human health.

1 **3.0 SUMMARY AND CONCLUSIONS**

2 Permittee-Initiated Interim Measures, including drain pipe removal and plugging, soil excavation,
3 confirmation sampling, and waste profile and disposal, were completed for Parcel 24 Igloo Block A on
4 May 24, 2018. The interim measures at Parcel 24, Igloo Block A have successfully removed soil that
5 exceeded NMED cleanup standards and presented unacceptable risk to human health as evidenced by the
6 confirmation sample results presented in Table 1.

7 The interim measures, as outlined in the *Notification of Permittee-Initiated Interim Measures for Parcel*
8 *24* (ZAPATA 2014), have been completed.

1 **4.0 REFERENCES**

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34 Leaching Beds, Fort Wingate Depot Activity, McKinley County, New Mexico. September.

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TABLES

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Table 1
Confirmation Soil Sample Results
Parcel 24, Igloo Block A
Fort Wingate Depot Activity

Sample ID	Sample Date	Depth (feet)	Arsenic (mg/kg)	Lead ¹ (mg/kg)	Mercury ² (mg/kg)
Lowest NMED SSL for Human Health*			7.07	400	20.7
FWDA Background Range for Arsenic**			0.2-11.2		
24A903-EFL-D-SO	3/12/2018	1.0	4.09 J	61.7	0.029
24A-EF-D-SO-DUP04	3/12/2018	1.0	4.1 J	60.5	0.034
24A903-EFR-D-SO	3/12/2018	1.0	3.33 J	47.1 J	0.0072 J
24A-EF-D-SO-DUP03	3/12/2018	1.0	2.27 J	170 J	0.031
24A905-EFL-D-SO	3/12/2018	1.0	3.09 J	55	0.016
24A905-EFR-D-SO	3/12/2018	1.0	3.5 J	96.8	0.025
24A907-EFR-D-SO	3/12/2018	1.0	1.7 J	57.9	0.011 J
24A909-EFL-D-SO	3/12/2018	1.0	1.3 J	164	0.01 J
24A909-EFR-D-SO	3/12/2018	1.0	4.11 J	25.3	0.019
24A912-EFL-D-SO	3/12/2018	1.0	1.19 J	39.2	0.0091 J
24A912-EFR-D-SO	3/12/2018	1.0	3.08 J	39.5	0.019
24A913-EFL-D-SO	3/12/2018	1.0	1.86 J	18.7	0.0055 J
24A913-EFR-D-SO	3/12/2018	1.0	1.77 J	41.9	0.01 J
24A914-EFL-D-SO	3/12/2018	1.0	1.33 J	18.9	0.0072 J
24A914-EFR-D-SO	3/12/2018	1.0	2.68 J	28.6	0.014
24A915-EFL-D-SO	3/12/2018	1.0	3.02 J	23.8	0.018
24A915-EFR-D-SO	3/12/2018	1.0	3.28 J	44.2	0.016
24A916-EFL-D-SO	3/12/2018	1.0	3.75 J	15.7	0.019
24A916-EFR-D-SO	3/12/2018	1.0	3.12 J	29.8	0.021
24A917-EFL-D-SO	3/12/2018	1.0	3.75 J	30.5	0.025
24A-EF-D-SO-DUP02	3/12/2018	1.0	3.78 J	31	0.033
24A917-EFR-D-SO	3/12/2018	1.0	3.09 J	62.7 J	0.022
24A-EF-D-SO-DUP01	3/12/2018	1.0	2.68 J	48.7 J	0.032
24A918-EFL-D-SO	2/15/2018	1.0	3.89	217	0.043
24A918-EFR-D-SO	2/15/2018	1.0	3.25	2,870	0.033
24A918-EFR-D-SO2	3/29/2018	1.5	3.4	15.7	0.023
24A920-EFL-D-SO	2/8/2018	1.0	2.73	829	0.026
24A920-EFL-D-SO2	3/29/2018	1.5	4.99	14.5	0.044
24A920-EFR-D-SO	2/8/2018	1.0	2.69	58.5	0.022
24A922-EFL-D-SO	2/8/2018	1.0	3.33	353	0.039
24A922-EFR-D-SO	2/8/2018	1.0	2.51	644	0.035
24A922-EFR-D-SO2	3/29/2018	4.0	5.02	18.7	0.06

Table 1 (continued)
Confirmation Soil Sample Results
Parcel 24, Igloo Block A
Fort Wingate Depot Activity

Sample ID	Sample Date	Depth (feet)	Arsenic (mg/kg)	Lead ¹ (mg/kg)	Mercury ² (mg/kg)
Lowest NMED SSL for Human Health*			7.07	400	20.7
FWDA Background Range of Arsenic**			0.2-11.2		
24A923-EFL-D-SO	2/8/2018	1.0	4.14	79	0.034
24A923-EFR-D-SO	2/8/2018	1.0	2.95	478	0.021
24A923-EFR-D-SO2	3/29/2018	2.0	3.51	12.7	0.014
24A924-EFR-D-SO	2/15/2018	1.0	3.17	214	0.058
24A925-EFL-D-SO	2/15/2018	1.0	2.52	104	0.033
24A925-EFR-D-SO	2/15/2018	1.0	3.02	270	0.024
24A926-EFL-D-SO	2/15/2018	1.0	4.48	1,490	0.037
24A926-EFL-D-SO2	3/29/2018	2.0	3.52	16.2	0.027
24A926-EFR-D-SO	2/15/2018	1.0	4.39	126	0.035
24A927-EFL-D-SO	2/15/2018	1.0	3.35	127	0.039
24A929-EFL-D-SO	2/8/2018	1.0	3.1	1,010	0.035
24A929-EFL-D-SO2	3/29/2018	1.0	3.72	14.3	0.034
24A929-EFR-D-SO	2/8/2018	1.0	3.13	170	0.032
24A933-EFL-D-SO	2/8/2018	1.0	4.81	10	0.02
24A933-EFR-D-SO	2/8/2018	1.0	3.95	61.2	0.021
24A934-EFL-D-SO	2/8/2018	1.0	1.98	144	0.034
24A935-EFL-D-SO	2/8/2018	1.0	3.29	162	0.022
24A935-EFR-D-SO	2/8/2018	1.0	3.99	47.2	0.042
24A936-EFL-D-SO	2/8/2018	1.0	2.99	196	0.034
24A936-EFR-D-SO	2/8/2018	1.0	4.41	151	0.034
24A938-EFR-D-SO	2/8/2018	1.0	4.37	365	0.035
24A939-EFL-D-SO	2/8/2018	1.0	1.76	258	0.027
24A939-EFR-D-SO	2/8/2018	1.0	2.42	180	0.02
24A941-EFL-D-SO	2/7/2018	1.0	2.22 J	40	0.011 J
24A941-EFR-D-SO	2/7/2018	1.0	6.55 J	6,350	0.028
24A941-EFR-D-SO2	3/29/2018	3.0	3.79	15.3	0.042
24A942-EFL-D-SO	2/7/2018	1.0	2.65 J	66.6	0.022
24A942-EFR-D-SO	2/7/2018	1.0	4.24 J	58.7	0.035
24A943-EFL-D-SO	2/7/2018	1.0	3.66 J	37.4	0.027
24A943-EFR-D-SO	2/7/2018	1.0	3.65 J	2,540	0.033
24A943-EFR-D-SO2	3/29/2018	3.5	4.55	18	0.045
24A944-EFL-D-SO	2/7/2018	1.0	4.01 J	286	0.033

Table 1 (continued)
Confirmation Soil Sample Results
Parcel 24, Igloo Block A
Fort Wingate Depot Activity

Sample ID	Sample Date	Depth (feet)	Arsenic (mg/kg)	Lead ¹ (mg/kg)	Mercury ² (mg/kg)
Lowest NMED SSL for Human Health*			7.07	400	20.7
FWDA Background Range of Arsenic**			0.2-11.2		
24A944-EFR-D-SO	2/7/2018	1.0	3.73 J	1,590	0.028
24A944-EFR-D-SO2	3/29/2018	2.0	4.03	15.9	0.028
24A945-EFL-D-SO	2/7/2018	1.0	2.98 J	291	0.029
24A946-EFL-D-SO	2/7/2018	1.0	4.58 J	22.1	0.04
24A946-EFR-D-SO	2/7/2018	1.0	2.99 J	145	0.038
24A947-EFR-D-SO	2/7/2018	1.0	4.53 J	150	0.048
24A948-EFL-D-SO	2/8/2018	1.0	3.49	458	0.032
24A948-EFL-D-SO2	3/29/2018	1.5	4.26	23.8	0.046
24A948-EFR-D-SO	2/8/2018	1.0	4.38	12.7	0.034
24A950-EFL-D-SO	2/8/2018	1.0	3.13	47.7	0.021
24A950-EFR-D-SO	2/8/2018	1.0	2.56	35.6	0.018
24A951-EFL-D-SO	2/8/2018	1.0	1.96	104	0.018
24A951-EFR-D-SO	2/8/2018	1.0	2.47	1,470	0.017
24A951-EFR-D-SO2	3/29/2018	2.0	2.76	10.8	0.015
24A952-EFL-D-SO	2/8/2018	1.0	1.32	113	0.021
24A952-EFR-D-SO	2/8/2018	1.0	1.82	223	0.016
24A955-EFL-D-SO	2/7/2018	1.0	2.86 J	457	0.032
24A955-EFL-D-SO2	3/29/2018	1.5	3.64	591	0.026
24A955-EFL-D-SO3	4/12/2018	2.0	3.42	18	0.031
24A955-EFR-D-SO	2/7/2018	1.0	2.72 J	1,100	0.03
24A955-EFR-D-SO2	3/29/2018	2.0	4.53	22.6	0.026
24A962-EFL-D-SO	2/7/2018	1.0	2.92 J	275	0.027
24A962-EFR-D-SO	2/7/2018	1.0	2.09 J	33.6	0.023
24A963-EFL-D-SO	2/7/2018	1.0	3.64 J	22.1	0.028
24A964-EFL-D-SO	2/7/2018	1.0	2.89 J	13.9	0.025
24A964-EFR-D-SO	2/7/2018	1.0	2.72 J	131	0.029
24A965-EFL-D-SO	2/7/2018	1.0	1.19 J	81	0.016
24A969-EFL-D-SO	2/6/2018	1.0	7.1 J	1,630	0.041
24A969-EFL-D-SO2	3/29/2018	2.0	4.46	16.3	0.034
24A969-EFR-D-SO	2/6/2018	1.0	4.69 J	143	0.04
24A970-EFL-D-SO	2/6/2018	1.0	3.43 J	55.7	0.023
24A970-EFR-D-SO	2/6/2018	1.0	3.75 J	90.7	0.031

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Table 2
Sample IDs, Laboratory Reports, and Analyses
Parcel 24, Igloo Block A
Fort Wingate Depot Activity

Laboratory Report	Laboratory Sample ID	Zapata Sample ID	Collection Date	Number of Analytes	
				6020B	7471B
218020733	1	24A969-EFL-D-SO	2/6/2018	2	1
218020733	2	24A969-EFR-D-SO	2/6/2018	2	1
218020733	3	24A970-EFL-D-SO	2/6/2018	2	1
218020733	4	24A970-EFR-D-SO	2/6/2018	2	1
218020733	5	24A971-EFL-D-SO	2/6/2018	2	1
218020733	6	24A971-EFR-D-SO	2/6/2018	2	1
218020733	7	24A975-EFR-D-SO	2/6/2018	2	1
218020733	8	24A976-EFL-D-SO	2/6/2018	2	1
218020733	9	24A976-EFR-D-SO	2/6/2018	2	1
218020733	10	24A977-EFL-D-SO	2/6/2018	2	1
218020733	11	24A977-EFR-D-SO	2/6/2018	2	1
218020823	1	24A965-EFL-D-SO	2/7/2018	2	1
218020823	2	24A964-EFL-D-SO	2/7/2018	2	1
218020823	3	24A964-EFR-D-SO	2/7/2018	2	1
218020823	4	24A963-EFL-D-SO	2/7/2018	2	1
218020823	5	24A962-EFL-D-SO	2/7/2018	2	1
218020823	6	24A962-EFR-D-SO	2/7/2018	2	1
218020823	7	24A955-EFL-D-SO	2/7/2018	2	1
218020823	8	24A955-EFR-D-SO	2/7/2018	2	1
218020823	9	24A941-EFL-D-SO	2/7/2018	2	1
218020823	10	24A941-EFR-D-SO	2/7/2018	2	1
218020823	11	24A942-EFL-D-SO	2/7/2018	2	1
218020823	12	24A942-EFR-D-SO	2/7/2018	2	1
218020823	13	24A943-EFL-D-SO	2/7/2018	2	1
218020823	14	24A943-EFR-D-SO	2/7/2018	2	1
218020823	15	24A944-EFL-D-SO	2/7/2018	2	1
218020823	16	24A944-EFR-D-SO	2/7/2018	2	1
218020823	17	24A945-EFL-D-SO	2/7/2018	2	1
218020823	18	24A946-EFL-D-SO	2/7/2018	2	1
218020823	19	24A946-EFR-D-SO	2/7/2018	2	1
218020823	20	24A947-EFR-D-SO	2/7/2018	2	1
218020925	1	24A948-EFL-D-SO	2/8/2018	2	1
218020925	2	24A948-EFR-D-SO	2/8/2018	2	1
218020925	3	24A950-EFL-D-SO	2/8/2018	2	1
218020925	4	24A950-EFR-D-SO	2/8/2018	2	1
218020925	5	24A951-EFL-D-SO	2/8/2018	2	1
218020925	6	24A951-EFR-D-SO	2/8/2018	2	1
218020925	7	24A952-EFL-D-SO	2/8/2018	2	1
218020925	8	24A952-EFR-D-SO	2/8/2018	2	1
218020925	9	24A939-EFL-D-SO	2/8/2018	2	1
218020925	10	24A939-EFR-D-SO	2/8/2018	2	1
218020925	11	24A938-EFR-D-SO	2/8/2018	2	1
218020925	12	24A936-EFL-D-SO	2/8/2018	2	1
218020925	13	24A936-EFR-D-SO	2/8/2018	2	1
218020925	14	24A935-EFL-D-SO	2/8/2018	2	1
218020925	15	24A935-EFR-D-SO	2/8/2018	2	1
218020925	16	24A934-EFL-D-SO	2/8/2018	2	1
218020925	17	24A933-EFL-D-SO	2/8/2018	2	1
218020925	18	24A933-EFR-D-SO	2/8/2018	2	1
218020925	19	24A929-EFL-D-SO	2/8/2018	2	1
218020925	20	24A929-EFR-D-SO	2/8/2018	2	1
218020925	21	24A920-EFL-D-SO	2/8/2018	2	1
218020925	22	24A920-EFR-D-SO	2/8/2018	2	1
218020925	23	24A922-EFL-D-SO	2/8/2018	2	1

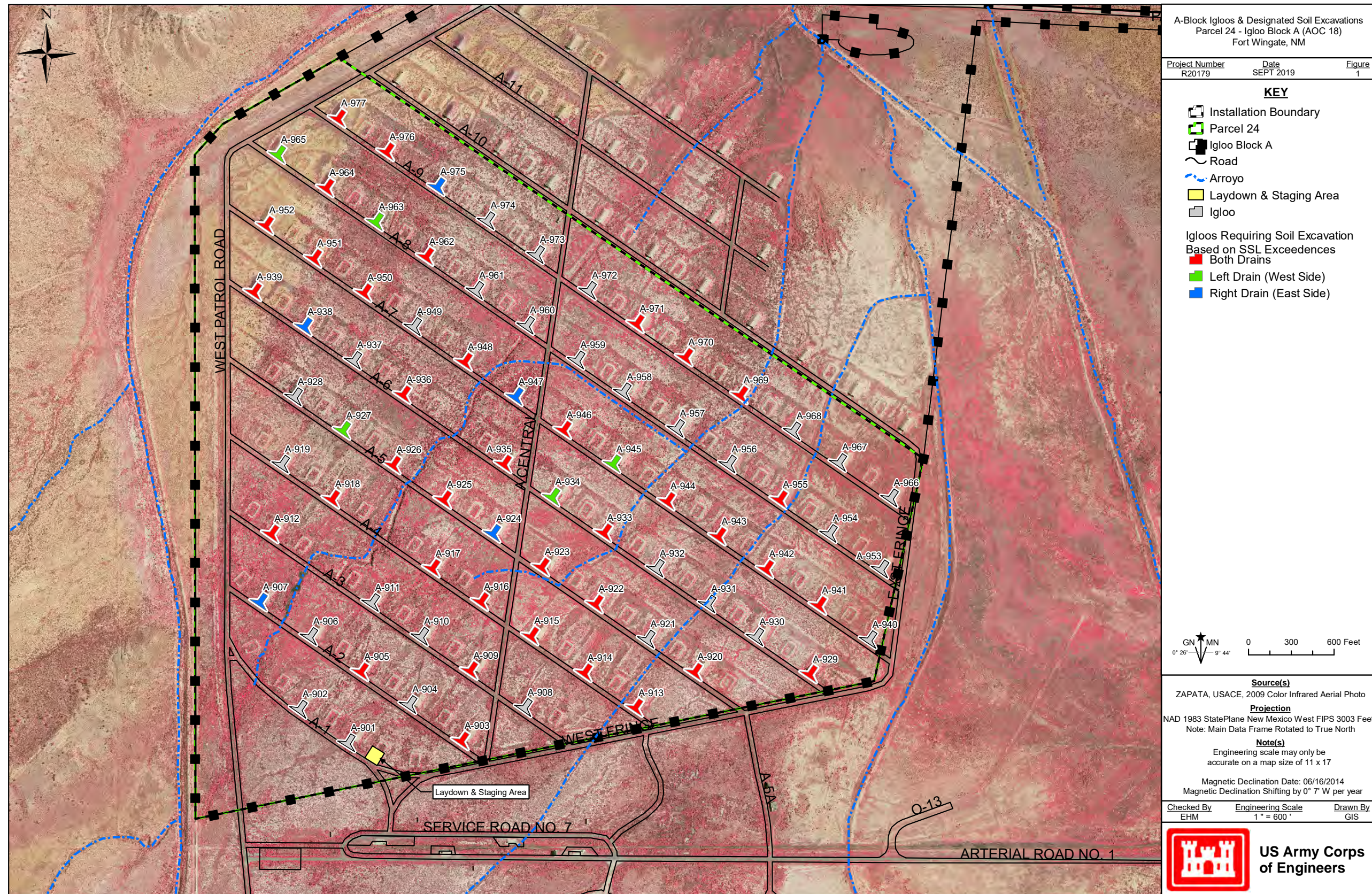
Table 2 (continued)
Sample IDs, Laboratory Reports, and Analyses
Parcel 24, Igloo Block A
Fort Wingate Depot Activity

Laboratory Report	Laboratory Sample ID	Zapata Sample ID	Collection Date	Number of Analytes	
				6020B	7471B
218020925	24	24A922-EFR-D-SO	2/8/2018	2	1
218020925	25	24A923-EFL-D-SO	2/8/2018	2	1
218020925	26	24A923-EFR-D-SO	2/8/2018	2	1
218021729	1	24A924-EFR-D-SO	2/15/2018	2	1
218021729	2	24A925-EFR-D-SO	2/15/2018	2	1
218021729	3	24A925-EFL-D-SO	2/15/2018	2	1
218021729	4	24A926-EFR-D-SO	2/15/2018	2	1
218021729	5	24A926-EFL-D-SO	2/15/2018	2	1
218021729	6	24A927-EFL-D-SO	2/15/2018	2	1
218021729	7	24A918-EFR-D-SO	2/15/2018	2	1
218021729	8	24A918-EFL-D-SO	2/15/2018	2	1
218031317	1	24A917-EFR-D-SO	3/12/2018	2	1
218031317	2	24A917-EFL-D-SO	3/12/2018	2	1
218031317	3	24A916-EFR-D-SO	3/12/2018	2	1
218031317	4	24A916-EFL-D-SO	3/12/2018	2	1
218031317	5	24A915-EFR-D-SO	3/12/2018	2	1
218031317	6	24A915-EFL-D-SO	3/12/2018	2	1
218031317	7	24A914-EFR-D-SO	3/12/2018	2	1
218031317	8	24A914-EFL-D-SO	3/12/2018	2	1
218031317	9	24A913-EFR-D-SO	3/12/2018	2	1
218031317	10	24A913-EFL-D-SO	3/12/2018	2	1
218031317	11	24A912-EFR-D-SO	3/12/2018	2	1
218031317	12	24A912-EFL-D-SO	3/12/2018	2	1
218031317	13	24A909-EFR-D-SO	3/12/2018	2	1
218031317	14	24A909-EFL-D-SO	3/12/2018	2	1
218031317	15	24A907-EFR-D-SO	3/12/2018	2	1
218031317	16	24A905-EFR-D-SO	3/12/2018	2	1
218031317	17	24A905-EFL-D-SO	3/12/2018	2	1
218031317	18	24A903-EFR-D-SO	3/12/2018	2	1
218031317	19	24A903-EFL-D-SO	3/12/2018	2	1
218031317	20	24A-EF-D-SO-DUP01	3/12/2018	2	1
218031317	21	24A-EF-D-SO-DUP02	3/12/2018	2	1
218031317	22	24A-EF-D-SO-DUP03	3/12/2018	2	1
218031317	23	24A-EF-D-SO-DUP04	3/12/2018	2	1
218040309	1	24A977-EFR-D-SO2	3/29/2018	2	1
218040309	2	24A976-EFR-D-SO2	3/29/2018	2	1
218040309	3	24A969-EFL-D-SO2	3/29/2018	2	1
218040309	4	24A955-EFR-D-SO2	3/29/2018	2	1
218040309	5	24A955-EFL-D-SO2	3/29/2018	2	1
218040309	6	24A941-EFR-D-SO2	3/29/2018	2	1
218040309	7	24A943-EFR-D-SO2	3/29/2018	2	1
218040309	8	24A944-EFR-D-SO2	3/29/2018	2	1
218040309	9	24A948-EFL-D-SO2	3/29/2018	2	1
218040309	10	24A951-EFR-D-SO2	3/29/2018	2	1
218040309	11	24A926-EFL-D-SO2	3/29/2018	2	1
218040309	12	24A923-EFR-D-SO2	3/29/2018	2	1
218040309	13	24A922-EFR-D-SO2	3/29/2018	2	1
218040309	14	24A920-EFL-D-SO2	3/29/2018	2	1
218040309	15	24A929-EFL-D-SO2	3/29/2018	2	1
218040309	16	24A918-EFR-D-SO2	3/29/2018	2	1
218041405	1	24A955-EFL-D-SO3	4/12/2018	2	1

1 Laboratory Reports are contained in Appendix E.

FIGURES

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Figures
Page 3



US Army Corps
of Engineers

PHOTOGRAPHIC LOG

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Photograph No. 1
Igloo Block A



Photograph No. 2
Igloo A-947
Spray paint markings indicate where excavation is required



Photograph No. 3
Excavation at Igloo A-920



Photograph No. 4
Excavation Beneath a plugged drain pipe



Photograph No. 5
Confirmation Sample Collection

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Appendix A
NMED Correspondence

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DEPARTMENT OF THE ARMY
FORT WINGATE DEPOT ACTIVITY
P.O. BOX 268
FORT WINGATE, NM 87316

October 22, 2014

Mr. John Kieling
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

**Re: NOTIFICATION OF PERMITTEE-INITIATED INTERIM MEASURE FOR
PARCEL 24 AT FORT WINGATE DEPOT ACTIVITY, MCKINLEY COUNTY,
NEW MEXICO**

Dear Mr. Kieling:

The Department of the Army respectfully submits this notification to implement Permittee-Initiated Interim Measures (PIIM) per the Resource Conservation and Recovery Act (RCRA) permit Section VII.G.3 for the removal of igloo drain pipes that are coated with lead-based paint, and removal of soil below select igloo drain pipe outfalls in Parcel 24 of Igloo Block A. It is our intention to complete the Interim Measures (IM) during the spring/summer of 2015 time frame while our contractor, Zapata Incorporated (ZAPATA), is onsite performing IM activities at Parcel 21 at Fort Wingate Depot Activity (FWDA) near Gallup, New Mexico.

The U.S. Army Corps of Engineers (USACE) completed a Release Assessment Report (RAR) at Parcel 24, dated January 31, 2014. The RAR concluded that based on data collected from x-ray fluorescence (XRF) and analytical data from 2008 and 2010; lead, arsenic, and mercury exceeded New Mexico Environment Department (NMED) soil screening levels (SSLs) (or the site-specific background concentration protocol established for arsenic) in soils below certain igloo drain outfalls in Parcel 24. A summary of those exceedances is provided on attached Table 1. The RAR recommended removal of all igloo drain pipes (each igloo is equipped with two drain pipes), and impacted soil removal from beneath 84 igloo drain pipe outfalls from 46 igloos within the Parcel 24 portion of Igloo Block A.

Based on the RAR conclusions the Army will remove all igloo drain pipes from the igloos in Parcel 24. Additionally, approximately 1/4 cubic yard (CY) of soil will be removed from beneath both igloo drain pipe outfalls of the following igloos:

- A-903, A-905, A-909, A-912, A-913, A-914, A-915, A-916, A-917, A-918, A-920, A-922, A-923, A-925, A-926, A-929, A-933, A-935, A-936, A-939, A-941, A-942, A-943, A-944, A-946, A-948, A-950, A-951, A-952, A-955, A-962, A-964, A-969, A-970, A-971, A-976, and A-977.

Soil will be removed from below the drain pipe outfalls from only the left (west) side igloo drain pipes of the following igloos:

- A-927, A-934, A-945, A-963, and A-965.

Soil will be removed from below the drain pipe outfalls from only the right (east) side igloo drain pipe outfalls of the following igloos:

- A-907, A-924, A-938, A-947, and A-975.

The remaining igloos in Parcel 24 did not have detected SSL exceedances in soil; therefore, only the drain pipes will be removed from those igloos and no soil excavation is necessary. A site map (Figure 1) has been attached showing the location of each igloo requiring drain pipe removal, and identifies which igloo drain locations require soil excavation and sampling.

Drain pipes will be removed from each of the igloos (right and/or left drains) using a flush cutting power saw (i.e., band saw or reciprocating saw). Measures will be implemented to ensure lead paint particles will not endanger workers cutting the drain pipes. Cuttings from the drain pipes will be collected by a sheet of polyethylene plastic placed under the drain pipe during the cutting process to ensure lead particles are not spread onto surrounding uncontaminated soil. Once the igloo drain pipes have been removed, the pipes and plastic sheeting will be packaged and labeled as lead-containing materials. The cutoff pipes will then be transported to a local scrap metal recycler (All City Recycling and Towing) in Gallup, New Mexico for recycling of the metal pipes. After igloo drain pipe removal, all resulting exposed holes in the igloos will be filled with concrete mix to a depth of six inches into the igloo walls.

After excavation of the approximately ¼ CY of soil from beneath the specified igloo drain pipe outfalls listed previously, a discrete confirmation soil sample will be collected from the bottom of each excavation and analyzed for the metals that exceeded NMED SSLs for lead and/or mercury, or the background protocol for arsenic (Table 1). This will ensure remaining analyte (metals) concentrations are below the established cleanup standards. If concentrations of analytes of concern from initial confirmation samples are found to exceed cleanup standards, additional soil will be removed and follow-up confirmation sampling will be completed until the cleanup standards are met.

All soil that is excavated from beneath the igloo drains (expected total of approximately 21 CY) will be combined in a roll off container and sampled for RCRA hazardous waste characterization for arsenic, lead and mercury using the Toxicity Characteristic Leaching Procedure (TCLP) following Environmental Protection Agency (EPA) Method 1311/6020A/7471B to confirm that the material is RCRA non-hazardous waste. The soil will then be transported for disposal as non-hazardous solid waste at the San Juan County Landfill in Aztec, New Mexico.

Confirmation soil sample identification will follow the FWDA sample identification nomenclature protocol. Additionally, quality assurance/quality control (QA/QC) sample (i.e., duplicates, matrix spike/matrix spike duplicates [MS/MSDs]) frequency for confirmation samples will be 1:10 for duplicates, and 1:20 for MS/MSDs.

Following the completion of the IM, a brief letter report documenting the findings of the field effort will be submitted for approval.

Sincerely,

SMITH.STEVEN.
W.1231038520

Digitally signed by
SMITH.STEVEN.W.1231038520
DN: c=US, o=U.S. Government,
ou=DoD, ou=PKI, ou=USA,
cn=SMITH.STEVEN.W.1231038520
Date: 2014.10.24 10:44:06 -0500

FOR Mark Patterson
BRAC Environmental Coordinator

CF:

John Kieling, NMED HWB
Chuck Hendrickson, U.S. EPA Region 6
FWDA Administrative Record
Bill O'Donnell (BRACD)
Steven Smith (USACE SWF)
Larry Rodgers, Navajo Nation
Darrell Tsabetsaye, Zuni Pueblo
Clayton Seoutewa, Southwest Region BIA Zuni
Eldine Stevens, DOI/BIA
Judith Wilson, DOI/BIA
Rose Duwyenie, BIA-NR)
Angela Kelsey, BIA
Administrative Record, Ohio
Steven Morrisette, ZAPATA

Table 1 - Previous Soil Cleanup Level Exceedances
Parcel 24 - Igloo Block A
Fort Wingate Depot Activity - New Mexico

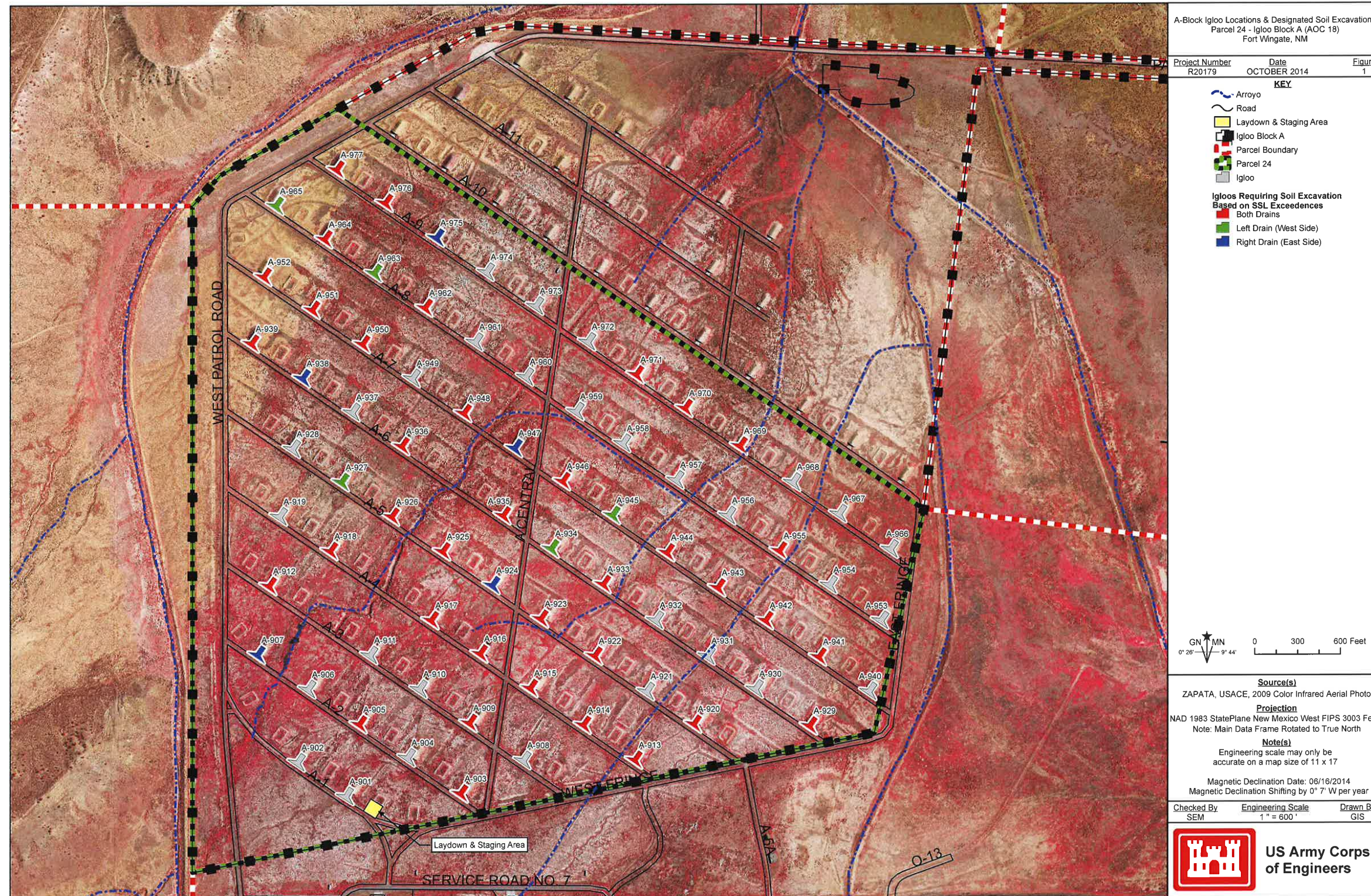
Igloo ID	Sample ID	Date Sampled	Analyte	Results (mg/kg)	SSL (mg/kg)
A-903	2418A-903SS-C-SO	9/19/2008	Lead	775	400
	2418A-903SS-L-XRF-SO	9/30/2010	Lead	1,333	400
A-905	2418A-905SS-L-XRFC-SO	10/5/2010	Arsenic	4.1 ²	5.6 ¹
			Lead	440	400
	2418A-905SS-R-XRF-SO	9/30/2010	Arsenic	45.3	5.6 ¹
A-907	2418A-907SS-R-XRF-SO	9/30/2010	Lead	2,691	400
A-909	2418A-909SS-C-SO	9/19/2010	Lead	954	400
	2418A-909SS-L-XRF-SO	10/1/2010	Lead	1,582	400
	2418A-909SS-R-XRF-SO	10/5/2010	Lead	480	400
A-912	2418A-912SS-C-SO	9/19/2008	Lead	443	400
A-913	2418A-913SS-C-SO	9/18/2008	Lead	415	400
A-914	2418A-914SS-C-SO	9/18/2008	Lead	438	400
	2418A-914SS-R-XRFC-SO	10/5/2010	Lead	640	400
A-915	2418A-915SS-C-SO	9/18/2008	Lead	1,000	400
A-916	2418A-916SS-C-SO	9/18/2008	Lead	948	400
A-917	2418A-917SS-C-SO	9/18/2008	Lead	609	400
A-918	2418A-918SS-C-SO	9/19/2008	Lead	1,090	400
A-920	2418A-920SS-L-XRF-SO	10/1/2010	Lead	497	400
	2418A-920SS-R-XRFC-SO	10/5/2010	Lead	1,400	400
A-922	2418A-922SS-C-SO	9/17/2010	Lead	626	400
	2418A-922SS-R-XRF-SO	10/1/2010	Lead	514	400
A-923	2418A-923SS-C-SO	9/18/2010	Lead	582	400
A-924	2418A-924SS-R-XRFC-SO	10/5/2010	Lead	2,300	400
A-925	2418A-925SS-C-SO	9/18/2008	Lead	762	400
A-926	2418A-926SS-C-SO	9/18/2008	Lead	464	400
A-927	2418A-927SS-L-XRF-SO	10/1/2010	Lead	512	400
A-929	2418A-929SS-C-SO	9/16/2008	Lead	1,390	400
	2418A-929SS-R-XRF-SO	10/5/2010	Arsenic	4.0 ²	5.6 ¹
Lead			3,900	400	
A-933	2418A-933SS-C-SO	9/17/2008	Lead	1,790	400
A-934	2418A-934SS-L-XRF-C-SO	10/5/2010	Lead	430	400
A-935	2418A-935SS-C-SO	9/17/2008	Lead	506	400
	2418A-935SS-L-XRF-SO	10/1/2010	Lead	5,290	400
A-936	2418A-936SS-C-SO	9/17/2008	Lead	824	400
	2418A-936SS-L-XRF-C-SO	10/5/2010	Lead	660	400
	2418A-936SS-L-XRF-SO	10/1/2010	Arsenic	20.2	5.6 ¹
			Lead	11,540	400
	2418A-936SS-R-XRF-SO	10/1/2010	Arsenic	1,088	5.6 ¹
A-938	2418A-938SS-R-XRF-SO	10/1/2010	Lead	445	400
A-939	2418A-939SS-C-SO	9/17/2008	Lead	1,340	400
A-941	2418A-941SS-C-SO	9/15/2008	Lead	741	400
	2418A-941SS-R-XRF-SO	10/1/2010	Lead	1,021	400
A-942	2418A-942SS-C-SO	9/15/2008	Lead	429	400

**Table 1 - Previous Soil Cleanup Level Exceedances
 Parcel 24 - Igloo Block A
 Fort Wingate Depot Activity - New Mexico**

A-943	2418A-943SS-C-SO	9/15/2008	Lead	669	400
	2418A-943SS-L-XRF-SO	10/1/2010	Lead	764	400
A-944	2418A-944SS-C-SO	9/15/2008	Lead	434	400
A-945	2418A-945SS-L-XRF-SO	9/15/2008	Arsenic	43.9	5.6 ¹
A-946	2418A-946SS-C-SO	9/16/2008	Lead	1,460	400
	2418A-946SS-R-XRF-SO	10/2/2010	Lead	2,142	400
A-947	2418A-947SS-R-XRF-SO	10/2/2010	Lead	2,404	400
A-948	2418A-948SS-C-SO	9/16/2008	Lead	603	400
	2418A-948SS-R-XRFC-SO	10/5/2010	Arsenic	4.3 ²	5.6 ¹
A-950	2418A-950SS-C-SO	9/16/2008	Lead	423	400
	2418A-950SS-R-XRF-SO	10/2/2010	Lead	995	400
A-951	2418A-951SS-C-SO	9/16/2008	Lead	499	400
A-952	2418A-952SS-C-SO	9/16/2008	Lead	1,020	400
A-955	2418A-955SS-C-SO	9/13/2008	Lead	413	400
	2418A-955SS-L-XRF-SO	10/2/2010	Lead	2,327	400
	2418A-955SS-R-XRF-SO	10/2/2010	Lead	784	400
A-962	2418A-962SS-C-SO	9/15/2008	Lead	428	400
	2418A-962SS-L-XRF-SO	10/4/2010	Lead	523	400
A-963	2418A-963SS-L-XRF-SO	10/4/2010	Arsenic	26.9	5.6 ¹
A-964	2418A-964SS-C-SO	9/15/2008	Lead	407	400
	2418A-964SS-XRFC-SO	10/5/2010	Lead	740	400
A-965	2418-965SS-L-XRF-SO	10/4/2010	Lead	444	400
A-969	2418A-969SS-C-SO	9/12/2008	Lead	977	400
	2418A-969SS-R-XRF-SO	10/4/2010	Lead	491	400
A-970	2418A-970SS-C-SO	9/12/2008	Lead	494	400
	2418A-970SS-L-XRF-SO	10/4/2010	Mercury	17	15.6
A-971	2418A-971SS-C-SO	9/12/2008	Lead	720	400
A-975	2418A-975SS-R-XRF-SO	10/4/2010	Lead	447	400
A-976	2418A-976SS-C-SO	9/13/2008	Lead	481	400
A-977	2418A-977SS-C-SO	9/13/2008	Lead	606	400
	2418A-977SS-L-XRF-SO	10/4/2010	Lead	828	400

¹ = NMED's two step process for Arsenic levels was used to evaluate the Arsenic levels at Parcel 24 - Igloo Block A. A study by the USACE (at Fort Wingate) and USGS (NM State wide) on the background concentrations of Arsenic determined that the appropriate background level should be 5.6 mg/kg. This number should be used as the SSL over the State's current SSL of 3.9. However, if the levels at the site exceed the 5.6, the levels must be compared to each other to determine if they are consistent. If they are not, further investigation or soil removal must be conducted at the site. Arsenic levels at Igloo Block A were not consistent, and therefore require further investigation or removal. Soil will be removed from all Igloo drains that have arsenic (with both the NMED 3.9 and the background 5.6), lead and mercury exceedances.

² = Arsenic level was detected above NMED's 3.9 mg/kg SSL, but is below the 5.6 mg/kg background level.





DEPARTMENT OF THE ARMY
FORT WINGATE DEPOT ACTIVITY
P.O. BOX 268
FORT WINGATE, NM 87316

November 30, 2017

Mr. John Kieling
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

RE: *Notification of Permittee-Initiated Interim Measures for Parcel 24 / AOC 18, Igloo Block A at Fort Wingate Depot Activity, McKinley County, New Mexico.*

Dear Mr. Kieling:

The Department of the Army respectfully submits this notification to implement Permittee-Initiated Interim Measures (PIIM) per the Resource Conservation and Recovery Act (RCRA) permit Section VII.G.3 for remediation activities at Parcel 24, AOC 18 Igloo Block A at Fort Wingate Depot Activity (FWDA), New Mexico. It is our intention to begin field operations December 11, 2017 and complete the interim measures within one year.

The U.S. Army Corps of Engineers (USACE) submitted the Final Interim Measures Work Plan (IMWP) on October 6, 2014 and received Approval on May 19, 2015.

If you have any questions or require further information, please call me at (505) 721-9770.

Sincerely,

PATTERSON.MAR
K.C.1229214493

Digitally signed by
PATTERSON.MAR.K.C.1229214493
DN: cn=US, o=US, Government, ou=DoD,
ou=PAI, ou=USA,
cn=PATTERSON.MAR.K.C.1229214493
Date: 2017.11.30 10:57:13 -0500

Mark Patterson
BRAC Environmental Coordinator

Cc:
D Cobrain, NMED HWB
B Wear, NMED HWB
M Suzuki, NMED HWB
M Patterson, FWDA BEC
Saqib Khan, USACE SWT

From: Baca, Vicky, NMENV [mailto:Vicky.Baca @state.nm.us]
Sent: Tuesday, May 19, 2015 2:25 PM
To: Patterson, Mark CC V (US); Cobrain, Dave, NMENV
Cc: DavidW SPAHenry (David.W.Henry@spa02.usace.army.mil); Smith, SteveW SWF; Angela Makin; Lane, Angela M SWF; Scoville, Michael G SWF
Subject: RE: Comment 3 for the Parcel 24 RAR Approval w/modification. (UNCLASSIFIED)

Mark, Steve

NMED has reviewed the Notification of Permittee-Initiated Interim Measures (Notification) for Parcel 24 dated October 22, 2014 and concurs with the proposed work. In addition, the Notification serves to address comment 3 in the letter dated May 18, 2015 for the Release Assessment Report, Parcel 24, as the Permittee-initiated measures work plan. However, the Permittee should note that the notification dated October 22, 2014 is a notification and not an official work plan. Never the less, the proposed work is straight forward and contains general information to ensure cleanup is obtained.

If you have questions or need additional information feel free to contact me.

Sincerely,

Vicky Baca



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov



BUTCH TONGATE
Cabinet Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 19, 2018

Mark Patterson
BRAC Environmental Coordinator
Fort Wingate Depot Activity
13497 Elton Road
North Lima, OH 44452

Steve Smith
USACE
CESWF-PER-DD
819 Taylor Street, Room 3B06
Fort Worth, TX 76102

**RE: DISAPPROVAL
FINAL PERMITTEE-INITIATED INTERIM MEASURES REPORT
PARCEL 24 – IGLOO BLOCK A
FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO
EPA ID# NM6213820974
HWB-FWDA-18-007**

Dear Messrs. Patterson and Smith:

The New Mexico Environment Department (NMED) is in receipt of the Fort Wingate Depot Activity (Permittee) *Final Permittee-Initiated Interim Measures Report Parcel 24 – Igloo Block A* (Report), dated August 27, 2018 and received September 7, 2018. NMED has reviewed the Work Plan and hereby issues this Disapproval. The Permittee must address the following comments.

1. Initial Evaluation of Multi-Incremental (MI) Sample Data

NMED Comment: Comment 16 of NMED's March 8, 2018 *Disapproval Final RCRA Facility Investigation Work Plan Parcel 9 Revision 1*, the same document that required the submittal of this Report, states, "[t]he reported constituent concentrations for incremental samples must be multiplied by the number of subsamples in each decision unit for comparison to screening levels. If any exceedances are found during the screening process, the Permittee is also required to conduct additional soil sampling by further dividing the sampling grid in the decision unit to identify whether there is a local area of contamination.

Messrs. Patterson and Smith
November 19, 2018
Page 2

This comment applies to all AOCs and SWMUs where a multi-incremental soil sampling approach is utilized.” The Permittee has not followed this directive. The Permittee must revise the Report to evaluate the composite and multi-incremental sampling results appropriately. Non-compliance with NMED direction may result in enforcement action or delays in achieving corrective action complete status for sites listed on the Permit.

2. Laboratory Report Data Link

NMED Comment: The Report contains multiple analytical data reports, which is typical of most investigation reports. For this and all future documents, the Permittee must provide a method for cross-referencing data reports and specific samples. This could be accomplished through an additional table, an additional column in an existing table, or a column in the database (if included for the project). Include a method for linking a specific sample with the associated analytical laboratory data report in the revised Report.

3. Inappropriate usage of data

NMED Comment: Work was performed at the Parcel 24 igloos in the absence of NMED-approved work plans. Review of work performed on the Parcel 24 igloos suggests that there are problems with the method in which composite and multi-incremental (MI) samples were evaluated. For example, it appears that direct comparison of composite and MI sample concentrations to soil screening limits (SSLs) was conducted instead of multiplying concentration results by number of subsamples. Also, invalid x-ray diffraction (XRF) data was used to make decisions (e.g., no correlation between XRF results and lab confirmation results) and inappropriate SSLs were used for contaminant concentration comparison (e.g., chromium III vs total chromium).

Work has continued at the Parcel 24 igloos without approved work plans. Work conducted without a NMED-approved work plan is performed at the Permittee’s own risk. Review of work performed indicates that inappropriate decisions have been made based on data that is not appropriate for use in decision-making. As stated in multiple comments spanning more than a decade, MI samples in this application are only appropriate for screening-level decisions, e.g., is the contaminant present or not. In addition, NMED has made clear that data collected by field instruments is only appropriate for screening-level decisions unless a clear and accurate correlation between the field instrument data and duplicate analytical laboratory data is established. Since this was not accomplished at Parcel 24, the XRF data is invalid and must not be used for any decision making.

4. Transmittal Letter

Permittee Statement: “The U.S. Army Corps of Engineers (USACE) completed a Release Assessment Report (RAR) at Parcel 24, dated January 31, 2014. The RAR concluded that based on data collected from x-ray fluorescence (XRF) and analytical data from 2008 and 2010, lead, arsenic, and mercury exceeded New Mexico Environment Department (NMED)

Messrs. Patterson and Smith
November 19, 2018
Page 3

soil screening levels (SSLs) (or the site-specific background concentration protocol established for arsenic) in soils below certain igloo drain outfalls in Parcel 24.”

NMED Comment: The transmittal letter presents information that is not included in the Report. All information related to the purpose of the submittal should be included in the submittal, not in the transmittal letter. Revise the Report to include the details provided above and remove technical information from the transmittal letter.

5. Transmittal Letter

Permittee Statement: “The Army submitted a Notification of Permittee-Initiated Interim Measures (PIIM) to NMED for Parcel 24 dated October 22, 2014. It was approved by Vicki Baca of your office by email on May 19, 2015 (Attachment 1).”

NMED Comment: This statement is not accurate. The email from Vicki Baca concurred with the work proposed, but specifically stated that the notification was “not an official work plan”. Therefore, there was no official approval. In addition, there is no Attachment 1 included with the Report. Avoid inaccurate, unsupported, or misleading statements in future submittals. Remove the statement from the revised Report.

6. Section 1.0, Introduction, page 1-1

Permittee Statement: “ZAPATA executed the approved PIIM letter work plan scope; however, it should be noted that New Mexico Environment Department (NMED) Soil Screening Levels (SSLs) outlined in the 2017 guidance (NMED, 2017) were implemented at the time of field sampling, as opposed to the 2015 levels approved in the letter.”

NMED Comment: This statement is not accurate. A letter work plan was never formally submitted to NMED. Therefore, there is no NMED-approved PIIM letter work plan. While a notification that the Permittee intended to perform work was submitted, NMED’s concurrence specifically stated that the notification was “not an official work plan”. Remove the statement from the revised Report.

7. Section 2.3, Confirmation Sampling, page 2-1

NMED Comment: Soil sampling procedures were not described in the Report. All methods used in the field must be described in the Report. Provide details of the soil sampling procedures, including duplicate sample collection, in the revised Report.

8. Section 3.0, Summary and Conclusions, page 3-1

Permittee Statement: “The interim measures for Parcel 24 Igloo Block A have been completed and No Further Action (NFA) is recommended.”

Messrs. Patterson and Smith
 November 19, 2018
 Page 4

NMED Comment: NMED does not agree with the recommendation above. The Permittee has not investigated many locations where the data indicates that contamination is likely to be present. The table below indicates locations that remain to be further characterized and will likely require remediation.

Table 1: Locations Requiring Further Investigation and/or Remediation

Igloo	Exceedance Sample Type	Notes
A-901	MI	Exceeded background for lead in MI sample. Further characterization is warranted at the decision unit.
A-902	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-904	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain locations may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-906	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-907	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.
A-908	Comp/MI	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations. Also exceeded background for lead in MI sample. Further characterization is warranted at the decision unit.
A-910	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-912	Comp	Both drains were excavated and sampled during the PIIM. The location had previously exceeded the standard for total chromium in an XRF sample from the right drain. Chromium was not analyzed during the PIIM. A confirmation sample must be collected and analyzed for total chromium from the right drain location.
A-914	Comp	Both drains were excavated and sampled during the PIIM. The location had previously exceeded the standard for total chromium in an XRF sample from the left drain. Chromium was not analyzed during the PIIM. A confirmation sample must be collected and analyzed for total chromium from the left drain location.

Messrs. Patterson and Smith
 November 19, 2018
 Page 5

A-919	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-924	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.
A-927	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.
A-928	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-930	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-932	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-934	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.
A-937	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-938	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.
A-941	MI	Exceeded background for lead in the MI sample. Further characterization is warranted at the decision unit.
A-945	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.
A-947	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.

Messrs. Patterson and Smith
 November 19, 2018
 Page 6

A-949	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-954	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-956	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-957	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-958	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-959	MI	Exceeded background for lead in the MI sample. Further characterization is warranted at the decision unit.
A-963	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.
A-965	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The left side was addressed in PIIM. Further characterization and potential excavation is warranted for the right drain location.
A-967	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-968	Comp/MI	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations. Also exceeded background for lead in the MI sample. Further characterization is warranted at decision unit.
A-973	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.
A-974	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. Further characterization and potential excavation is warranted at both drain locations.

Messrs. Patterson and Smith
 November 19, 2018
 Page 7

A-975	Comp	Exceeded half the standard for lead in composite sample, indicating that one or the other drain location may require remediation. The right side was addressed in PIIM. Further characterization and potential excavation is warranted for the left drain location.
Y-A962	MI	Exceeded background for lead in the MI sample. Further characterization is warranted at the decision unit.

The Permittee must submit a workplan for review and approval by NMED that proposes the characterization and remediation activities for the sites listed above no later than June 27, 2019.

9. Appendix C, Confirmation Sample Data, p 1 and 5

Permittee Statements: “The analytical data were validated in accordance with specifications given in the Interim Measures Work Plan Parcel 21 – Solid Waste Management Unit 1 – TNT Leaching Beds, Final, July 14, 2016 (Work Plan), and in U.S. Army Corps of Engineers (USACE) documents Guidance for Evaluating Performance-Based Chemical Data, EM 200-1-10, June 30, 2005, and Chemical Data Quality Management for Environmental Restoration Activities, ER 200-1-7, November 28, 2014.”, and “Four field duplicates were collected in association with the soil sampling at Parcel 24.”

NMED Comment: Out of a total of 104 samples, the Permittee collected only four duplicates for quality assurance. In addition, all four duplicates were collected on the final day of initial sampling, almost a month after the previous 65 samples had been collected over three days when duplicates were not collected, suggesting that the collected duplicate samples were an afterthought. The Work Plan referenced in the Permittee Statement above specifically states, “[f]ield duplicate samples will be collected and analyzed at a frequency of 10% (one duplicate for every ten field samples collected).” The Permittee collected less than 4% duplicates. Performance of work without an approved work plan has resulted in data collected without meeting the designated quality assurance requirements. Failure to collect appropriate quality assurance samples can result in rejection of data. Provide an explanation in the revised Report text as to why 10% field duplicates were not collected, as well as a justification (other than professional judgement) as to why the data are acceptable for use.

The Work Plan also specifically states,

“The identity of field duplicate samples will not be provided to the analysts or laboratory personnel. A log will be kept identifying each field duplicate sample to its parent sample. This procedure ensures that the laboratory will not know which duplicate sample matches the field sample. A table will be provided in the IM report that designates the field duplicate sample to the associated field sample.”

This procedure was also not followed, as the four duplicate samples were all submitted with “DUP” in the sample identifier. Provide an explanation as to why the cited work plan was not followed.

Messrs. Patterson and Smith
November 19, 2018
Page 8

In addition, one of the four field duplicates resulted in concentrations of lead and mercury that were 3 to 5 times the concentrations found in the original sample. According to the Work Plan referenced in Appendix C, the RPD goal for duplicate samples is $\leq 20\%$. Half of the duplicate samples exceed the 20% goal, yet no samples were qualified. The cited work plan specifically states,

- “Field duplicates will be evaluated by %RPD or, at low levels (i.e., when one or both results are less than 5 x Limits of Quantitation [LOQ]), the absolute difference in results (/S-D/). The specific numeric criteria for field duplicates for this project are as follows:
- When one or both results are less than 5 x LOQ, the extent of variability will be considered acceptable if, for soil samples, /S-D/ is less than the magnitude of LOQ x 2 and, for water samples, /S-D/ is less than the magnitude of the LOQ.
 - When both results are greater than 5 x LOQ, the extent of variability will be considered acceptable if, for soil samples, %RPD is less than 50% and, for water samples, %RPD is less than 35%.”

General QA/QC standards would require all data above the target 20% RPD to be qualified with a J flag for estimated value and all data that exceeds 50% RPD to be rejected and qualified with a R flag. The Permittee provides no discussion of this issue in the Report text. The Permittee must provide a discussion of the issue and justification (other than professional judgement) for not qualifying and/or rejecting all data based on the duplicate sample results with half of the duplicates exceeding the RPD range for acceptability.

10. Appendix C, Confirmation Sample Data, p 11

Permittee Statement: “However, as noted in Section 2.4.2, the results for lead and mercury for the primary sample-field duplicate pair collected at location 24A903-EFR-D-SO yielded data for cumulative precision that exceeded project objectives given in the Work Plan.”


NMED Comment: The statement is not accurate. The work plan referenced in Appendix C states that project objectives for RPD% is $\leq 20\%$. In addition to sample 24A903-EFR-D-SO, samples 24A917-EFR-D-SO and 24A917-EFL-D-SO exceeded project objectives given in the Work Plan. Three of the four duplicate samples exceeded project objectives, yet no sample results were qualified and the issue was not discussed in the Report text. Correct the statement above, provide a discussion of the issue with the duplicates, and provide justification (other than professional judgement) for not qualifying and/or rejecting any data based on these results in the revised Report.

The Permittee must submit a revised Report that addresses all comments contained in this Disapproval. For each submittal, the Permittee must include a response letter that cross-references where NMED’s associated numbered comments were addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Report showing all changes that have been made to the plan, as well as a revised electronic version of the Report. The revised Report must be submitted no later than **May 31, 2019**. In addition, the Permittee must submit an work plan that proposes further characterization and remediation of soil at the locations provided in Comment 7 to NMED no later than **June 28, 2019**.

Messrs. Patterson and Smith
November 19, 2018
Page 9

Should you have any questions, please contact Ben Wear of my staff at (505) 476-6041.

Sincerely,



John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
B. Wear, NMED HWB
M. Suzuki, NMED HWB
C. Hendrickson, U.S. EPA Region 6
L. Rodgers, Navajo Nation
S. Begay-Platero, Navajo Nation
M. Harrington, Pueblo of Zuni
C. Seoutewa, Southwest Region BIA
G. Padilla, Navajo BIA
J. Wilson, BIA
B. Howerton, BIA
R. White, BIA
C. Esler, Sundance Consulting, Inc.

File: FWDA 2018 and Reading, Igloos - Parcel 24, FWDA-18-007



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

May 29, 2019

Base Realignment and Closure Division

Mr. John Kieling
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

**Re: NOTIFICATION OF SUBMITTAL OF FINAL, REV. 1 PERMITTEE-INITIATED
INTERIM MEASURES REPORT FOR PARCEL 24 AT FORT WINGATE DEPOT
ACTIVITY, MCKINLEY COUNTY, NEW MEXICO**

Dear Mr. Kieling:

This letter is in reply to the NMED Disapproval letter dated November 19, 2018, reference number HWB-FWDA-18-007 regarding the Parcel 24 PIIM Report. The following are the Army's responses and cross-referencing the numbered NMED comments. This letter also transmits the revised report and the red-line strike-out copy of the edits.

1. **NMED Comment:** Comment 16 of NMED's March 8, 2018 Disapproval Final RCRA Facility Investigation Work Plan Parcel 9 Revision 1, the same document that required the submittal of this Report, states, "[t]he reported constituent concentrations for incremental samples must be multiplied by the number of subsamples in each decision unit for comparison to screening levels. If any exceedances are found during the screening process, the Permittee is also required to conduct additional soil sampling by further dividing the sampling grid in the decision unit to identify whether there is a local area of contamination.

This comment applies to all AOCs and SWMUs where a multi-incremental soil sampling approach is utilized." The Permittee has not followed this directive. The Permittee must revise the Report to evaluate the composite and multi-incremental sampling results appropriately. Non-compliance with NMED direction may result in enforcement action or delays in achieving corrective action complete status for sites listed on the Permit.

Army Response: Comment Noted: Please note that the scope of the work performed at P24 Igloo Block A was described in the *Notification of Permittee-Initiated Interim Measures for Parcel 24* (October 22, 2014). This document was submitted to NMED received an email concurrence on May 19, 2015 (originally attached to the transmittal letter and now contained within Appendix A).

NMED's comment appears to apply to the evaluation of data in the *Final Release Assessment Report, Parcel 24*, dated January 31, 2014. Please note that NMED reviewed the 2014 RAR and issued an approval letter on May 18, 2015.

The work performed and submitted under this Report involved removal of all drain pipes and ¼ cubic yard (CY) of soil from beneath designated igloo drain outfalls. Following soil removal, one discrete confirmation soil sample was collected from the floor of each

excavation and submitted for analysis of lead, arsenic, and mercury. Confirmation samples were then compared to NMED SSLs for lead (400 mg/kg) and mercury (20.50 mg/kg) per NMED 2017 revised Risk Guidance. In addition, the site-wide background reference value of 5.6 mg/kg for arsenic was used. Soil beneath 84 igloo drains was removed and confirmation samples were below current NMED SSLs. The Army did not utilize MI/ISM sampling protocols. The Army, therefore, believes that it performed the subject PIIM work appropriately.

No changes were incorporated into the Report as a result of Comment 1.

2. Laboratory Report Data Link

NMED Comment: The Report contains multiple analytical data reports, which is typical of most investigation reports. For this and all other future documents, the Permittee must provide a method for cross-referencing data reports and specific samples. This could be accomplished through an additional table, an additional column in an existing table, or a column in the database (if included for the project). Include a method for linking a specific sample with the associated analytical laboratory data report in the revised Report.

Army Response: Concur. Table 2-1 in the Quality Control Summary Report (Appendix C) provides the Laboratory Report number with the corresponding Sample ID, collection date, and analyses. This table has been reproduced in the main body of the document as Table 2 in the "Tables" section (p. 7).

3. Inappropriate usage of data:

NMED Comment: Work was performed at the Parcel 24 igloos in the absence of NMED-approved work plans. Review of work performed on the Parcel 24 igloos suggests that there are problems with the method in which composite and multi-incremental (MI) samples were evaluated. For example, it appears that direct comparison of composite and MI sample concentrations to soil screening limits (SSLs) was conducted instead of multiplying concentration results by number of subsamples. Also, invalid x-ray diffraction (XRF) data was used to make decisions (e.g., no correlation between XRF results and lab confirmation results) and inappropriate SSLs were used for contaminant concentration comparison (e.g., chromium III vs total chromium).

Work has continued at the Parcel 24 igloos without approved work plans. Work conducted without a NMED-approved work plan is performed at the Permittee's own risk. Review of work performed indicates that inappropriate decisions have been made based on data that is not appropriate for use in decision-making. As stated in multiple comments spanning more than a decade, MI samples in this application are only appropriate for screening-level decisions, e. g., is the contaminant present or not. In addition, NMED has made clear that data collected by field instruments is only appropriate for screening-level decisions unless a clear and accurate correlation between the field instrument data and duplicate analytical laboratory data is established. Since this was not accomplished at Parcel 24, the XRF data is invalid and must not be used for any decision making

Army Response: As indicated in the response to Comment 1, the scope of work follows the *Notification of Permittee-Initiated Interim Measures for Parcel 24* (October 22, 2014). This document was reviewed by NMED and concurrence was provided May 19, 2015 via email. The May 19, 2015 email clearly states that, "*NMED has reviewed the Notification of Permittee-Initiated Interim Measures (Notification) for Parcel 24 dated October 22, 2014*

and concurs with the proposed work” (originally attached to the transmittal letter and now contained in Appendix A); NMED had no objections with the Army proceeding with the work proposed in the Notification of PIIM for Parcel 24.

The igloo drain locations that were selected for the cleanup under this PIIM WP were based on the recommendations of the 2014 Release Assessment Report. This report was also approved by NMED in its letter HWB-FWDA-14-0002 dated May 18, 2015. It is important to note that during PIIM field efforts, the Army collected discrete confirmation samples once soil was removed from beneath the 84 igloo drains and results were compared with SSLs from the 2019 Risk Assessment Guidance.

XRF testing was not used to determine removal of soil. Whether discrete or composite samples, the Army sampled the soils under all the igloo drains in Parcel 24 during the 2008 and 2010 sampling events as presented in the Approved (with Modification) Final Release Assessment Report for Parcel 24 (USACE, 2014); NMED approved the report on 18 May 2015. The samples were sent to an ELAP certified lab and analytical results were used to determine if removal was needed for each drain. Soil removal was based on composite samples with a lead concentration less than or equal to 200 mg/kg (half the 400 mg/kg SSL per NMED guidance) or discrete samples taken with results less than or equal to the NMED SSL of 400 mg/kg. All confirmation samples taken after soil remediation were discrete samples and were also sent to an ELAP certified lab

The Army used the SSLs in effect at the time (June 2012) to screen contaminant concentrations at the time of the field work for the P24 RAR. Chromium III and chromium VI values were listed in the 2012 Risk Assessment Guidance for Investigations and Remediation, Volume I, February 2012 (updated June 2012). Total chromium was not in the 2012 Guidance and therefore, was not included in the RAR report. Total chromium was introduced for the first time in the 2014 NMED guidance, which is why that value is not shown in the P24 RAR. SSLs used in the P24 PIIM Report reflect the most recent NMED SSLs.

In addition to the review conducted as part of the response to Comment #8, the Army will re-evaluate all data in the RAR for potential data gaps and address additional Parcel 24 work in a future work plan.

No changes were incorporated into the Report as a result of Comment 3.

4. Transmittal Letter

Permittee Statement: "The U.S. Army Corps of Engineers (USACE) completed a Release Assessment Report (RAR) at Parcel 24, dated January 31, 2014. The RAR concluded that based on data collected from x-ray fluorescence (XRF) and analytical data from 2008 and 2010, lead, arsenic, and mercury exceeded New Mexico Environment Department (NMED) soil screening levels (SSLs) (or the site-specific background concentration protocol established for arsenic) in soils below certain igloo drain outfalls in Parcel 24."]

NMED Comment: The transmittal letter presents information that is not included in the Report. All information related to the purpose of the submittal should be included in the submittal, not in the transmittal letter. Revise the Report to include the details provided above and remove technical information from the transmittal letter.

Army Response: Concur. The transmittal letter has been revised to remove this information. The Introduction of the Report discusses the RAR and recommendations made therein; information previously provided in the transmittal letter has been incorporated into the Introduction. Comment 4 resulted in revision of the transmittal letter accompanying the Final PIIM. Report, Rev. 1. Revisions were also made to Chapter 1.0, Introduction, paragraph 1 (p. 1-1).

5. Transmittal Letter:

Permittee Statement: The Army submitted a Notification of Permittee-Initiated Interim Measures (PIIM) to NMED for Parcel 24 dated October 22, 2014. It was approved by Vicki Boca of your office by email on May 19, 2015 (attachment 1)

NMED Comment: This statement is not accurate. The email from Vicki Boca concurred with the work proposed, but specifically stated that the notification was not an official work plan. Therefore, there was no official approval. In addition, there is no Attachment 1 included with the report. Avoid inaccurate, unsupported, or misleading statements in future submittals. Remove the statement from revised report.

Army Response: Comment Noted. As noted in comment 3 above, the scope of work for the subject report follows the Notification of Permittee-Initiated Interim Measures for Parcel 24 (October 22, 2014) WP. This document was reviewed by NMED and concurrence provided on May 19, 2015 via email from Ms. Vicky Baca. The May 19, 2015 email clearly states that, "NMED has reviewed the Notification of Permittee-Initiated Interim Measures (Notification) for Parcel 24 dated October 22, 2014 and concurs with the proposed work." Ms. Baca clarifies that the submitted PIIM is a notification and not an official work plan. However, the email further states, "Never the less, the proposed work is straight forward and contains general information to ensure cleanup is obtained." Therefore, the Army concluded that NMED had no objections with the Army's intent to proceed with the work proposed in the Notification of PIIM for Parcel 24. Furthermore, the Army's intent on proceeding with the field efforts were discussed during a conference call followed by email exchange between Ms. Baca, David Henry, and Mark Patterson. A notification that the Army was commencing field operations was also sent to NMED on November 30, 2017 (contained in Appendix A, p. A-9).

The Army has revised its statement to correctly reflect the information provided above. The email from Vicky Baca has been included in Appendix A (NMED Correspondence). Comment 5 resulted in revision to the transmittal letter and insertion of the email from Ms. Baca into Appendix A (p. A-10).

6. Section 1.0, Introduction, Page 1-1

Permittee Statement: "ZAPATA executed the approved PIIM letter work plan scope; however, it should be noted that New Mexico Environment Department (NMED) Soil Screening Levels (SSLs) outlined in the 2017 guidance (NMED, 2017) were implemented at the time of field sampling, as opposed to the 2015 levels approved in the letter."

NMED Comment: This statement is not accurate. A letter work plan was never formally submitted to NMED. Therefore, there is no NMED-approved PIIM letter work plan. While a

notification that the Permittee intended to perform work was submitted, NMED's concurrence specifically stated that the notification was "not an official work plan". Remove the statement from the revised Report.

Army Response: Comment Noted. As outlined in Army's response to comments 3 and 5, the Army will revise the subject statement and provide additional clarification. Paragraph 2 of Chapter 1.0, Introduction (p. 1-1) was revised as a result of Comment 6.

7. Section 2.3, Confirmation Sampling, page 2-1

NMED Comment: Soil sampling procedures were not described in the Report. All methods used in the field must be described in the Report. Provide details of the soil sampling procedures, including duplicate sample collection, in the revised Report.

Army Response: Concur. Detailed soil sampling procedures have been added to Section 2.3 of the Report, as well as duplicate sample collection procedures and results. Section 2.3, Confirmation Sampling, paragraph 1 (p.2-1) was revised to include soil sampling procedures, and discussion of duplicate results were inserted as paragraph 6 (p.2-2).

8. Section 3.0, Summary and Conclusions, page 3-

Permittee Statement: "The interim measures for Parcel 24 Igloo Block A have been completed and No Further Action (NFA) is recommended."

NMED Comment: NMED does not agree with the recommendation above. The Permittee has not investigated many locations where the data indicates that contamination is likely to be present. The table below indicates locations that remain to be further characterized and will likely require remediation. The Permittee must submit a work plan for review and approval by NMED that proposes the characterization and remediation activities for the sites listed above no later than June 27, 2019.
Table is attached separately.

Army Response: The Army agrees that further action for some igloos drain pipe soils is still required and the statement of No Further Action is withdrawn. Section 3 of the report will be revised to reflect this.

Table 1 from NMED's Disapproval letter dated November 19, 2018 has been reviewed and checked against site data and the Army has four categories of responses:

- 1) MI Samples: No action is proposed in conjunction with Parcel 9 Igloo drain pipe and soil removal.
- 2) Composite samples where half the standard for lead was exceeded, indicating that one or the other drain location may require remediation and only one drain was remediated: Include removal and confirmation testing of soil beneath the un-remediated drain in future Parcel 9 Igloo drain pipe and soil removal.
- 3) Composite samples where half the standard for lead was exceeded, indicating that one or the other drain location may require remediation and neither drain was remediated: Include removal and confirmation testing of soil beneath both drains in future Parcel 9 Igloo drain pipe and soil removal.

- 4) Composite samples where XRF screening showed a location where total chromium exceeded the standard, removal had occurred but confirmation sampling did not include chromium in the list of analyses: Include confirmation testing of soil under the appropriate drain at the bottom of the fill depth in native soil for total chromium and chromium VI in future Parcel 9 Igloo drain pipe and soil removal.

These responses on an igloo-by-igloo basis are presented in a revised Table 1. Table 1 is attached separately.

9. Appendix C, Confirmation Sample Data, p 1 and 5

Permittee Statements: "The analytical data were validated in accordance with specifications given in the Interim Measures Work Plan Parcel 21 - Solid Waste Management Unit 1 - TNT Leaching Beds, Final, July 14, 2016 (Work Plan), and in U.S. Army Corps of Engineers (USACE) documents Guidance for Evaluating Performance-Based Chemical Data, EM 200- 1-10, June 30, 2005, and Chemical Data Quality Management for Environmental Restoration Activities, ER 200-1-7, November 28, 2014.", and "Four field duplicates were collected in association with the soil sampling at Parcel 24."

NMED Comment: Out of a total of 104 samples, the Permittee collected only four duplicates for quality assurance. In addition, all four duplicates were collected on the final day of initial sampling, almost a month after the previous 65 samples had been collected over three days when duplicates were not collected, suggesting that the collected duplicate samples were an afterthought. The Work Plan referenced in the Permittee Statement above specifically states, "[field duplicate samples will be collected and analyzed at a frequency of 10% (one duplicate for every ten field samples collected)." The Permittee collected less than 4% duplicates. Performance of work without an approved work plan has resulted in data collected without meeting the designated quality assurance requirements. Failure to collect appropriate quality assurance samples can result in rejection of data. Provide an explanation in the revised Report text as to why 10% field duplicates were not collected, as well as a justification (other than professional judgment) as to why the data are acceptable for use.

The Work Plan also specifically states, "The identity of field duplicate samples will not be provided to the analysts or laboratory personnel. A log will be kept identifying each field duplicate sample to its parent sample. This procedure ensures that the laboratory will not know which duplicate sample matches the field sample. A table will be provided in the IM report that designates the field duplicate sample to the associated field sample." This procedure was also not followed, as the four duplicate samples were all submitted with "DUP" in the sample identifier. Provide an explanation as to why the cited work plan was not followed.

In addition, one of the four field duplicates resulted in concentrations of lead and mercury that were 3 to 5 times the concentrations found in the original sample. According to the Work Plan referenced in Appendix C, the RPD goal for duplicate samples is 20%. Half of the duplicate samples exceed the 20% goal, yet no samples were qualified. The cited work plan specifically states, "Field duplicates will be evaluated by %RPD or, at low levels (i.e., when one or both results are less than 5 x Limits of Quantitation [LOQ]), the absolute

difference in results (*/S-D/*). The specific numeric criteria for field duplicates for this project are as follows:

- When one or both results are less than 5 x LOQ, the extent of variability will be considered acceptable if, for soil samples, */S-D/* is less than the magnitude of LOQ x 2 and, for water samples, */S-D/* is less than the magnitude of the LOQ.
- When both results are greater than 5 x LOQ, the extent of variability will be considered acceptable if, for soil samples, %RPD is less than 50% and, for water samples, %RPD is less than 35%."

General QA/QC standards would require all data above the target 20% RPD to be qualified with a J flag for estimated value and all data that exceeds 50% RPD to be rejected and qualified with a R flag. The Permittee provides no discussion of this issue in the Report text. The Permittee must provide a discussion of the issue and justification (other than professional judgment) for not qualifying and/or rejecting all data based on the duplicate sample results with half of the duplicates exceeding the RPD range for acceptability.

Army Response:

As commented, a 4% field duplicate collection rate was achieved for Parcel 24, rather than the 10% rate specified in the Work Plan, however, the Army does not believe that this oversight impacts the usability or representativeness of the data generated from this field event. Our rationale follows:

Given the soil heterogeneity reflected in the field duplicate results, Army believes these data have limited value in documenting the precision of the sample collection process and the reproducibility of results. This is supported by the laboratory QC results in several ways. Although matrix spike results are not meaningful for lead because the spike concentrations were insignificant relative to the parent sample concentrations, for a COC such as arsenic the matrix spike analysis resulted in (J) qualification of all arsenic results, indicating that matrix interferences may have impacted the analyses. The likelihood of matrix interference is reinforced by the fact that laboratory control samples (LCSs) for arsenic and lead were within acceptance limits in all instances (validating the laboratory methodology). In addition, all serial dilution and/or post-digestion spike results were within project acceptance limits in all instances. Initial and continuing calibration verifications (ICVs and CCVs) bracketing the analyses of the soil samples were reviewed and confirmed as being within acceptance limits of 90-110% in all instances. Thus, the totality of the laboratory QC data indicates that the variability in field duplicate results is not a result of analytical bias, but of heterogeneity in the matrix. Considering that arsenic, lead, and mercury concentrations for all primary and duplicate samples are significantly less than background/SSLs, the data quality is adequate for the purpose of soil confirmation.

A new paragraph has been added to Section 2.3, Confirmation Sampling (paragraph 6. p. 2-2) that provides a discussion of duplicate precision, followed by conclusions substantiating the usability and representativeness of the sample data.

Regarding the identity of field duplicate samples, a procedure is in place to ensure that the laboratory does not know which parent sample matches the duplicate (i.e., a blind duplicate). There is no quality control issue with the laboratory knowing that a sample is a field duplicate, as long as the matching parent sample is not identified. Please note that

this is a standard industry practice. Section 4.2.1.1, p. 4-5, of the Final Interim Measures Work Plan for Parcel 21 (ZAPATA, September 2017) states that “A log will be kept matching each field duplicate sample to its parent, which will not be provided to the laboratory. Field duplicate and associated parent sample results will be compared and discussed in the DQSR.” A previous version of the Work Plan (July 2016) contains the wording in the comment, but this was clarified in a subsequent version. Additionally, Section 4.6 of the Work Plan, Sample Identification, p. 4-10, states that duplicate samples will be identified with “DUP” in the sample ID. Therefore, the Work Plan was followed regarding identification of field duplicates, as well as the sample identifier. The laboratory was not aware of the duplicate/parent identifications. Primary and duplicate samples are provided below as an example:

Primary	Duplicate
24A917-EFR-D-SO	24A-EF-D-SO-DUP01
24A917-EFL-D-SO	24A-EF-D-SO-DUP02
24A903-EFR-D-SO	24A-EF-D-SO-DUP03
24A903-EFL-D-SO	24A-EF-D-SO-DUP04

The chain of custody is contained within Laboratory Report 218031317. The duplicates are not listed prior to or after the primary sample, and the collection time for each is “0000” to prevent matching the collection times. There is no way that the laboratory could match the primary/duplicate samples. No changes were made to the report as a result of this portion of Comment 9.

The goal of 20% RPD for soil field duplicates is extremely stringent for soil samples, given their characteristic heterogeneity (and, in fact, a limit of $\leq 50\%$ RPD was given in the IMWP). Of 12 analyte result comparisons, only one %RPD was greater than 50% (lead reported for the primary sample-field duplicate pair collected from location 24A903-EFR-D-SO), and only two comparisons were greater than the 20% RPD goal (lead reported for the primary sample-field duplicate pair collected from location 24A917-EFR-D-SO and arsenic from the primary sample-field duplicate pair collected from location 24A903-EFR-D-SO). Consistent with the %RPD goal of 20%, these results have been qualified with “J” validation qualifiers to indicate that the individual results may not be fully representative of the sampled locations. However, in the absence of evidence of gross error (either in the field or in the laboratory) or loss of analytical precision, such results (either for the primary sample or the field duplicate) should not be classified as unusable, as they provide insight into the extent of variability of analytes of interest at the given sampling location and thus provide useful information to the project team. It is important to note that none of the sample results in question exceeded the most recent NMED SSLs. As discussed above, laboratory QC supports the validity of sample results; those results with %RPDs $> 20\%$ (six results in total) have been qualified but are not rejected and are otherwise usable. Table 1 (Tables, p. 1) and Section 2.3, paragraph 7 of the main document have been revised. Section 2.4.2, Field Duplicates (p. 5) of the QCSR (Appendix C) has been revised as a result of Comment 9. Table 1 (Tables, p. 1) and Section 2.3, paragraph 7 have been revised and Section 2.4.2, Field Duplicates (p. 5-6) of the QCSR (Appendix C) have been revised as a result of Comment 9.

The goal of 20% RPD for soil field duplicates is extremely stringent for soil samples, given their characteristic heterogeneity (and, in fact, a limit of $\leq 50\%$ RPD was given in the

IMWP). Of 12 analyte result comparisons, only one %RPD was greater than 50% (lead reported for the primary sample-field duplicate pair collected from location 24A903-EFR-D-SO), and only two comparisons were greater than the 20% RPD goal (lead reported for the primary sample-field duplicate pair collected from location 24A917-EFR-D-SO and arsenic from the primary sample-field duplicate pair collected from location 24A903-EFR-D-SO). Consistent with the original %RPD limit of 20%, these results have been qualified with “J” validation qualifiers to indicate that the individual results may not be fully representative of the sampled locations. However, in the absence of evidence of gross error (either in the field or in the laboratory) or loss of analytical precision, such results (either for the primary sample or the field duplicate) should not be classified as unusable, as they provide insight into the extent of variability of analytes of interest at the given sampling location and thus provide useful information to the project team. It is important to note that none of the sample results in question exceeded the most recent NMED SSLs. As discussed above, laboratory QC supports the validity of sample results; those results with %RPDs > 20% (six results in total) have been qualified but are not rejected and are otherwise usable.

Table 1 (Tables, p. 1) and Section 2.3, paragraph 7 have been revised and Section 2.4.2, Field Duplicates (p. 5-6) of the QCSR (Appendix C) have been revised as a result of Comment 9.

10. Appendix C, Confirmation Sample Data, p 11

Permittee Statement: “However, as noted in Section 2.4.2, the results for lead and mercury for the primary sample –field duplicate pair collected at location 24A903-EFR-D-SO yielded data for cumulative precision that exceeded project objectives given in the Work Plan

NMED Comment: The statement is not accurate. The work plan referenced in Appendix C states that project objectives for RPD% is <20%. In addition to sample 24A903-EFR-D-SO, samples 24A917-EFR-D-SO and 24A917-EFL-D-SO exceeded project objectives given in the Work Plan. Three of the four duplicate samples exceeded project objectives, yet no sample results were qualified and the issue was not discussed in the Report text. Correct the statement above, provide a discussion of the issue with the duplicates, and provide justification (other than professional judgment) for not qualifying and/or rejecting any data based on these results in the revised Report.

Army Response: Concur. The goal of 20% RPD for soil field duplicates is extremely stringent for soil samples, given their characteristic heterogeneity, and, in fact, a limit of 50% RPD for soil was specified in the IMWP. However, as noted above in Comment Response # 9, qualifiers may appropriately be applied to the results for primary sample-field duplicate pairs when goals for cumulative precision are exceeded and the reason for the qualification is clearly indicated. In this case, the detections of lead reported for samples 24A917-EFR-D-SO and 24A-EF-D-SO-DUP01 and detections of lead and arsenic reported for samples 24A903-EFR-D-SO and 24A-EF-D-SO-DUP03 have been qualified with “J” validation qualifiers to indicate that the results may not be fully representative of the sampled locations.

In the absence of evidence of gross error (either in the field or in the laboratory) or other evidence of loss of analytical precision as reflected by laboratory QC data, such results should not be classified as unusable, as they provide insight into the extent of variability of analytes of interest at the given sampling location and thus provide useful information to

the project team. All laboratory QC data associated with the primary sample-field duplicate pairs collected from location 24A903-EFR-D-SO and 24A917-EFR-D-SO support the conclusion that the data are usable and representative of site conditions. Affected results have been qualified, as described above, in response to comment 10 and revisions made to the report as specified below, so that the data user is fully informed as to issues of representativeness and soil heterogeneity

Table 1 (Tables, p. 1) and Section 2.3, paragraph 7 have been revised and Section 2.4.2, Field Duplicates (p. 5-6) of the QCSR (Appendix C) has been revised as a result of Comment 9.

If you have questions or require further information, please call me at 505-721-9770.

Sincerely,

For Mark Patterson
BRAC Environmental Coordinator

CF:

John Kieling, NMED HWB
Dave Cobrain, NMED HWB
Michiya Suzuki, NMED HWB
Chuck Hendrickson, U.S. EPA Region 6
Ian Thomas, BRACD
Steven Smith, USACE Fort Worth Dist.
Cheryl Montgomery, USACE ERDC
Saqib Khan, USACE Tulsa Dist.
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Media:

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Appendix B
Field Documentation

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Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 01/29/2018		FT. WINGATE DAILY SUXOS REPORT					
	CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL		
SWMU-1 NORTH		0	0	0	453		0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM,
							0800AM, USACE meeting
							1030AM, Completed vegetation removal south laydown area
SWMU-1 SOUTH							1045AM, Start prepping Igloo Block A area
							1125AM,
							1115PM,
							1150PM,
							1200PM,
							1300PM, Start loosening pipe elbow joints Parcel - 24 Igloo Block A
							1400PM,
							1415PM,
							1436PM,
Weather/Equipment Delays (Hrs.)	0						1500PM,
Days lost due to weather	0						1600PM, Completed loosening elbow joints
							1610PM,
PLANNED ACTIONS: Vegetation removal South laydown area. Prep Parcel-24 Igloo Block A							1645PM, End of day debrief
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							1700PM, All Zapata/ Bohunk personnel off-site
							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, David Brainard, Katie Stout
							BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer,
							Steven Johnson.
							ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 01/30/2018		FT. WINGATE DAILY SUXOS REPORT					
CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE	
							TODAY
SWMU-1 NORTH						0630AM, Day operations prep	
	0	0	0	453		0700AM, Morning safety/Ops brief.	
						0715AM, Start in-brief for Relando Howe	
						0800AM, SWPPP inspection, Relando Howe completed in-brief	
						0820AM, SWPPP inspection complete	
SWMU-1 SOUTH						0730AM, Start removing pipe elbows and plugging pipe with concrete in t	
						1125AM,	
						1115PM,	
						1150PM,	
						1200PM, Zapata conference call	
						1300PM,	
						1400PM,	
						1415PM,	
						1436PM,	
Weather/Equipment Delays (Hrs.)	0					1500PM,	
Days lost due to weather	0					1600PM, 9 pipe elbows removal and plugging left in Parcel 24	
						1640PM, 5 truck loads of brush from south laydown area off-site	
PLANNED ACTIONS: Plug and tape pipes after elbow removal Parcel 24 Igloo Block A.						1645PM, End of day debrief	
						1700PM, All Zapata/ Bohunk personnel off-site	
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							
						PERSONNEL ON-SITE	
						ZAPATA- Pete Hendricks, David Brainard, Katie Stout	
						BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer,	
						Steven Johnson, Delvin Saganitso Jr, Relando Howe	
						ERDC-	

No cutting of pipes until fit testing is complete.

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 01/31/2018		FT. WINGATE DAILY SUXOS REPORT					
	CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH		0	0	0	453		0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM, Begin cutting pipe in Parcel 24, Igloo Block A
							0800AM,
							0820AM,
PARCEL 21, SWMU-1 SOUTH							0730AM,
							1125AM,
							1115PM,
							1150PM,
							1200PM,
PARCEL 24, IGLOO BLOCK A							1300PM,
							1400PM,
							1415PM,
							1430PM, Saqib Khan progress tour of Parcel 21, SWMU-1
Weather/Equipment Delays (Hrs)	0						1500PM,
Days lost due to weather	0						1600PM,
							1640PM, Completed cutting 50 of 154 pipes
PLANNED ACTIONS: Pipe cutting Parcel 24, Igloo Block A							1645PM, End of day debrief
							1700PM, All Zapata/ Bohunk personnel off-site
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							
							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, David Brainard.
							BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer,
							Steven Johnson, Delvin Saganitso Jr, Relando Howe.
							ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 02/01/2018	FT. WINGATE DAILY SUXOS REPORT						
	CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH		0	0	0	453		0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM, Resume cutting pipe in Parcel 24, Igloo Block A
							0800AM,
							0820AM,
PARCEL 21, SWMU-1 SOUTH							0730AM,
							1030AM, Excavator delivered
							1115PM,
							1150PM,
							1200PM,
PARCEL 24, IGLOO BLOCK A							1300PM,
							1330PM,
							1415PM,
							1445PM, Received comformation sampling results and good to start moving 1000cy piles to 250cy North laydown area
Weather/Equipment Delays (Hrs)	0						1500PM, Surveyors scheduled for 6 Feb for north and south areas SWMU 1
Days lost due to weather	0						1530PM, 2 truck loads of brush from south laydown area off-site
							1640PM, Completed 130 of 154 pipe cutting Parcel 24 Igloo Block A
PLANNED ACTIONS: Resume pipe cutting Parcel 24, Igloo Block A							1645PM, End of day debrief
							1700PM, All Zapata/ Bohunk personnel off-site
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							
							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, David Brainard, Katie Stout.
							BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer,
							Steven Johnson, Delvin Saganitso Jr, Relando Howe.
							ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 02/02/2018		FT. WINGATE DAILY SUXOS REPORT					
	CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH		0	0	0	453		0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM, Resume cutting pipe in Parcel 24, Igloo Block A. Resume moving 1000cy piles to 250cy piles SWMU-1
							0800AM,
							0820AM,
PARCEL 21, SWMU-1 SOUTH							0730AM,
							1030AM,
							1115PM,
							1150PM,
							1200PM,
PARCEL 24, IGLOO BLOCK A							1300PM,
							1330PM, Completed 154 of 154 pipe cutting Parcel 24 Igloo Block A. Scrape taken to Kachina Rentals for disposal
							1415PM,
							1445PM,
Weather/Equipment Delays (Hrs)	0						1500PM, Surveyors scheduled for 7 Feb for north and south areas SWMU 1
Days lost due to weather	0						1530PM,
							1640PM, Completed 7ea 250cy piles. All 7 piles had waste characterization sampling done
PLANNED ACTIONS: Resume pipe cutting Parcel 24, Igloo Block A, Moving 1000cy piles to 250cy piles in north laydown area SWMU 1							1645PM, End of day debrief
							1700PM, All Zapata/ Bohunk personnel off-site
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							
							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, David Brainard, Katie Stout.
							BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer, Steven Johnson, Delvin Saganitso Jr, Relando Howe.
							ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 02/06/2018	FT. WINGATE DAILY SUXOS REPORT						DAILY NAARATIVE
PARCEL 21, SWMU-1 NORTH	CY EXCAVATED TODAY	WEEKLY SUB-TOTAL	PROJECT TOTAL	BORROW TODAY	BORROW TOTAL	COMMENTS	
		0	0	0	453		0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM, Resume moving 1000cy piles to 250cy piles SWMU-1. Start .25cy soil excavation Parcel 24, Igloo block A
							0800AM,
							0820AM,
PARCEL 21, SWMU-1 SOUTH							0730AM,
							1030AM,
							1115PM,
							1150PM,
							1200PM,
PARCEL 24, IGLOO BLOCK A							1300PM,
							1330PM, Completed sampling 5 piles of 250cy SMWU -1.
	7.5cy	7.5cy	7.5cy			Completed 31 of 84 soil excavation. 11 samples sent out.	1400PM, Hay bails delivered for SWPPP south laydown area SWMU-1. Water delivered to fill storage tank.
Weather/Equipment Delays (Hrs)	0						1445PM,
Days lost due to weather	0						1500PM,
							1530PM,
							1640PM, Completed moving 1000cy piles to North laydown area SWMU-1. 19 total 250cy piles.
PLANNED ACTIONS: Reume moving 1000cy piles to 250cy piles in north laydown area SWMU 1 . Start .25cy soil removal Parcel 24 Igloo Block A							1645PM, End of day debrief
							1700PM, All Zapata/ Bohunk personnel off-site
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							
							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, David Brainard, Katie Stout.
							BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer, Steven Johnson, Delvin Saganitso Jr, Relando Howe.
							ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 02/07/2018	FT. WINGATE DAILY SUXOS REPORT						
	CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
PARCEL 21, SWMU-1 NORTH	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL		
		0	0	0	453		0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM, Start constructing SWPPP on south laydown area SWM-1
							0800AM,
							0820AM,
PARCEL 21, SWMU-1 SOUTH							0900AM, Completed all sampling of 250cy North laydown area
				24cy	24cy	For covering road culverts	0915AM, Surveyors on-site for North and South areas SWMU-1
							1115PM, Surveys completed
							1150PM,
							1200PM,
PARCEL 24, IGLOO BLOCK A							1300PM,
							1330PM,
	3.25cy	10.75cy	10.75cy			completed 42 of 84 soil excavations.	1400PM, 20 soil excavation samples sent out and roll off sample sent also from Parcel 24 Igloo Block A
Weather/Equipment Delays (Hrs)	0						1445PM,
Days lost due to weather	0						1500PM, 2nd roll off delivered for Parcel 24 Igloo Block A
							1530PM, Continued soil excavation Parcel 24, Igloo Block A
							1640PM, Completed
PLANNED ACTIONS: SWPPP south side SWMU-1							1645PM, End of day debrief
							1700PM, All Zapata/ Bohunk personnel off-site
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							
							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, David Brainard, Katie Stout.
							BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer, Steven Johnson, Delvin Saganitso Jr, Relando Howe.
							ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 02/08/2018		FT. WINGATE DAILY SUXOS REPORT					
	CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
PARCEL 21, SWMU-1 NORTH	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL		
	300cy	300cy	300cy	0	453	North West excavation	0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM, Continue constructing SWPPP on south laydown area SWM-1
							0800AM,
							0820AM,
PARCEL 21, SWMU-1 SOUTH							0900AM,
							0915AM,
				68cy	92cy	For covering road culverts	1115PM,
							1150PM,
							1200PM,
PARCEL 24, IGLOO BLOCK A							1300PM,
							1340PM, Water truck on-site to fill storage tank
	4.75cy	15.5cy	15.5cy			completed 64 of 84 soil excavations.	1400PM,
							1445PM,
Weather/Equipment Delays (Hrs)	0						1500PM, Start North west excavation SWMU-1
Days lost due to weather	0						1530PM,
							1640PM, Sampled 13 soil excavations at Parcels 24 Igloo Block A
PLANNED ACTIONS: SWPPP south side SWMU-1, Soil excavation Parcel 24 Igloo Block A							1645PM, End of day debrief
							1700PM, All Zapata/ Bohunk personnel off-site
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							
							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, David Brainard, Katie Stout.
							BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer, Steven Johnson, Delvin Saganitso Jr, Relando Howe.
							ERDC- Anothny Bednar

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 02/15/2018		FT. WINGATE DAILY SUXOS REPORT					
	CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH	0	1875cy	4125cy	0	453cy		0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM,
							0730AM,
							0800AM, Sampled 8 soil excavations at Parcel 24 Igloo Block A.
							0900AM,
PARCEL 21, SWMU-1 SOUTH				0	200cy	For covering culverts/ SWPPP	0915AM,
							1000PM, Sampled 2nd roll off Parcel 24 Igloo Block A
							1150PM,
							1200PM, Jeff Schwalm, Emma Baghel off-site.
PARCEL 24, IGLOO BLOCK A							1230PM,
	0	15.5cy	15.5cy			completed 64 of 84 soil excavations.	1340PM,
							1400PM,
							1430PM, Pete Hendricks off-site
Weather/Equipment Delays (Hrs)	0						1500PM,
Days lost due to weather	0						1530PM,
							1600PM,
PLANNED ACTIONS: Sampling North west excavation piles							1640PM,
							1645PM,
							1700PM,
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							
Received an e-mail from Mr. Khan about the SWPP. Contacted Kevin Shafer and discussed how the SWPP needs to be repaired to be in conformance with regulations.							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, Jeff Schwalm, Emma Baghel
							BOHUNK EXCAVATION-
							ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 02/16/2018	FT. WINGATE DAILY SUXOS REPORT						
	CY EXCAVATED	WEEKLY	PROJECT	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH	0	1875cy	4125cy	0	453cy		0630AM, Day operations prep
							0700AM, Morning safety/Ops brief.
							0715AM,
							0730AM,
							0815AM, Roy Manygoats, Steven Johnson on-site/ Safety brief
PARCEL 21, SWMU-1 SOUTH							0830AM, Start SWPPP correction IAW New Mexico Document National Pollutant Discharge Elimination Systems Manual Storm Water Management Guidelines for Construction and Industrial Activities Revision 2 August 2012
				0	200cy	For covering culverts/ SWPPP	0930AM, Delvin Saganitso Jr, on-site/ Safety brief
							1000PM,
							1150PM,
							1200PM, Kevin Safer on-site/ Safety brief
PARCEL 24, IGLOO BLOCK A							1230PM, Re-sample both roll offs Parcel 24 Igloo Block A
							1340PM,
	0	15.5cy	15.5cy			completed 64 of 84 soil excavations.	1400PM,
							1430PM,
Weather/Equipment Delays (Hrs)	0						1500PM,
Days lost due to weather	0						1530PM,
							1600PM,
PLANNED ACTIONS: Sampling North west excavation piles							1640PM,
							1645PM, End of day debrief
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE							1700PM, All personnel off-site
							PERSONNEL ON-SITE
							ZAPATA- Pete Hendricks, David Brainard, Emma Baghel
							BOHUNK EXCAVATION- Roy Manygoats, Kevin Shaffer,
							Steven Johnson, Delvin Saganitso Jr.,
							ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 03/05/2018	FT. WINGATE DAILY SUXOS REPORT								
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									0600AM, Day operations prep
North west excavation	0	0	4125cy	1603.79 Tons	7608.94 Tons	0	453cy		0615AM, Morning safety/Ops brief. Equipment checkout
South east excavation	793cy	793cy	2422cy						0630AM, Resume T&D removal piles 20-27 (25 needs re-sample)
									0645AM, Continue South east corner excavation in North leeching bed
									0800AM,
PARCEL 21, SWMU-1 SOUTH									0830AM,
									0930AM,
						0	200cy	For covering culverts/ SWPPP	1000PM, Re-sample roll off #2 Parcel 24 Igloo Block A
									1040PM, Water delivered for storage tank
									1050PM, Start gravel delivery for south leeching bed laydown area.
PARCEL 24, IGLOO BLOCK A									1200PM,
	0	0	15.5cy					64 of 84 removal completed	1230PM,
									1345PM,
Weather/Equipment Delays (Hrs)	0								1400PM, Completed sampling piles SE# 5-8 and NW# 25 pile re-sample
Days lost due to weather	0								1430PM, Water delivered for storage tank
									1500PM,
									1530PM, 586.97 tons of gravel
PLANNED ACTIONS: T&D soil North leeching bed, Excavation of south east corner of north leeching bed									1600PM, 72 total T&D trucks
									1640PM,
									1645PM, End of day debrief
									1700PM, All personnel off-site
									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard, Emily McRee, Kayla Quinter
									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson
									Delvin Saganitso Jr, Relando Howe, Kevin Shafer
									ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 03/07/2018									
FT. WINGATE DAILY SUXOS REPORT									
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									0600AM, Morning safety/Ops brief. Equipment checkout
North west excavation	0	0	4125cy	1250.58 Tons	8859.52 Tons	0	453cy		0620AM, Continue South east corner excavation in North leeching bed
South east excavation	1212cy	3238cy	4867cy	0	0	0	0		0630AM, Resume T&D North leeching bed soils piles 28-36
									0800AM,
									0830AM,
									0930AM,
PARCEL 21, SWMU-1 SOUTH									1000PM,
						0	200cy	For covering culverts/ SWPPP	1040PM,
									1050PM,
									1200PM, Water delivery or storage tanks
									1230PM,
PARCEL 24, IGLOO BLOCK A									1345PM,
	0	0	15.5cy	6.53 Tons				Roll off #1, Manifest # 0362	1400PM, Sampled piles SE # 13-16
									1430PM, 54 Total T&D trucks SWMU 1 North leeching bed, roll off #1 parcel 24. Total manifest 55
Weather/Equipment Delays (Hrs)	0								11545PM, End of day debrief
Days lost due to weather	0								1600PM, All personnel off-site
PLANNED ACTIONS: Excavation of south east corner of north leeching bed, T&D soil removal North leeching bed									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard, Emily McRee, Kayla Quinter
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson
									Delvin Saganitso Jr, Relando Howe, Kevin Shafer
									ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 03/12/2018									
FT. WINGATE DAILY SUXOS REPORT									
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									
North west excavation	0	0	4125cy	0	9918.38 Tons	0	453cy	Completed all NW piles # 1-36	0630AM, Day operations planning 0700AM, Morning safety/Ops brief. Equipment checkout
South east excavation	0	0	7435cy	0	0	0	0		0715AM, No work in SWMU-1 due to muddy conditions. Will continue with Parcel 24 Igloo Block A remaining 20 excavations of .25cy each. 0730AM,
									0800AM, USACE meeting
PARCEL 21, SWMU-1 SOUTH									0830AM, 0930AM,
						0	200cy	For covering culverts/ SWPPP	1000PM, SWPPP Inspection North Leeching bed SWMU-1
									1040PM, Completed remaining Igloo excavations.
									1050PM,
PARCEL 24, IGLOO BLOCK A									1200PM, 1230PM,
	5cy	5cy	20.5cy	0	6.53 Tons			Completed 84 of 84 excavation	1345PM,
									1400PM, Finished sampling remaining Igloo's Parcel 24 & roll off #3
Weather/Equipment Delays (Hrs)	0								1430PM,
Days lost due to weather	0								1500PM, End of day debrief, all personnel off-site
PLANNED ACTIONS: Parcel 24 Igloo Block A									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard, Emily McRee, Kayla Quinter
									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson
									Delvin Saganitso Jr, Relando Howe
									ERDC-

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 03/27/2018									
FT. WINGATE DAILY SUXOS REPORT									
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
PARCEL 21, SWMU-1 NORTH	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
North west excavation	0	0	4125cy	0	9918.38 Tons	0	453cy	Completed all NW piles # 1-36	0600AM, Day operations planning 0630AM, Morning safety/Ops brief. Equipment checkout
South east excavation	0	216cy	13628cy	314.06Tons	7264.2 Tons	0	0		0700AM, Continue South leeching bed 1' excavation. Continue T&D soil removal piles SE# 23-37. Pile# 30 needs re-sample 0730AM, 0800AM, 0830AM,
PARCEL 21, SWMU-1 SOUTH 1' excavation						0	200cy	For covering culverts/ SWPPP	0930AM, No more T&D trucks due to weather. Total 14 trucks 1000PM, Sampled piles SE# 46, 47, re-sample #30 1040PM, ERDC screen sampled south east excavation and 1000cy yard 1' excavation in south leeching bed 1200PM, Zapata confrence call, Bohunk personnel off-site due to weather.
PARCEL 24, IGLOO BLOCK A									1230PM, 1300PM, ERDC sample results for 1000cy south leeching bed under 1%.
	0	5cy	20.5cy	0	6.53 Tons			Completed 84 of 84 excavation	1330PM, All personnel off-site 1630PM, 1645PM, 1700PM,
Weather/Equipment Delays (Hrs.)	0								
Days lost due to weather	0								
PLANNED ACTIONS: Continue 1' excavation South leeching bed, T&D soil removal piles SE# 23-37. Pile #30 needs re-sample									
									PERSONNEL ON-SITE
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE									ZAPATA- Pete Hendricks, David Brainard, Davielene Bahe, Katie Stout
									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson Delvin Saganitso Jr, Kevin Shafer, Dale McClain ERDC- Andrew Trainor, Otis Dickey, Daisy Pate

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 03/28/2018									
FT. WINGATE DAILY SUXOS REPORT									
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									0600AM, Day operations planning
North west excavation	0	0	4125cy	0	9918.38 Tons	0	453cy	Completed all NW piles # 1-36	0630AM, Morning safety/Ops brief. Equipment checkout
South east excavation	0	216cy	13628cy	662.46 Tons	7926.66 Tons	0	0		0700AM,
									0730AM,
									0800AM,
PARCEL 21, SWMU-1 SOUTH									0830AM,
						0	200cy	For covering culverts/ SWPPP	0930AM, Continue T&D soil removal piles SE # 23-37
									1000PM, Roll off #1 pick up parcel 24
									1100PM, ERDC sample south east excavation. Katie Stout used trimble to mark sampling locations.
									1200PM,
PARCEL 24, IGLOO BLOCK A									1230PM,
									1430PM, Fuel delivery for storage tanks
	0	0cy	20.5cy	15.56 Tons	22.09 Tons			Roll off # 1-2 picked up and returned	1600PM, Roll off #2 pick up parcel 24
Weather/Equipment Delays (Hrs.)	0								1630PM, 29 Total trucks
Days lost due to weather	0								1645PM, End of day debrief
									1700PM, All personnel off-site
PLANNED ACTIONS: T&D soil removal piles SE# 23-37.									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard, Davielene Bahe, Katie Stout
INSTRUCTIA23ONS RECEIVED FROM CUSTOMER REPRESENTATIVE									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson
									Delvin Saganitso Jr, Dale McClain
									ERDC- Andrew Trainor, Otis Dickey, Daisy Pate

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 03/29/2018									
FT. WINGATE DAILY SUXOS REPORT									
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									0600AM, Day operations planning
North west excavation	0	0	4125cy	0	9918.38 Tons	0	453cy	Completed all NW piles # 1-36	0630AM, Morning safety/Ops brief. Equipment checkout
South east excavation	0	216cy	13628cy	1125.03 Tons	9051.69 Tons	0	0		0700AM, Resume T&D soil removal piles SE # 23-40
									0730AM,
									0800AM,
PARCEL 21, SWMU-1 SOUTH									0830AM,
						0	200cy	For covering culverts/ SWPPP	0930AM, Start exceedance removal Parcel 24 Igloo Block A
									1000PM, Water delivery for storage tank
									1100PM,
									1200PM,
PARCEL 24, IGLOO BLOCK A									1230PM, Water delivery for storage tank
									1430PM,
	8.5cy	8.5cy	29cy	15.56 Tons	22.09 Tons			Completed all 17 exceedance removal	1600PM,
									1630PM, 50 Total trucks. Completed all 17 exceedance removal and sampling including roll off # 3 in Parcel 24.
Weather/Equipment Delays (Hrs.)	0								1645PM, End of day debrief
Days lost due to weather	0								1700PM, All personnel off-site
PLANNED ACTIONS: T&D soil removal piles SE# 23-40. Exceedance removal Parcel 24 Igloo Block A									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard, Davielene Bahe, Katie Stout
INSTRUCTIA23ONS RECEIVED FROM CUSTOMER REPRESENTATIVE									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson Delvin Saganitso Jr, Dale McClain, Kevin Shafer

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 04/11/2018		FT. WINGATE DAILY SUXOS REPORT							
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									0600AM, Day operations planning
North west excavation	0	0	4125cy	0	9918.38 Tons	540cy	1505cy		0630AM, Morning safety/Ops brief. Equipment checkout
South east excavation	0	0	13862cy	66.87 Tons	15440.98 Tons	0	0	Still missing manifest #1132. Other three weights added to total	0700AM, Continue moving backfill soil from borrow site to north west excavation and will be stockpiled until backfill is approved
									0730AM, Water delivery for storage tank
									0800AM,
PARCEL 21, SWMU-1 SOUTH									0830AM,
South Leeching Bed						0	200cy		0900AM,
Building 503 excavation	0	0	158cy					Completed and sampled	0930AM, Water delivery for storage tank
Building 504 excavation	0	0	308cy					Completed and sampled	1000AM,
									1200AM,
PARCEL 24, IGLOO BLOCK A									1300PM,
	1.5cy	1.5cy	30.5cy	15.56 Tons	22.09 Tons				1430PM, Water delivery for storage tank
									1530PM,
									1600PM,
Weather/Equipment Delays (Hrs.)	0								1645PM, End of day debrief
Days lost due to weather	0								1700PM, All personnel off-site
PLANNED ACTIONS: Stockpile backfill soil at north west excavation.									PERSONNEL ON-SITE
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE									ZAPATA- Pete Hendricks, David Brainard
									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson
									Dale McClain, Delvin Saganitso Jr, Kevin Shafer

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 04/12/2018		FT. WINGATE DAILY SUXOS REPORT							
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									0600AM, Day operations planning
North west excavation	0	0	4125cy	0	9918.38 Tons	384cy	1889cy		0630AM, Morning safety/Ops brief. Equipment checkout
South east excavation	0	0	13862cy	0	15440.98 Tons	0	0	Still missing manifest #1132. Other three weights added to total	0700AM, Continue moving backfill soil from borrow site to north west excavation and will be stockpiled until backfill is approved
									0730AM,
									0800AM,
									0830AM,
PARCEL 21, SWMU-1 SOUTH									0900AM, Hendricks re-sampled Igloo #955
South Leeching Bed						0	200cy		0930AM,
Building 503 excavation	0	0	158cy					Completed and sampled	1000AM,
Building 504 excavation	0	0	308cy					Completed and sampled	1200AM,
									1300PM,
PARCEL 24, IGLOO BLOCK A									1430PM, Hendricks off-site. Sample shipped
	0	0	29cy	15.56 Tons	22.09 Tons				1530PM,
									1600PM,
Weather/Equipment Delays (Hrs.)	0								1645PM, End of day debrief
Days lost due to weather	0								1700PM, All personnel off-site
PLANNED ACTIONS: Stockpile backfill soil at north west excavation.									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson
									Dale McClain, Delvin Saganitso Jr, Kevin Shafer

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 04/26/2018		FT. WINGATE DAILY SUXOS REPORT							
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									
North west excavation	0	0	4125cy	0	9918.38 Tons	264cy	4231cy		0600AM, Day operations planning
South east excavation	0	0	13862cy	0	15464.05 Tons	0	0		0630AM, Morning safety/Ops brief. Equipment checkout
									0700AM, Continue stockpiling borrow soil at northwest excavation
									0730AM,
									0800AM,
PARCEL 21, SWMU-1 SOUTH									0840AM,
South Leeching Bed						0	200cy		0900AM,
Building 503 excavation	0	0	158cy					Completed and sampled	0930AM,
Building 504 excavation	0	0	308cy					Completed and sampled	1000AM, Water delivery for storage tank
									1100AM,
PARCEL 24, IGLOO BLOCK A									1200PM,
	0	0	30.5cy	0	30.6 Tons				1300PM, Water delivery for storage tank
									1445PM, End of day debrief
Weather/Equipment Delays (Hrs.)	0								1600PM, All personnel off-site
Days lost due to weather	0								1645PM,
									1700PM,
PLANNED ACTIONS: Stockpile borrow soil north west excavation									PERSONNEL ON-SITE
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE									ZAPATA- Pete Hendricks, David Brainard
									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson
									Dale McClain

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 05/08/2018		FT. WINGATE DAILY SUKOS REPORT							
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									
North west excavation	0	0	4125cy	0	9918.38 Tons	444cy	6571cy		0600AM, Day operations planning
South east excavation	0	0	13862cy	0	15464.05 Tons	0	0		0630AM, Morning safety/Ops brief. Equipment checkout
									0700AM, Continue stockpiling borrow soil at northwest excavation
									0730AM, Spread north leeching bed piles for inspection
									0800AM, Water delivery for storage tank
									0830AM, Sample roll off parcel 24
PARCEL 21, SWMU-1 SOUTH									0900AM,
South Leeching Bed						0	200cy		0930AM, Set up IVS line for instrument checkout
Building 503 excavation	0	0	158cy					Completed and sampled	1000AM, Start 15 re-sample off south east excavation
Building 504 excavation	0	0	308cy					Completed and sampled	1100AM, Roy Manygoats, Steven Johnson off-site
									1130PM, Re-sample samll excavation south leeching bed
PARCEL 24, IGLOO BLOCK A									1200PM, Zapata conference call
	0	0	30.5cy	0	30.6 Tons				1300PM, Katie Stout off-site to ship samples
									1445PM,
Weather/Equipment Delays (Hrs.)	0								1500PM,
Days lost due to weather	0								1645PM, End of day debrief
									1700PM, All personnel off-site
PLANNED ACTIONS: Stockpile borrow soil north west excavation									
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE									
									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard, Katie Stout
									BOHUNK EXCAVATION- Roy Manygoats, Steven Johnson
									Dale McClain, Delvin Saganitso Jr, Kevin Shafer

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 05/24/2018									
FT. WINGATE DAILY SUXOS REPORT									
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									0530AM, Day operations planning
North west excavation	0	0	4125cy	0	9918.38 Tons	0	7951cy	Waiting for backfill	0600AM, Morning safety/Ops brief. Equipment checkout
South east excavation	0	0	13862cy	188.68 Tons	16307.19 Tons	0	0	Waiting for sample results/ backfill	0630AM, Resume excavation on south leeching bed using new procedures. Resume T&D of north leeching bed south east excavation. Sample piles # 11,12/17,18 south leeching bed
									0730AM,
									0800AM, Water delivery for storage tank
PARCEL 21, SWMU-1 SOUTH									0845AM,
South Leeching Bed	1062bcy	4637bcy	4637bcy			0	200cy		0900AM, Pick up roll off #5 Parcel 24
Building 503 excavation	0	0	158cy					Completed and sampled	0945AM, USACE sweep
Building 504 excavation	0	0	308cy					Completed and sampled	1030AM,
									1100AM, USACE sweep
PARCEL 24, IGLOO BLOCK A									1130PM,
									1345PM,
	0	0	30.5cy	1.98 Tons	32.58 Tons			Roll off #5 pick up. Parcel 24 completed. Ready for report	1400PM, USACE sweep
Weather/Equipment Delays (Hrs.)	0								1530PM, Total T&D trucks 9ea
Days lost due to weather	0								1600PM, USACE sweep
									1625PM,
									1645PM, End of day debrief
PLANNED ACTIONS: Resume excavating south leeching bed. T&D remaining soils from north leeching bed. Sample south leeching bed stockpiles									1700PM, All personnel off-site
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE									
									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard, Kayla Quinter
									BOHUNK EXCAVATION- Dale McClain, Delvin Saganitso Jr
									Kevin Shafer, Steven Johnson, Roy Manygoats

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

DATE: 05/25/2018									
FT. WINGATE DAILY SUXOS REPORT									
	CY EXCAVATED	WEEKLY	PROJECT	T&D SOIL	T&D SOIL	BORROW	BORROW	COMMENTS	DAILY NAARATIVE
	TODAY	SUB-TOTAL	TOTAL	TODAY	TOTAL	TODAY	TOTAL		
PARCEL 21, SWMU-1 NORTH									0530AM, Day operations planning
North west excavation	0	0	4125cy	0	9918.38 Tons	0	7951cy	Waiting for backfill	0600AM, Morning safety/Ops brief. Equipment checkout
South east excavation	0	0	13862cy	282.77	16589.96 Tons	0	0	Waiting for sample results/ backfill	0630AM, Resume excavation on south leeching bed using new procedures. Resume T&D of north leeching bed south east excavation. Sample piles # 19-22 south leeching bed
									0730AM,
									0800AM,
PARCEL 21, SWMU-1 SOUTH									0845AM,
South Leeching Bed	498bcy	5135bcy	5135bcy			0	200cy		0900AM,
Building 503 excavation	0	0	158cy					Completed and sampled	1000AM, USACE sweep
Building 504 excavation	0	0	308cy					Completed and sampled	1030AM,
									1100AM, Total T&D trucks 12ea
									1145PM, End of day debrief
PARCEL 24, IGLOO BLOCK A									1200PM, All personnel off-site
	0	0	30.5cy	1.98 Tons	32.58 Tons			Roll off #5 pick up. Parcel 24 completed. Ready for report	1400PM,
									1530PM,
Weather/Equipment Delays (Hrs.)	0								1600PM,
Days lost due to weather	0								1625PM,
									1645PM,
PLANNED ACTIONS: Resume excavating south leeching bed. T&D remaining soils from north leeching bed. Sample south leeching bed stockpiles									1700PM,
INSTRUCTIONS RECEIVED FROM CUSTOMER REPRESENTATIVE									
									PERSONNEL ON-SITE
									ZAPATA- Pete Hendricks, David Brainard, Kayla Quinter
									BOHUNK EXCAVATION- Dale McClain, Delvin Saganitso Jr
									Kevin Shafer, Steven Johnson, Roy Manygoats

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report

Week Ending: 2/2/2018

Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHO/UXOSO - David Brainard Environmental Scientist - Katie Stout
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Relando Howe
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting. Began preparation of Igloo Block A area - completed loosening of pipe elbow joints.	
	Tuesday - Removal of pipe elbows and plugging of pipes in Igloo Block A.	
	Wednesday - Completed cutting 50 of 154 pipes in Igloo Block A.	
	Thursday - Completed cutting 130 of 154 pipes in Igloo Block A.	
	Friday - Completed pipe cutting in Igloo Block A (154 pipes). Scrap taken to Kachina Rentals for disposal.	
Totals	154 of 154 pipes cut in Igloo Block A.	
Sampling	None.	
QA/QC	None.	
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.	
Issues/ Delays	None.	
Meetings and misc. events	01/29/2018 0800 - Weekly all-hands meeting 01/30/2018 1200 - Weekly field status call.	
Next week	None.	

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report

Week Ending: 2/9/2018

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 2/9/2018
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSH0/UXOSO - David Brainard Environmental Scientist - Katie Stout
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Relando Howe
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting. Rolloff delivered for Parcel 24 soil.	
	Tuesday - Excavation of soil beneath removed drains (0.25CY each) - 31 of 84 soil removals. Confirmation samples collected from 11 locations.	
	Wednesday - Collected 20 confirmation samples from beneath igloo drains and waste characterization sample from rolloff. Continued excavation from beneath igloo drains - 42 of 84 complete.	
	Thursday - Collected 13 confirmation samples from beneath igloo drains.	
	Friday - None.	
Totals	154 of 154 pipes cut in Igloo Block A. 64 of 84 soil excavations completed in Igloo Block A - 15.5CY.	
Sampling	31 confirmation samples collected from beneath igloo drains. Waste characterization sample collected from one roll off.	
QA/QC	None.	
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.	
Issues/ Delays	None.	
Meetings and misc. events	02/05/18 0800 - Weekly all-hands meeting 02/06/2018 1200 - Weekly field status call.	
Next week	Continue excavation from beneath igloo drains. Collection of confirmation samples and waste characterization samples.	

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 2/16/2018
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSH0/LUXOSO - David Brainard/Jeff Schwalm Environmental Scientist - Emma Baghel
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Relando Howe
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.	
	Tuesday - None.	
	Wednesday - None.	
	Thursday - Collected 8 confirmation samples from beneath igloo drains.	
	Friday - Waste characterization samples collected from rolloffs.	
Totals	154 of 154 pipes cut in Igloo Block A. 64 of 84 soil excavations completed in Igloo Block A - 15.5CY total.	
Sampling	8 confirmation samples collected from beneath igloo drains. Waste characterization sample collected from two roll offs.	
QA/QC	None.	
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.	
Issues/Delays	None.	
Meetings and misc. events	02/12/2018 0800 - Weekly all-hands meeting 02/13/2018 1200 - Weekly field status call.	
Next week	Continue excavation from beneath igloo drains. Collection of confirmation samples and waste characterization samples.	

Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed (CY)	Backfill Used (CY)
Previously	154	15.5	57	1	0	0
2/12/2018	0	0	0	0	0	0
2/13/2018	0	0	0	0	0	0
2/14/2018	0	0	0	0	0	0
2/15/2018	0	0	8	0	0	0
2/16/2018	0	0	0	2	0	0
TOTAL	154	15.5	65	3	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending:	2/23/2018
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Jeff Schwalm SSHQ/UXOSO - David Brainard Environmental Scientist - Emma Baghel	
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Relando Howe	
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.		
	Tuesday - None.		
	Wednesday - None.		
	Thursday - None.		
	Friday - None.		
Totals	154 of 154 pipes cut in Igloo Block A. 64 of 84 soil excavations completed in Igloo Block A - 15.5CY total.		
Sampling	None.		
QA/QC	None.		
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.		
Issues/Delays	None.		
Meetings and misc. events	02/19/18 0800 - Weekly all-hands meeting 02/20/2018 1200 - Weekly field status call.		
Next week	Continue excavation from beneath igloo drains. Collection of confirmation samples.		

Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (CY)	Disposed Hazardous (CY)	Backfill Used (CY)
Previously	154	15.5	65	3	0	0	0
2/19/2018	0	0	0	0	0	0	0
2/20/2018	0	0	0	0	0	0	0
2/21/2018	0	0	0	0	0	0	0
2/22/2018	0	0	0	0	0	0	0
2/23/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	0	0	0	0
GRAND TOTAL	154	15.5	65	3	0	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 3/2/2018
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Jeff Schwalm SSHQ/UXOSO - David Brainard Environmental Scientist - Emma Baghel
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Relando Howe
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.	
	Tuesday - None.	
	Wednesday - None.	
	Thursday - None.	
	Friday - None.	
Totals	154 of 154 pipes cut in Igloo Block A. 64 of 84 soil excavations completed in Igloo Block A - 15.5CY total.	
Sampling	None.	
QA/QC	None.	
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.	
Issues/ Delays	None.	
Meetings and misc. events	02/19/18 0800 - Weekly all-hands meeting 02/20/2018 1200 - Weekly field status call.	
Next week	Report rolloff waste characterization results and dispose at landfill upon approval.	

Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (CY)	Disposed Hazardous (CY)	Backfill Used (CY)
Previously	154	15.5	65	3	0	0	0
2/19/2018	0	0	0	0	0	0	0
2/20/2018	0	0	0	0	0	0	0
2/21/2018	0	0	0	0	0	0	0
2/22/2018	0	0	0	0	0	0	0
2/23/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	0	0	0	0
GRAND TOTAL	154	15.5	65	3	0	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 3/9/2018					
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHO/UXOSO - David Brainard Environmental Scientist - Kayla Quinter Project Manager - Emily McRee					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Relando Howe					
Activities	Monday - Re-sampled rolloff 2 for paint filter analysis (failed initial test).						
	Tuesday - ZAPATA personnel attended 0800 all-hands meeting.						
	Wednesday - T&D of rolloff 1 from Parcel 24 (6.53 tons).						
	Thursday - None.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 64 of 84 soil excavations completed in Igloo Block A - 15.5CY total.						
Sampling	One sample collected from rolloff 2 for paint filter analysis (failed initial test).						
QA/QC	None.						
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.						
Issues/ Delays	None.						
Meetings and misc. events	3/6/18 0800 - Weekly all-hands meeting 3/6/18 1200 - Weekly field status call.						
Next week	Continue excavation from beneath igloo drains. Collection of confirmation samples.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	15.5	64	3	0	0	0
3/5/2018	0	0	0	1	0	0	0
3/6/2018	0	0	0	0	0	0	0
3/7/2018	0	0	0	0	6.53	0	0
3/8/2018	0	0	0	0	0	0	0
3/9/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	1	6.53	0	0
GRAND TOTAL	154	15.5	64	4	6.53	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 3/16/2018					
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHQ/UXOSO - David Brainard Environmental Scientist - Kayla Quinter					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Relando Howe					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting. Completed remaining igloo excavations (20). Sampled igloo excavations (20) and rolloff 3 generated from igloo excavations.						
	Tuesday - None.						
	Wednesday - None.						
	Thursday - None.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A - 20.5CY total. Disposal - 6.53 tons disposed at Red Rock Landfill (nonhaz)						
Sampling	20 confirmation samples collected from igloo excavations. One waste characterization sample collected from rolloff 3.						
QA/QC	Four QC duplicates collected.						
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.						
Issues/ Delays	None.						
Meetings and misc. events	3/12/18 0800 - Weekly all-hands meeting 3/13/18 1200 - Weekly field status call.						
Next week	Excavation and additional confirmation sampling from buildings where confirmation samples indicate exceedances of lead, arsenic, or mercury.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	15.5	64	4	6.53	0	0
3/5/2018	0	5	20	1	0	0	0
3/6/2018	0	0	0	0	0	0	0
3/7/2018	0	0	0	0	0	0	0
3/8/2018	0	0	0	0	0	0	0
3/9/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	5	20	1	0	0	0
GRAND TOTAL	154	20.5	84	5	6.53	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 3/23/2018					
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHQ/UXOSO - David Brainard Environmental Scientist - Kayla Quinter					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson,					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting. None.						
	Tuesday - None.						
	Wednesday - None.						
	Thursday - None.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A - 20.5CY total. Disposal - 6.53 tons disposed at Red Rock Landfill (nonhaz)						
Sampling	None.						
QA/QC	None.						
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.						
Issues/ Delays	None.						
Meetings and misc. events	3/19/18 0800 - Weekly all-hands meeting 3/20/18 1200 - Weekly field status call.						
Next week	Excavation and additional confirmation sampling from buildings where confirmation samples indicate exceedances of lead, arsenic, or mercury.						
Summary Data							
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	20.5	84	5	6.53	0	0
3/5/2018	0	0	0	0	0	0	0
3/6/2018	0	0	0	0	0	0	0
3/7/2018	0	0	0	0	0	0	0
3/8/2018	0	0	0	0	0	0	0
3/9/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	0	0	0	0
GRAND TOTAL	154	20.5	84	5	6.53	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 3/30/2018					
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHO/UXOSO - David Brainard Environmental Scientist - Katie Stout Gate Guard - Davielene Bahe					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Dale McClain					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.						
	Tuesday - None.						
	Wednesday - Disposal of rollofs 2 and 3 from Parcel 24 - 15.5CY.						
	Thursday - Excavation of 17 igloos with lead/arsenic exceedances - 8.5CY. Waste characterization from rolloff 5.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A - 20.5CY total. Disposal - 22.09 tons disposed at Red Rock Landfill (nonhaz) Sampling - confirmation samples collected from 84/84 excavations. Re-sample of 17 after additional excavation.						
Sampling	Re-sample of 17 igloo drain pipes with exceedances of original confirmation samples. Waste characterization sample collected from rolloff 3.						
QA/QC	Two QC duplicate samples collected.						
Safety Inspections	Daily safety inspections performed for excavation, heavy equipment operations, PPE, safe work practices, site control, first aid equipment, fire fighting equipment, and SWPPP. All results satisfactory.						
Issues/Delays	None.						
Meetings and misc. events	3/26/18 0800 - Weekly all-hands meeting 3/27/18 1200 - Weekly field status call.						
Next week	No field work planned. Awaiting confirmation and waste characterization results.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	20.5	84	5	6.53	0	0
3/26/2018	0	0	0	0	0	0	0
3/27/2018	0	0	0	0	0	0	0
3/28/2018	0	8.5	17	1	15.56	0	0
3/29/2018	0	0	0	0	0	0	0
3/30/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	8.5	17	1	15.56	0	0
GRAND TOTAL	154	29	101	6	22.09	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 4/6/2018					
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSH0/UXOSO - David Brainard Environmental Scientist - Katie Stout Gate Guard - Davielene Bahe					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Dale McClain					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.						
	Tuesday - None.						
	Wednesday - None.						
	Thursday - None.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A. Additional excavation of 17 locations - 29CY total. Disposal - Three rolloffs (22.09 tons) disposed at Red Rock Landfill (nonhaz). Sampling - confirmation samples collected from 84/84 excavations. Re-sample of 17 after additional excavation.						
Sampling	None.						
QA/QC	None.						
Safety Inspections	None.						
Issues/ Delays	None.						
Meetings and misc. events	04/02/18 0800 - Weekly all-hands meeting 04/03/18 1200 - Weekly field status call.						
Next week	No field work planned. Awaiting confirmation and waste characterization results.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	29	101	6	22.09	0	0
4/2/2018	0	0	0	0	0	0	0
4/3/2018	0	0	0	0	0	0	0
4/4/2018	0	0	0	0	0	0	0
4/5/2018	0	0	0	0	0	0	0
4/6/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	0	0	0	0
GRAND TOTAL	154	29	101	6	22.09	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 4/13/2018					
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHO/UXOSO - David Brainard Environmental Scientist - Katie Stout Gate Guard - Davieleene Bahe					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Dale McClain					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.						
	Tuesday - None.						
	Wednesday - Excavated an additional 1.5CY from igloo with confirmation sample exceedance Building 955 (left side).						
	Thursday - Collected confirmation sample from Building 955 re-excavation.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A. Additional excavation of 17 locations - 30.5CY total. Disposal - Three rollofs (22.09 tons) disposed at Red Rock Landfill (nonhaz). Sampling - confirmation samples collected from 84/84 excavations. Re-sample of 18 after additional excavation.						
Sampling	None.						
QA/QC	None.						
Safety Inspections	None.						
Issues/ Delays	None.						
Meetings and misc. events	04/09/18 0800 - Weekly all-hands meeting 04/10/18 1200 - Weekly field status call.						
Next week	No field work planned. Awaiting confirmation and waste characterization results.						
Summary Data							
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	29	101	6	22.09	0	0
4/9/2018	0	0	0	0	0	0	0
4/10/2018	0	0	0	0	0	0	0
4/11/2018	0	1.5	0	0	0	0	0
4/12/2018	0	0	1	0	0	0	0
4/13/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	1.5	1	0	0	0	0
GRAND TOTAL	154	30.5	102	6	22.09	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report			Week Ending:	4/20/2018			
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks Gate Guard - Davielene Bahe					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Delvin Sagainsto, Roy Manygoats, Steven Johnson, Dale McClain					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.						
	Tuesday - None.						
	Wednesday - None.						
	Thursday - None.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A. Additional excavation of 17 locations - 30.5CY total. Disposal - Three rolloffs (22.09 tons) disposed at Red Rock Landfill (nonhaz). Sampling - confirmation samples collected from 84/84 excavations. Re-sample of 18 after additional excavation.						
Sampling	None.						
QA/QC	None.						
Safety Inspections	None.						
Issues/ Delays	None.						
Meetings and misc. events	04/16/18 0800 - Weekly all-hands meeting 04/17/18 1200 - Weekly field status call.						
Next week	Disposal of soil.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	30.5	102	6	22.09	0	0
4/16/2018	0	0	0	0	0	0	0
4/17/2018	0	0	0	0	0	0	0
4/18/2018	0	0	0	0	0	0	0
4/19/2018	0	0	0	0	0	0	0
4/20/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	0	0	0	0
GRAND TOTAL	154	30.5	102	6	22.09	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico

Fort Wingate, NM, Parcel 24 Weekly Report					Week Ending:	4/27/2018	
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHO/UXOSO - David Brainard					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Roy Manygoats, Steven Johnson, Dale McClain					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.						
	Tuesday - Disposal of rolloff 4 at Red Rock Landfill.						
	Wednesday - None.						
	Thursday - None.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A. Additional excavation of 17 locations - 30.5CY total. Disposal - Four rolloffs (30.6 tons) disposed at Red Rock Landfill (nonhaz). Sampling - confirmation samples collected from 84/84 excavations. Re-sample of 18 after additional excavation.						
Sampling	None.						
QA/QC	None.						
Safety Inspections	None.						
Issues/ Delays	None.						
Meetings and misc. events	04/23/18 0800 - Weekly all-hands meeting						
Next week	Disposal of soil.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	30.5	102	6	22.09	0	0
4/23/2018	0	0	0	0	0	0	0
4/24/2018	0	0	0	0	8.51	0	0
4/25/2018	0	0	0	0	0	0	0
4/26/2018	0	0	0	0	0	0	0
4/27/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	0	8.51	0	0
GRAND TOTAL	154	30.5	102	6	30.6	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico



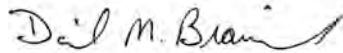

Fort Wingate, NM, Parcel 24 Weekly Report		Week Ending: 5/4/2018					
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHO/UXOSO - David Brainard					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Roy Manygoats, Steven Johnson, Dale McClain					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.						
	Tuesday - None.						
	Wednesday - None.						
	Thursday - None.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A. Additional excavation of 17 locations - 30.5CY total. Disposal - Four rolloffs (30.6 tons) disposed at Red Rock Landfill (nonhaz). Sampling - confirmation samples collected from 84/84 excavations. Re-sample of 18 after additional excavation.						
Sampling	None.						
QA/QC	None.						
Safety Inspections	None.						
Issues/Delays	None.						
Meetings and misc. events	04/30/18 0800 - Weekly all-hands meeting						
Next week	Preparation of Interim Measures Completion Report.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	30.5	102	6	30.6	0	0
4/30/2018	0	0	0	0	0	0	0
5/1/2018	0	0	0	0	0	0	0
5/2/2018	0	0	0	0	0	0	0
5/3/2018	0	0	0	0	0	0	0
5/4/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	0	0	0	0
GRAND TOTAL	154	30.5	102	6	30.6	0	0

Final, Rev. 2
 Permittee-Initiated Interim Measures Report
 Parcel 24, Igloo Block A
 Fort Wingate Depot Activity, McKinley County, New Mexico


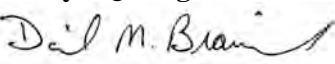
Fort Wingate, NM, Parcel 24 Weekly Report			Week Ending:	5/11/2018			
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHO/UXOSO - David Brainard					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Roy Manygoats, Steven Johnson, Dale McClain, Delvin Saganitso					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.						
	Tuesday - Collection of waste characterization sample from last rolloff (5). Once characterized and disposed, Parcel 24 field operations will be complete.						
	Wednesday - None.						
	Thursday - None.						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A. Additional excavation of 17 locations - 30.5CY total. Disposal - Four rolloffs (30.6 tons) disposed at Red Rock Landfill (nonhaz). Sampling - confirmation samples collected from 84/84 excavations. Re-sample of 18 after additional excavation.						
Sampling	Waste characterization sample collected from Rolloff 5.						
QA/QC	None.						
Safety Inspections	None.						
Issues/ Delays	None.						
Meetings and misc. events	05/07/2018 0800 - Weekly all-hands meeting 05/08/2018 1200 - Weekly field operations call						
Next week	Preparation of Interim Measures Completion Report.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	30.5	102	6	30.6	0	0
5/7/2018	0	0	0	0	0	0	0
5/8/2018	0	0	0	1	0	0	0
5/9/2018	0	0	0	0	0	0	0
5/10/2018	0	0	0	0	0	0	0
5/11/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	1	0	0	0
GRAND TOTAL	154	30.5	102	7	30.6	0	0

Fort Wingate, NM, Parcel 24 Weekly Report				Week Ending:	5/25/2018		
Site Personnel	ZAPATA	Site Supervisor/SUXOS - Pete Hendricks SSHO/UXOSO - David Brainard Environmental Sampler - Kayla Quinter					
	Subcontractors	Bohunk Excavation Inc.- Kevin Shafer, Roy Manygoats, Steven Johnson, Dale McClain, Delvin Saganitso					
Activities	Monday - ZAPATA personnel attended 0800 all-hands meeting.						
	Tuesday - None.						
	Wednesday - None.						
	Thursday - Final rolloff removed from Parcel 24 for disposal (1.98 tons).						
	Friday - None.						
Totals	154 of 154 pipes cut in Igloo Block A. 84 of 84 soil excavations completed in Igloo Block A. Additional excavation of 17 locations - 30.5CY total. Disposal - Five rolloffs (32.5 tons) disposed at Red Rock Landfill (nonhaz). Sampling - confirmation samples collected from 84/84 excavations. Re-sample of 18 after additional excavation.						
Sampling	None.						
QA/QC	None.						
Safety Inspections	None.						
Issues/Delays	None.						
Meetings and misc. events	05/21/2018 0800 - Weekly all-hands meeting 05/22/2018 1200 - Weekly field operations call						
Next week	Preparation of Interim Measures Completion Report.						
Date	Drains Removed	Soil Excavated (CY)	Confirmation Samples (#)	Waste Characterization Samples (#)	Disposed Non-Hazardous (tons)	Disposed Hazardous (tons)	Backfill Used (CY)
Previously	154	30.5	102	7	30.6	0	0
5/21/2018	0	0	0	0	0	0	0
5/22/2018	0	0	0	0	0	0	0
5/23/2018	0	0	0	0	0	0	0
5/24/2018	0	0	0	0	1.98	0	0
5/25/2018	0	0	0	0	0	0	0
WEEKLY TOTAL	0	0	0	0	1.98	0	0
GRAND TOTAL	154	30.5	102	7	32.58	0	0

Field Change Request Form

Date: 02/01/2018	Department: MRS/ECRS Division	Name: Pete Hendricks		
Change or Revision: FCR-FWDA-04	Plan / Procedure / SOP Name or #: APP/SSHP			
Site Location: Fort Wingate Depot Activity, Parcel 24, Igloo Block A				
Preliminary Information: Use of machinery to remove .25 cy of soil				
Current Document	Check All That Apply	Supporting Documentation List (document, pages, para. etc.)	Submitted by (initials)	Reviewed by (initials)
Change or Revision Due To:	<input type="checkbox"/>			
1. Regulatory Update	<input type="checkbox"/>			
2. Contract Requirement	<input type="checkbox"/>			
3. Equipment Change	<input checked="" type="checkbox"/>		PHH	EHM
4. Newly Identified	<input type="checkbox"/>			
a) Safety Hazard	<input type="checkbox"/>			
b) QC Measure	<input type="checkbox"/>			
c) Operational Issue	<input type="checkbox"/>			
5. Other:	<input type="checkbox"/>			
Summary of Change or Revision: (identify procedural, contractual, equipment, or operator and how this affects the current SOP) – Para 2.3.1 states the use of hand tools for removal of contaminated soil around drain pipes. The use of a mini-excavator would greatly increase productivity without impeding any safety concerns or change the results of the procedure.				
Change or Revision Requested: (identify page, para., figure, table, etc. that is changed or revised) Para 2.3.1				
Requestor's Signature: 				
Change or Revision: <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected		Reviewer's Signature: 		
Reason for Rejection:		Safety / QC Signature: 		
Corporate: <input checked="" type="checkbox"/> Concurrence <input type="checkbox"/> Non-Concurrence		Corporate Approval Signature: 		
COE Technical Review (Name): Michael G. Scoville		COE TR Signature:		
COE PM (Name): Saqib Khan		COE PM Signature:		

Field Change Request Form

Date: 03/13/2018	Department: MRS/ECRS Division	Name: Emily McRee		
Change or Revision: FCR-FWDA-05	Plan / Procedure / SOP Name or #: PIIM for Parcel 24 at Fort Wingate Depot Activity			
Site Location: Fort Wingate Depot Activity, Parcel 24, Igloo Block A				
Preliminary Information: Disposal of soil at Northwest New Mexico Regional Solid Waste Authority (NWNMRSWA) Red Rock Landfill in Thoreau, NM				
Current Document	Check All That Apply	Supporting Documentation List (document, pages, para. etc.)	Submitted by (initials)	Reviewed by (initials)
Change or Revision Due To:	<input type="checkbox"/>			
1. Regulatory Update	<input type="checkbox"/>			
2. Contract Requirement	<input type="checkbox"/>			
3. Equipment Change	<input type="checkbox"/>			
4. Newly Identified	<input type="checkbox"/>			
a) Safety Hazard	<input type="checkbox"/>			
b) QC Measure	<input type="checkbox"/>			
c) Operational Issue	<input type="checkbox"/>			
5. Other:	<input checked="" type="checkbox"/>		EHM	PHH
Summary of Change or Revision: PIIM for Parcel 24, finalized October 22, 2014, states that soil will be disposed at San Juan County Landfill in Aztec, NM. Since submittal of this document, Red Rock Landfill in Thoreau became available as an option for disposal of non-hazardous soil. Aztec is approximately 125 miles from Gallup while Thoreau is 32 miles. For efficiency and cost savings, Parcel 24 soil will be disposed at Red Rock Landfill in Thoreau.				
Change or Revision Requested: (identify page, para., figure, table, etc. that is changed or revised)				
PIIM for Parcel 24, page 3				
Requestor's Signature:				
Change or Revision: <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected		Reviewer's Signature: 		
Reason for Rejection:		Safety / QC Signature: 		
Corporate: <input checked="" type="checkbox"/> Concurrence <input type="checkbox"/> Non-Concurrence		Corporate Approval Signature:		
COE Technical Review (Name): Michael G. Scoville		COE TR Signature:		
COE PM (Name): Saqib Khan		COE PM Signature:		

Appendix C
Quality Control Summary Report (Electronic Only)

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QUALITY CONTROL SUMMARY REPORT

PARCEL 24

FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO

SOIL SAMPLES COLLECTED
FEBRUARY 6 – APRIL 12, 2018

MAY 2018

REVISED: SEPTEMBER 2019

Prepared for:



6302 Fairview Road, Suite 600
Charlotte, North Carolina 28210
(704) 358-8240

Prepared by:



15711 Mapledale Blvd, Suite B
Tampa, Florida 33624
(813) 968-7722

HSW Project No. 1BN901601

I.0 Introduction

This Quality Control Summary Report (QCSR) was prepared on behalf of Zapata Incorporated (Zapata) and documents the review and validation of analytical data associated with remedial activities conducted February through March 2018 at Parcel 24, Fort Wingate, New Mexico. Soil samples were collected and analyzed for arsenic, lead, and mercury by GCAL Analytical Laboratories, LLC (GCAL), Baton Rouge, Louisiana. The analytical data were validated in accordance with specifications given in the *Interim Measures Work Plan Parcel 21 – Solid Waste Management Unit 1 – TNT Leaching Beds, Final, July 14, 2016* (Work Plan), and in U.S. Army Corps of Engineers (USACE) documents *Guidance for Evaluating Performance-Based Chemical Data, EM 200-1-10, June 30, 2005*, and *Chemical Data Quality Management for Environmental Restoration Activities, ER 200-1-7, November 28, 2014*. Reference also was made to U.S. Environmental Protection Agency (USEPA) document *EPA Guidance for Quality Assurance Project Plans, EPA QA/G-5, December 2002*.

Validation qualifiers were those defined in Table 3-1 of EM 200-1-10 and are summarized as follows (note that not all were required for the validation summarized in this QCSR). Definitions of key terms and acronyms used in this QCSR but not explicitly defined can be found in the documents cited above or in the laboratory data packages.

<u>Qualifier</u>	<u>Definition</u>
(None)	The analyte was positively identified as present. The reported concentration is within the calibrated range of the instrument and the result is not affected by any noted deficiencies in the associated quality control (QC) data.
J	The analyte was detected; the reported result is an estimate or has been classified as less than fully quantitative due to one or more QC issues. When the direction of analytical bias is indicated, a + (positive) or – (negative) sign may be used.
R	The result is inconclusive because of serious QC deficiencies and, therefore, is rejected.
U	Not detected. The associated numerical value indicates the detection limit. When applied to a result considered to be an artifact, the associated numerical value is the detected concentration prior to qualification.
UJ	Not detected. The associated numerical value may be inaccurate due to one or more QC discrepancies.
X	Excluded. The result is associated with one or more reanalyses and is excluded because another result was deemed the better or best result for the analyte.

The analytical data packages conformed to Stage 4 (or Level IV) reporting as defined by USEPA in the document titled *EPA-542-B-19-001* (March 2019). Validation was limited to Stage 2b (Level III) deliverables, identified in Table 5-3 of the Work Plan. The validation findings and effect, if any, on the quality of the analytical data are summarized in the following paragraphs.

2.0 Introduction and Summary of Validation Findings

Soil samples collected from Parcel 24 were analyzed for arsenic and lead (USEPA Method 6020B) and for mercury (USEPA Method 7471B) (Table 2-1). The analytical data were reported by GCAL in six Level IV (Stage 4) laboratory data packages and corresponding staged electronic data deliverables (SEDDs) comprising Stage 2a deliverables. The SEDDs were processed through ADR.net automated data review software via an electronic quality assurance project plan (e-QAPP) that incorporated the project’s numeric data quality indicators and validation acceptance criteria. This automated data review was supplemented by a concurrent manual review of the Stage 4 laboratory data packages which, together, allowed validation of the Stage 2b deliverables.

Of 315 discrete results reported for 105 samples, 58 results, or 18.4% of the entire dataset, were qualified as a result of the validation. Qualifiers indicate that analyte concentrations may have been affected by laboratory or field procedures or estimated due to possible bias or reduced confidence in the results. The reasons for qualification were of a routine nature and are discussed in detail in Sections 3.0 and 4.0. No results were rejected; therefore, analytical completeness in terms of usable data is 100%.

Table 2-1. Summary of soil samples, analyses, number of qualified results, and percent completion

Laboratory Report	Laboratory Sample ID	Zapata Sample ID	Collection Date	Number of Analytes	
				6020B	7471B
218020733	1	24A969-EFL-D-SO	2/6/2018	2	1
218020733	2	24A969-EFR-D-SO	2/6/2018	2	1
218020733	3	24A970-EFL-D-SO	2/6/2018	2	1
218020733	4	24A970-EFR-D-SO	2/6/2018	2	1
218020733	5	24A971-EFL-D-SO	2/6/2018	2	1
218020733	6	24A971-EFR-D-SO	2/6/2018	2	1
218020733	7	24A975-EFR-D-SO	2/6/2018	2	1
218020733	8	24A976-EFL-D-SO	2/6/2018	2	1
218020733	9	24A976-EFR-D-SO	2/6/2018	2	1
218020733	10	24A977-EFL-D-SO	2/6/2018	2	1
218020733	11	24A977-EFR-D-SO	2/6/2018	2	1
218020823	1	24A965-EFL-D-SO	2/7/2018	2	1
218020823	2	24A964-EFL-D-SO	2/7/2018	2	1
218020823	3	24A964-EFR-D-SO	2/7/2018	2	1
218020823	4	24A963-EFL-D-SO	2/7/2018	2	1
218020823	5	24A962-EFL-D-SO	2/7/2018	2	1
218020823	6	24A962-EFR-D-SO	2/7/2018	2	1
218020823	7	24A955-EFL-D-SO	2/7/2018	2	1
218020823	8	24A955-EFR-D-SO	2/7/2018	2	1
218020823	9	24A941-EFL-D-SO	2/7/2018	2	1
218020823	10	24A941-EFR-D-SO	2/7/2018	2	1
218020823	11	24A942-EFL-D-SO	2/7/2018	2	1
218020823	12	24A942-EFR-D-SO	2/7/2018	2	1
218020823	13	24A943-EFL-D-SO	2/7/2018	2	1
218020823	14	24A943-EFR-D-SO	2/7/2018	2	1
218020823	15	24A944-EFL-D-SO	2/7/2018	2	1
218020823	16	24A944-EFR-D-SO	2/7/2018	2	1
218020823	17	24A945-EFL-D-SO	2/7/2018	2	1
218020823	18	24A946-EFL-D-SO	2/7/2018	2	1
218020823	19	24A946-EFR-D-SO	2/7/2018	2	1
218020823	20	24A947-EFR-D-SO	2/7/2018	2	1
218020925	1	24A948-EFL-D-SO	2/8/2018	2	1
218020925	2	24A948-EFR-D-SO	2/8/2018	2	1
218020925	3	24A950-EFL-D-SO	2/8/2018	2	1
218020925	4	24A950-EFR-D-SO	2/8/2018	2	1
218020925	5	24A951-EFL-D-SO	2/8/2018	2	1

Laboratory Report	Laboratory Sample ID	Zapata Sample ID	Collection Date	Number of Analytes	
				6020B	7471B
218020925	6	24A951-EFR-D-SO	2/8/2018	2	1
218020925	7	24A952-EFL-D-SO	2/8/2018	2	1
218020925	8	24A952-EFR-D-SO	2/8/2018	2	1
218020925	9	24A939-EFL-D-SO	2/8/2018	2	1
218020925	10	24A939-EFR-D-SO	2/8/2018	2	1
218020925	11	24A938-EFR-D-SO	2/8/2018	2	1
218020925	12	24A936-EFL-D-SO	2/8/2018	2	1
218020925	13	24A936-EFR-D-SO	2/8/2018	2	1
218020925	14	24A935-EFL-D-SO	2/8/2018	2	1
218020925	15	24A935-EFR-D-SO	2/8/2018	2	1
218020925	16	24A934-EFL-D-SO	2/8/2018	2	1
218020925	17	24A933-EFL-D-SO	2/8/2018	2	1
218020925	18	24A933-EFR-D-SO	2/8/2018	2	1
218020925	19	24A929-EFL-D-SO	2/8/2018	2	1
218020925	20	24A929-EFR-D-SO	2/8/2018	2	1
218020925	21	24A920-EFL-D-SO	2/8/2018	2	1
218020925	22	24A920-EFR-D-SO	2/8/2018	2	1
218020925	23	24A922-EFL-D-SO	2/8/2018	2	1
218020925	24	24A922-EFR-D-SO	2/8/2018	2	1
218020925	25	24A923-EFL-D-SO	2/8/2018	2	1
218020925	26	24A923-EFR-D-SO	2/8/2018	2	1
218021729	1	24A924-EFR-D-SO	2/15/2018	2	1
218021729	2	24A925-EFR-D-SO	2/15/2018	2	1
218021729	3	24A925-EFL-D-SO	2/15/2018	2	1
218021729	4	24A926-EFR-D-SO	2/15/2018	2	1
218021729	5	24A926-EFL-D-SO	2/15/2018	2	1
218021729	6	24A927-EFL-D-SO	2/15/2018	2	1
218021729	7	24A918-EFR-D-SO	2/15/2018	2	1
218021729	8	24A918-EFL-D-SO	2/15/2018	2	1
218031317	1	24A917-EFR-D-SO	3/12/2018	2	1
218031317	2	24A917-EFL-D-SO	3/12/2018	2	1
218031317	3	24A916-EFR-D-SO	3/12/2018	2	1
218031317	4	24A916-EFL-D-SO	3/12/2018	2	1
218031317	5	24A915-EFR-D-SO	3/12/2018	2	1
218031317	6	24A915-EFL-D-SO	3/12/2018	2	1
218031317	7	24A914-EFR-D-SO	3/12/2018	2	1
218031317	8	24A914-EFL-D-SO	3/12/2018	2	1
218031317	9	24A913-EFR-D-SO	3/12/2018	2	1
218031317	10	24A913-EFL-D-SO	3/12/2018	2	1
218031317	11	24A912-EFR-D-SO	3/12/2018	2	1
218031317	12	24A912-EFL-D-SO	3/12/2018	2	1
218031317	13	24A909-EFR-D-SO	3/12/2018	2	1
218031317	14	24A909-EFL-D-SO	3/12/2018	2	1
218031317	15	24A907-EFR-D-SO	3/12/2018	2	1
218031317	16	24A905-EFR-D-SO	3/12/2018	2	1
218031317	17	24A905-EFL-D-SO	3/12/2018	2	1
218031317	18	24A903-EFR-D-SO	3/12/2018	2	1
218031317	19	24A903-EFL-D-SO	3/12/2018	2	1
218031317	20	24A-EF-D-SO-DUP01	3/12/2018	2	1
218031317	21	24A-EF-D-SO-DUP02	3/12/2018	2	1
218031317	22	24A-EF-D-SO-DUP03	3/12/2018	2	1
218031317	23	24A-EF-D-SO-DUP04	3/12/2018	2	1
218040309	1	24A977-EFR-D-SO2	3/29/2018	2	1
218040309	2	24A976-EFR-D-SO2	3/29/2018	2	1
218040309	3	24A969-EFL-D-SO2	3/29/2018	2	1
218040309	4	24A955-EFR-D-SO2	3/29/2018	2	1
218040309	5	24A955-EFL-D-SO2	3/29/2018	2	1
218040309	6	24A941-EFR-D-SO2	3/29/2018	2	1
218040309	7	24A943-EFR-D-SO2	3/29/2018	2	1
218040309	8	24A944-EFR-D-SO2	3/29/2018	2	1
218040309	9	24A948-EFL-D-SO2	3/29/2018	2	1

Laboratory Report	Laboratory Sample ID	Zapata Sample ID	Collection Date	Number of Analytes	
				6020B	7471B
218040309	10	24A951-EFR-D-SO2	3/29/2018	2	1
218040309	11	24A926-EFL-D-SO2	3/29/2018	2	1
218040309	12	24A923-EFR-D-SO2	3/29/2018	2	1
218040309	13	24A922-EFR-D-SO2	3/29/2018	2	1
218040309	14	24A920-EFL-D-SO2	3/29/2018	2	1
218040309	15	24A929-EFL-D-SO2	3/29/2018	2	1
218040309	16	24A918-EFR-D-SO2	3/29/2018	2	1
218041405	1	24A955-EFL-D-SO3	4/12/2018	2	1
Total Number of Analytes Reported				210	105
Total Number of Qualified Results				58	0
Total Number of Rejected Results				0	0
Analytical Percent Completion				100%	100%

2.1 Sample Deliveries and Condition Upon Receipt

The chain-of-custody (COC) forms included with each of the six laboratory data packages were reviewed and deemed acceptable. The samples were received in good condition, under proper preservation, and at acceptable temperatures.

Qualification: None required.

2.2 Case Narratives and Completeness

The case narratives were reviewed, and the data packages were checked for completeness. Analytical issues noted by the laboratory were of a routine nature and are discussed in subsequent sections of this report.

Qualification: None required.

2.3 Holding Times

The samples were prepared and analyzed for the parameters of interest (arsenic, lead, and mercury only) within the maximum allowed holding times.

Qualification: None required.

2.4 Field Quality Control (QC) Samples

2.4.1 Field-Generated Blanks

No field-generated blanks were required or collected in association with the soil samples collected at Parcel 24.

Qualification: None required.

2.4.2 Field Duplicates

Four field duplicates were collected in association with the soil sampling at Parcel 24 and submitted to the laboratory as single-blind samples. These field QC samples allow an assessment of cumulative (i.e., field and laboratory) precision (Table 2-2).

As specified in the Work Plan, cumulative precision for soil samples was deemed to be high when the relative percent difference (%RPD) between a set of paired results exceeded 20% or, at low levels (i.e.,

when one or both results was less than five times the magnitude of the reporting limit), the absolute difference in results $|S-FD|$ was greater than twice the magnitude of the reporting limit (the higher of the two reporting limits for the paired results was used, if they differed from one another).

As indicated below, the results for lead reported for the primary sample-field duplicate pair collected at location 24A917-EFR-D-SO and for arsenic and lead reported for the primary sample-field duplicate pair collected at location 24A903-EFR-D-SO exceeded the limits described above; all other paired results met the project objectives for cumulative precision.

Table 2-2. Evaluation of primary samples and field duplicates

Lab Sample ID	Zapata Sample ID	Analyte	Reporting Limit	Result	%RPD		S-FD	
21803131701	24A917-EFR-D-SO	Arsenic	0.45	3.09	14.21	Okay	0.41	--
21803131720	24A-EF-D-SO-DUP01	Arsenic	0.43	2.68				
21803131701	24A917-EFR-D-SO	Lead	4.46	62.7	25.13	High	14	--
21803131720	24A-EF-D-SO-DUP01	Lead	4.33	48.7				
21803131701	24A917-EFR-D-SO	Mercury	0.013	0.022	37.04	--	0.01	Okay
21803131720	24A-EF-D-SO-DUP01	Mercury	0.013	0.032				
21803131702	24A917-EFL-D-SO	Arsenic	0.44	3.75	0.80	Okay	0.03	--
21803131721	24A-EF-D-SO-DUP02	Arsenic	0.45	3.78				
21803131702	24A917-EFL-D-SO	Lead	0.44	30.5	1.63	Okay	0.5	--
21803131721	24A-EF-D-SO-DUP02	Lead	4.49	31				
21803131702	24A917-EFL-D-SO	Mercury	0.014	0.025	27.59	--	0.008	Okay
21803131721	24A-EF-D-SO-DUP02	Mercury	0.013	0.033				
21803131718	24A903-EFR-D-SO	Arsenic	0.43	3.33	37.86	High	1.06	--
21803131722	24A-EF-D-SO-DUP03	Arsenic	0.44	2.27				
21803131718	24A903-EFR-D-SO	Lead	4.28	47.1	113.22	High	122.9	--
21803131722	24A-EF-D-SO-DUP03	Lead	4.39	170				
21803131718	24A903-EFR-D-SO	Mercury	0.012	0.0072 J	124.61	--	0.0238	Okay
21803131722	24A-EF-D-SO-DUP03	Mercury	0.013	0.031				
21803131719	24A903-EFL-D-SO	Arsenic	0.45	4.09	0.24	Okay	0.01	--
21803131723	24A-EF-D-SO-DUP04	Arsenic	0.45	4.1				
21803131719	24A903-EFL-D-SO	Lead	4.52	61.7	1.96	Okay	1.2	--
21803131723	24A-EF-D-SO-DUP04	Lead	4.49	60.5				
21803131719	24A903-EFL-D-SO	Mercury	0.012	0.029	15.87	--	0.005	Okay
21803131723	24A-EF-D-SO-DUP04	Mercury	0.012	0.034				

Qualification: The detections of lead reported for samples 24A917-EFR-D-SO and 24A-EF-D-SO-DUP01 and of arsenic and lead reported for samples 24A903-EFR-D-SO and 24A-EF-D-SO-DUP03 were concluded to be less than fully representative of the sampling locations and were coded with J validation qualifiers. The likely cause of the discrepancies in results is sample heterogeneity, quite common with environmental soil samples. These results are otherwise reliable and usable (with some additional qualification to the results for arsenic, described in Section 3.1.1), as they provide the project team with insight into the extent of variability of analytes of interest at the given sampling location. Qualification based on duplicate precision was limited to the primary sample and field duplicate as recommended by DoD's latest data validation procedures (DoD 2019) and EPA's SOP No. HW-3b ICP-MS Data Validation (EPA 2015).

Additionally, the majority of the sample/duplicate comparisons meet the precision criteria with four RPDs less than 2%; this indicates that appropriate duplicate collection procedures were followed, but sample heterogeneity affected three of 12 results in cases where MS recovery exceeded the upper acceptance limit (by 26%), biasing the results high.

Upon completion of soil sampling at Parcel 24 and review of the analytical data, it was determined that, while field duplicates had been collected from the Wingate project site as a whole at a frequency of greater than the project goal of 10% specified in the Work Plan, fewer than 10% had been collected at Parcel 24. This inadvertent oversight is not believed to have adversely impacted project objectives to any significant degree as the data for all 104 samples, as described in detail in Section 3.0, is otherwise sound, with qualifications due to evidence of matrix interference of a nature routinely encountered with soil samples and their characteristic heterogeneity and complex matrices. No data were qualified or rejected based on duplicate frequency as directed in Department of Defense (DoD) Data Validation Procedure (DoD 2019).



3.0 Analytical Data

3.1 Metals (Method 6020B)

Each of the 105 soil samples was analyzed for arsenic and lead by USEPA Method 6020B. The results were reported in six laboratory data delivery groups (laboratory data packages and SEDDs).

3.1.1 Method QC Data

Method Blanks

Laboratory method blanks for soil matrices are prepared with inert, laboratory-grade silica sand or equivalent at a frequency of one per preparation batch of 20 or fewer environmental samples. These quality control samples allow an assessment as to what extent, if any, sample results may be positively biased due to laboratory background conditions (i.e., low-level contamination) or cross-contamination introduced during the sample preparation or analysis processes. No arsenic or lead was detected in any of the laboratory method blanks prepared and analyzed in association with the soil samples, providing strong evidence that the analytical results for these two metals, as reported, were not biased due to laboratory background conditions or cross-contamination.

Qualification: None required.

Laboratory Control Samples (LCSs)

Laboratory control samples (LCSs) for soil matrices are prepared with inert, laboratory-grade silica sand or equivalent at a frequency of one per preparation batch of 20 or fewer environmental samples. These samples are spiked with known concentrations of the analytes of interest before the preparation process begins and are used to assess whether the laboratory's analytical system is in control. The recoveries of arsenic and lead in the analysis of all LCSs were within acceptance limits in all instances, providing strong evidence that the analytical system was in control and that the analytical results for these two metals, as reported, were not affected by analytical bias.

Qualification: None required.

Matrix Spike / Matrix Spike Duplicates (MS/MSDs)

Matrix spike / matrix spike duplicate (MS/MSD) samples are prepared by spiking additional volumes of environmental samples with known concentrations of target analytes and carrying these spiked samples through the same preparation and analysis procedures as other project samples comprising the preparation batch (20 or fewer samples). MS/MSD data allow an assessment of analytical accuracy and precision in the presence of potential matrix effects and the extent to which the analytical results may be affected by matrix interferences and/or sample heterogeneity.

For this project, additional volumes of samples 24A969-EFL-D-SO, 24A962-EFR-D-SO, 24A948-EFL-D-SO, 24A914-EFL-D-SO, and 24A944-EFR-D-SO were used by the laboratory for MS/MSD analyses of arsenic and lead. In some instances, the recoveries were not meaningful as the spike concentration was too small, relative to the concentration of the analyte in the parent sample. For example, for the MS/MSD analyses of lead performed with sample 24A948-EFL-D-SO (laboratory report 218020925), the spike concentration of 2.24 mg/Kg was insignificant relative to the concentration of 458 mg/Kg reported for the sample, with the recoveries (17,000% and -12,000%) not meaningful and, therefore, not used to evaluate or qualify any sample data (this was, in fact, true in all instances in which project samples were used by the laboratory for MS/MSD analyses of lead).

In contrast, for the MS/MSD analyses of arsenic performed with sample 24A962-EFR-D-SO (laboratory report 218020823), the spike concentration of 2.13 mg/Kg was greater than the concentration of 2.09 mg/Kg reported for the sample; thus, the MS recovery of 71%, which was less than the lower acceptance limit of 82%, was relevant and used to evaluate and qualify the results for arsenic reported for the parent sample and other project samples included in the preparation batch. In the MS/MSD analyses of sample 24A949-EFL-D-SO (laboratory report 218020733), the spike concentration of 2.21 mg/Kg exceeded the minimum of one-fourth the sample concentration (7.1 mg/Kg) (i.e., the so-called “four-times” rule did not apply), and the MS/MSD recoveries of 195% and 180%, which exceeded the upper acceptance limit of 118%, likewise were relevant and used to evaluate and qualify the results for arsenic reported for this parent sample and other project samples included in the preparation batch. Similar qualifications were made to parent sample 24A914-EFL-D-SO and other project samples in that preparation batch, based on an elevated MS recovery of 144% (the MSD recovery of 114% was within acceptance limits). All MS/MSD %RPDs of arsenic were within acceptance limits (i.e., $\leq 30\%$ RPD); thereby suggesting that the recovery excursions were more likely due to matrix effects, rather than sample nonhomogeneity.

Qualification: MS/MSD recoveries that were not within acceptance limits for analytical accuracy (%R) and for which the spike concentration was at least one-fourth as great as the concentration in the parent sample were used to qualify data for project samples included in the same preparation batch as that MS/MSD. This resulted in 54 results for arsenic being classified as less than fully quantitative and coded with J validation qualifiers (all were detections). While these results may be slightly biased in the positive or negative direction, as indicated by the spike recoveries, the extent of bias is on the order of that routinely encountered by commercial environmental laboratories when analyzing soil samples for metals, and the data are otherwise fully usable. No qualification of any of the data for lead was warranted, based on MS/MSD data.

Serial Dilutions / Post-Digestion Spikes (SDs/PDSs)

The laboratory analyzed and reported data for five-fold serial dilutions and post-digestion spikes of additional volumes of sample digestates of parent samples for which MS/MSD analyses were performed. Serial dilutions are deemed valid when the concentration of the analyte in the parent sample is minimally 50 times as great as the LOQ (reporting limit) and deemed acceptable when the percent difference (%D) is within $\pm 10\%$ of the original determination. Post-digestion spikes are analyzed when serial dilution results are not valid or not within the acceptance limit of $\pm 10\%$, relative to the known true value, or otherwise not within laboratory-derived acceptance limits. By these measures, all serial dilution and/or post-digestion spike results were within project acceptance limits in all instances. These results provide strong evidence that the MS/MSD recoveries of arsenic noted in the preceding paragraphs as not being within acceptance limits were due to matrix effects and not loss of analytical precision.

Qualification: None required.

3.1.2 Instrument QC Data

Tuning and Calibration Data

Tuning data for the instruments used for the analyses of the soil samples were within specified acceptance criteria for peak height, peak width, and relative standard deviations (%RSDs) of replicate analyses in all instances. The initial calibrations (ICALs) of arsenic and lead yielded correlation

coefficients of approximately 1.0 for each of these metals for all ICALs performed in association with the analysis of the project soil samples.

Initial and continuing calibration verifications (ICVs and CCVs) bracketing the analyses of the soil samples were reviewed and confirmed as being within acceptance limits of 90-110% in all instances. In one instance, reported in laboratory report 218020823, a CCV of 205% was reported for lead; however, this CCV did not bracket any sample analyses for lead and therefore was not relevant. These tuning and calibration data indicate that the laboratory's instruments had been correctly tuned and calibrated and that there was no loss of analytical accuracy throughout the analytical runs.

Qualification: None required.

Low-Level Initial Calibration Verifications (LLCCVs)

The initial low-level CCVs (LLCCVs, used for LOQ checks) yielded recoveries of target metals that were within 80-120%, and all other LLCCVs analyzed throughout the analytical runs and bracketing reported results yielded recoveries that were within 70-130%. These results indicate that the instruments were capable of producing quantitative data at concentrations near the LOQs.

Qualification: None required.

Initial and Continuing Calibration Blanks (ICBs/CCBs)

No arsenic was detected in any of the ICBs or CCBs associated with the sample analyses, nor was lead detected in any of the ICBs or the majority of CCBs. In three instances, low concentrations of lead were detected in CCVs; however, the on-instrument concentrations of lead detected in samples associated with these CCVs far exceeded the artifact threshold values of five times the on-instrument concentrations detected in the blanks and, therefore, it can be assumed that they were unaffected by any trace detections of lead in the CCBs. These ICB and CCB results indicate that the laboratory's analytical system was free of background contamination.

Qualification: None required.

Interference Check Samples (ICS-A and -AB)

Freedom from interferences is demonstrated by the use of interference check samples (ICSs), analyzed at the beginning of an analytical run and, minimally, every 12 hours thereafter. Lead is not included in either of the two ICS solutions used for Method 6020B (ICS-A and ICS-AB), while arsenic is included only in the ICS-AB solution. The findings of non-detect reported for lead in all ICS-A and ICS-AB solutions and of arsenic in all ICS-A solutions met validation acceptance criteria (i.e., the magnitudes of the instrument readings were less than the magnitudes of the on-instrument limits of detection [LODs] of these analytes in all instances). The recoveries of arsenic in all ICS-AB solutions were within acceptance limits of 80-120% in all instances.

Qualification: None required.

Internal Standards

Internal standards are automatically added to samples as each is introduced into the analytical instrument and are used to adjust sample results for any minor discrepancies in injection volume or routine instrument. All internal standards associated with arsenic and lead yielded responses that were within acceptance limits in all instances.

Qualification: None required.

Analyte Quantitation

In the case narrative, the laboratory stated that all samples required ten-fold dilutions to mitigate the effects of interferences and/or to allow quantitation of detected target metals within the calibration ranges. Other samples required dilutions of 100-fold or greater to accurately quantify detections of lead. These dilutions were reasonable and necessary. No other issues associated with analyte detection or quantitation were noted.

Qualification: None required.

3.2 Mercury (Method 7471B)

Each of the 105 soil samples was analyzed for mercury by USEPA Method 7471B. The results were reported in six laboratory data delivery groups.

3.2.1 Method QC Data

Method Blanks

No mercury was detected in any of the laboratory method blanks prepared and analyzed in association with the soil samples.

Qualification: None required.

Laboratory Control Samples (LCSs)

The recovery of mercury in the analysis of each of the LCSs was within project acceptance limits in all instances.

Qualification: None required.

Matrix Spike / Matrix Spike Duplicates (MS/MSDs)

Additional volumes of project samples 24A969-EFL-D-SO, 24A962-EFR-D-SO, 24A948-EFL-D-SO, 24A914-EFL-D-SO, and 24A944-EFR-D-SO were used by the laboratory for MS/MSD analyses of mercury. The recoveries met validation acceptance criteria for analytical accuracy, as measured by the %R, and analytical precision, as measured by the %RPD, in all instances.

Qualification: None required.

3.2.2 Instrument QC Data

Calibration Data

The initial calibrations (ICALs) of mercury yielded correlation coefficients of 0.995 or higher in all instances. Initial and continuing calibration verifications (ICVs and CCVs) bracketing the analyses of the soil samples were reviewed, and all were confirmed as being within acceptance limits of 90-110%.

Qualification: None required.

Low-Level Initial Calibration Verifications (LLCCVs)

The initial LLCCVs yielded recoveries of mercury that were within 80-120% in all instances.

Qualification: None required.

Initial and Continuing Calibration Blanks (ICBs/CCBs)

No mercury was detected in any of the ICBs or CCBs associated with the sample analyses.

Qualification: None required.

Analyte Quantitation

Mercury was detected in each of the 105 soil samples. No dilutions were required, and the laboratory correctly applied J flags to nine detections that were less than the LOQs.

Qualification: None required.

4.0 Data Quality Indicators (PARCC Assessment)

Data quality indicators (DQIs) are data descriptors used to assess the acceptability or usability of analytical data. Primary DQIs include precision, accuracy, representativeness, comparability, and completeness (PARCC). PARCC assessment for the dataset addressed by this QCSR is as follows (definitions for each are from *EPA Guidance for Quality Assurance Project Plans, EPA QA/G5, February 1998*).

4.1 Precision

Analytical precision is a measure of the extent of agreement between duplicate analyses or among three or more replicate analyses for a particular parameter or analyte. Analytical precision is assessed by calculating the %RPD or absolute difference in results for unspiked laboratory duplicates $|S-LD|$ or the %RPD for MS/MSD analyses. No results were qualified based on diminished analytical precision.

4.2 Accuracy

Analytical accuracy is a measure of the extent to which a measured value reflects the true value of a parameter or analyte. LCSs and MS/MSDs are used to assess the accuracy of sample data. As noted in Section 3.1.1, recovery data for MS/MSDs are not evaluated or used to qualify sample data when the spike concentration is less than one-fourth the concentration of the analyte in the parent sample (i.e., the spike concentration is assumed to be obscured by routine analytical measurement uncertainty).

Fifty-four results for arsenic were qualified based on diminished analytical accuracy evidenced by MS and/or MSD recoveries that were not within project acceptance limits. These 54 qualified results, all of which were detections, represent about 17.3% of the entire dataset. The MS/MSD excursions were of a routine nature, on the order of that typically encountered by environmental laboratories with soil samples, and are not suggestive of any analytical issues that would preclude use of the data, particularly in light of all calibration data and LCS recovery data meeting validation acceptance criteria.

4.3 Representativeness

Representativeness is a measure of the extent to which the data for a particular sample represents the sampling location at the time of sample collection. Holding times, sample preservation, and blank analyses are indicators of the representativeness of the analytical data. Field duplicates also allow an assessment of sample representativeness.

None of the analytical data required qualification based on exceeded holding times, insufficient preservation, or blank results. However, as noted in Section 2.4.2, the results for lead for the primary sample-field duplicate pair collected at location 24A917-EFR-D-SO and for arsenic and lead for the primary sample-field duplicate pair collected at 24A903-EFR-D-SO yielded data for cumulative precision that exceeded project goals (20% RPD) given in the Work Plan. This represents about 1.9% of the dataset. While the results for arsenic for this latter pair also were qualified due to an elevated MS recovery, the results for lead for both of these two primary sample-field duplicate pairs were not qualified for any reason other than the elevated field duplicate %RPDs. These three results, while qualified, are, individually, concluded to be sound, and they provide useful information as to the extent of analyte variability at the sampled locations.

4.4 Comparability

Comparability is a measure of the confidence with which discrete data sets can be used for common analysis and interpretation. Comparability of data with prior or subsequent datasets is not compromised, provided that the analytical methods did not change to any significant degree over time. Both intra-laboratory and inter-laboratory comparability of data are assisted by the use of second-source standards used to confirm accurate instrument calibration. As standard analytical methods and reporting procedures, as well as second-source standards (ICVs), were used consistently by the laboratory, the comparability criteria for the analytical data were met.

4.5 Completeness

Completeness is a measure of the number of valid results obtained, expressed as a percentage of the total number of intended valid measurements. Thus, percent completeness can be affected by the inability to collect all of the samples that were intended or to perform the intended analyses, as well as by data being classified as unusable due to one or more quality issues. Data classified as less than fully quantitative are otherwise usable for project purposes and therefore are counted as valid. For this soil sampling event at Parcel 24, all primary soil samples were collected and analyzed as planned. No results were rejected; therefore, completeness in terms of usable data is 100%.

5.0 Summary of Qualified Data and Data Usability

The totality of the laboratory method and instrument quality control data associated with the analysis of the soil samples collected from Parcel 24 for arsenic, lead, and mercury supports the conclusion that the analytical data are accurate, reliable, and usable. While some results were qualified due to evidence of matrix interferences or sample nonhomogeneity (Table 5-1), the quality excursions were of a routine nature, and the sample results are otherwise fully usable by the project team.



Table 5-1. Summary of qualified data

Laboratory Report	Lab Sample ID	Zapata Sample ID	Dilution Factor	Analyte	Result (mg/Kg)	Validation Qualifier	Direction of Potential Bias	Reason for Qualification
218020733	01	24A969-EFL-D-SO	10	Arsenic	7.1	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	02	24A969-EFR-D-SO	10	Arsenic	4.69	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	03	24A970-EFL-D-SO	10	Arsenic	3.43	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	04	24A970-EFR-D-SO	10	Arsenic	3.75	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	05	24A971-EFL-D-SO	10	Arsenic	3.05	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	06	24A971-EFR-D-SO	10	Arsenic	3.7	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	07	24A975-EFR-D-SO	10	Arsenic	3.34	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	08	24A976-EFL-D-SO	10	Arsenic	2.7	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	09	24A976-EFR-D-SO	10	Arsenic	3	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	10	24A977-EFL-D-SO	10	Arsenic	1.61	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020733	11	24A977-EFR-D-SO	10	Arsenic	964	J	+	MS/MSD recoveries (195%/180%) exceeded acceptance limits (82-118%)
218020823	01	24A965-EFL-D-SO	10	Arsenic	1.19	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	02	24A964-EFL-D-SO	10	Arsenic	2.89	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	03	24A964-EFR-D-SO	10	Arsenic	2.72	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	04	24A963-EFL-D-SO	10	Arsenic	3.64	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	05	24A962-EFL-D-SO	10	Arsenic	2.92	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	06	24A962-EFR-D-SO	10	Arsenic	2.09	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	07	24A955-EFL-D-SO	10	Arsenic	2.86	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	08	24A955-EFR-D-SO	10	Arsenic	2.72	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	09	24A941-EFL-D-SO	10	Arsenic	2.22	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	10	24A941-EFR-D-SO	10	Arsenic	6.55	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	11	24A942-EFL-D-SO	10	Arsenic	2.65	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	12	24A942-EFR-D-SO	10	Arsenic	4.24	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	13	24A943-EFL-D-SO	10	Arsenic	3.66	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	14	24A943-EFR-D-SO	10	Arsenic	3.65	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	15	24A944-EFL-D-SO	10	Arsenic	4.01	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	16	24A944-EFR-D-SO	10	Arsenic	3.73	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	17	24A945-EFL-D-SO	10	Arsenic	2.98	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	18	24A946-EFL-D-SO	10	Arsenic	4.58	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)

Laboratory Report	Lab Sample ID	Zapata Sample ID	Dilution Factor	Analyte	Result (mg/Kg)	Validation Qualifier	Direction of Potential Bias	Reason for Qualification
218020823	19	24A946-EFR-D-SO	10	Arsenic	2.99	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218020823	20	24A947-EFR-D-SO	10	Arsenic	4.53	J	-	MS recovery (71%) was less than the lower acceptance limit (82%)
218031317	01	24A917-EFR-D-SO	10	Arsenic	3.09	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	01	24A917-EFR-D-SO	10	Lead	62.7	J	+	Field duplicate %RPD (25.2%) exceeded the UFP QAPP limit (20%)
218031317	02	24A917-EFL-D-SO	10	Arsenic	3.75	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	03	24A916-EFR-D-SO	10	Arsenic	3.12	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	04	24A916-EFL-D-SO	10	Arsenic	3.75	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	05	24A915-EFR-D-SO	10	Arsenic	3.28	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	06	24A915-EFL-D-SO	10	Arsenic	3.02	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	07	24A914-EFR-D-SO	10	Arsenic	2.68	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	08	24A914-EFL-D-SO	10	Arsenic	1.33	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	09	24A913-EFR-D-SO	10	Arsenic	1.77	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	10	24A913-EFL-D-SO	10	Arsenic	1.86	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	11	24A912-EFR-D-SO	10	Arsenic	3.08	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	12	24A912-EFL-D-SO	10	Arsenic	1.19	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	13	24A909-EFR-D-SO	10	Arsenic	4.11	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	14	24A909-EFL-D-SO	10	Arsenic	1.3	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	15	24A907-EFR-D-SO	10	Arsenic	1.7	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	16	24A905-EFR-D-SO	10	Arsenic	3.5	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	17	24A905-EFL-D-SO	10	Arsenic	3.09	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	18	24A903-EFR-D-SO	10	Arsenic	3.33	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	18	24A903-EFR-D-SO	10	Arsenic	3.33	J	+	Field duplicate %RPD (37.9%) exceeded the UFP QAPP limit (20%)
218031317	18	24A903-EFR-D-SO	10	Lead	47.1	J	-	Field duplicate %RPD (113%) exceeded the UFP QAPP limit (20%)
218031317	19	24A903-EFL-D-SO	10	Arsenic	4.09	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	20	24A-EF-D-SO-DUP01	10	Arsenic	2.68	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	20	24A-EF-D-SO-DUP01	10	Lead	48.7	J	-	Field duplicate %RPD (25.2%) exceeded the UFP QAPP limit (20%)
218031317	21	24A-EF-D-SO-DUP02	10	Arsenic	3.78	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	22	24A-EF-D-SO-DUP03	10	Arsenic	2.27	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)
218031317	22	24A-EF-D-SO-DUP03	10	Arsenic	2.27	J	+	Field duplicate %RPD (37.9%) exceeded the UFP QAPP limit (20%)
218031317	22	24A-EF-D-SO-DUP03	10	Lead	170	J	+	Field duplicate %RPD (113%) exceeded the UFP QAPP limit (20%)

Laboratory Report	Lab Sample ID	Zapata Sample ID	Dilution Factor	Analyte	Result (mg/Kg)	Validation Qualifier	Direction of Potential Bias	Reason for Qualification
218031317	23	24A-EF-D-SO-DUP04	10	Arsenic	4.1	J	+	MS recovery (144%) exceeded the upper acceptance limit (118%)

Appendix D
Waste Characterization and Disposal Documentation (Electronic Only)

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**Northwest New Mexico
 Regional Solid Waste Authority**

101 Red Mesa Bluffs Drive, P.O. Box 1330 Thoreau, New Mexico 87323 Tel(505)905-8402 Fax(505)905-8401

Generator's Non-hazardous Waste Profile Sheet

Requested Disposal Facility Red Rock Regional Landfill
 Renewal for Profile Number _____

Profile Number 7350-2018-A
 Waste Approval Expiration Date 2-26-2019

A. Waste Generator Facility Information (must reflect location of waste generation/origin)	
1. Generator Name: <u>Fort Wingate Army Depot</u>	7. Email Address: <u>richard.s.cruz2.civ@mail.mil</u>
2. Site Address: <u>7 miles east of Gallup, Army Depot, Historic Route 66</u>	8. Phone: <u>505-862-2416</u>
3. City/Zip: <u>Fort Wingate, NM 87316</u>	9. Fax: _____
4. State: <u>NM</u>	10. NAICS Code: _____
5. County: <u>McKinley</u>	11. Generator USEPA ID#: <u>NM6213850974</u>
6. Contact Name/Title: <u>Richard Cruz/Army BRAC Rep.</u>	12. State ID# (if applicable) _____
B. Customer Information	
1. Customer Name: <u>ZAPATA</u>	6. Phone: <u>704-378-4901/(c)803-270-0141</u> Fax: <u>704-358-8342</u>
2. Billing Address: <u>6302 Fairview Road, Suite 600</u>	7. Transporter Name: <u>Kachina Rentals</u>
3. City, State, and Zip: <u>Charlotte, NC 28210</u>	8. Transporter ID# (if applicable) <u>0309636</u>
4. Contact Name: <u>Emily McRee</u>	5. Contact Email: <u>emcree@zapatapinc.com</u>
5. Contact Email: _____	PO Number <u>R20179-019</u>
C. Waste Stream Information	
1. DESCRIPTION	
a. Common Waste Name: <u>Non-hazardous "Special Waste" (Industrial solid waste)</u>	State Waste Code(s): _____
b. Describe Process Generation Waste or Source of Contamination: <u>Soil from leaching beds used at a former TNT Washout Facility.</u>	
c. Typical Colors(s): <u>reddish brown</u>	
d. Strong Odor? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe: _____	
e. Physical State at 70 degrees F: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Powder <input type="checkbox"/> Semi-solid or Sludge <input type="checkbox"/> Other	
f. Layers? <input type="checkbox"/> Single Layer <input type="checkbox"/> Multi-layer <input checked="" type="checkbox"/> NA	
g. Water Reactive? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____	
h. Free Liquid Range (%): <input type="checkbox"/> to <input type="checkbox"/> <input checked="" type="checkbox"/> NA (solid)	
i. pH Range: <input type="checkbox"/> <2 <input type="checkbox"/> 2.1-12.4 <input type="checkbox"/> >12.5 <input checked="" type="checkbox"/> NA (solid) <input type="checkbox"/> Actual _____	
j. Liquid Flash Point: <input type="checkbox"/> <140 degrees F <input type="checkbox"/> >140 degrees F <input checked="" type="checkbox"/> NA (solid) <input type="checkbox"/> Actual _____	
k. Flammable Solid <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
l. Physical Constituents: List all constituents of waste stream (e.g. Soil 0-80%, Wood 0-20%): <input type="checkbox"/> (See Attached)	
Constituents (total composition must be >100%)	Concentration %
1 <u>Soil</u>	<u>100%</u>
2 _____	_____
3 _____	_____
2. ESTIMATED QUALITY OF WASTE AND SHIPPING INFORMATION	
a. Check One: <input type="checkbox"/> Event <input checked="" type="checkbox"/> Base/Ongoing	
b. Estimated Annual Quantity: <u>75,000</u> <input type="checkbox"/> Tons <input checked="" type="checkbox"/> Cubic Yards <input type="checkbox"/> Drums <input type="checkbox"/> Gallons <input type="checkbox"/> Other (specify) _____	
c. Shipping Frequency: <u>5,000 - 10,000 CY</u> Units per: <input checked="" type="checkbox"/> Month <input type="checkbox"/> Quarter <input type="checkbox"/> Year <input type="checkbox"/> One Time <input type="checkbox"/> Other	

**Northwest New Mexico
 Regional Solid Waste Authority**

101 Red Mesa Bluffs Drive, P.O. Box 1330 Thoreau, New Mexico 87323 Tel:(505)905-8402 Fax(505)905-8401

Generator's Non-hazardous Waste Profile Sheet

2. ESTIMATED QUALITY OF WASTE AND SHIPPING INFORMATION (cont'd)		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
d. Is this a US Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.)		
e. USDOT Shipping Description (if applicable):		
3. SAFETY REQUIREMENTS (Handling, PPE, etc.)		Tarps on haul trucks. Hard hats, safety glasses, steel-toed boots during loading/unloading.
D. Regulatory Status (please check appropriate responses)		
1. Is this a USEPA (40 CFR part 261)/State hazardous waste? If yes, contact your sales representative.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. Is this waste included in one or more of categories below (check all that apply)? If yes, attach supporting documentation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
<input type="checkbox"/> Delisted Hazardous Waste	<input type="checkbox"/> Excluded Waste under CFR 261.4	
<input type="checkbox"/> Treated Hazardous Waste Debris	<input type="checkbox"/> Treated Characteristic Hazardous Waste	
3. Is this waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions.		
4. Does the waste represented by this waste profile sheet contain radioactive material?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
a. If yes, is disposal regulated by the Nuclear Regulatory Commission?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5. Does the waste represented by this waste profile sheet contain concentrations of regulated Polychlorinated Biphenyls(PCB's)?		
a. If yes, is disposal regulated under TSCA?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6. Does the waste contain untreated, regulated medical or infectious waste?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7. Does the waste contain asbestos?		
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
a. If yes, does the waste contain <500 ppmw VDHAP's at the point of determination?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
E. Generator Certification (please read and certify by signature below)		
By signing this Generator's Waste Profile Sheet, I hereby certify that all:		
1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;		
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to the NWNMRSWA/the Contractor;		
3. Analytical data attached pertaining to the profiled waste as derived from testing a representative sample in accordance with 40 CFR 261.2© or equivalent rules; and		
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to NWNMRSWA (and the Contractor, if applicable) prior to providing the waste to NWNMRSWA (and the Contractor, if applicable).		
5. Check all that apply:		
<input checked="" type="checkbox"/> Attached analytical pertains to the waste (identify by laboratory and sample ID #'s and parameters tested:		# Pages <u>12</u>
<hr/>		
<input type="checkbox"/> Only the analysis identified on the attachment pertain to the waste (identify by laboratory and sample ID #'s and parameters tested).		
Attachment# _____		
<input type="checkbox"/> Additional information necessary to characterize the profiled waste has been attached (other than analytical). Indicate the number of attached pages _____		

**Northwest New Mexico
 Regional Solid Waste Authority**

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Generator's Non-hazardous Waste Profile Sheet

E. Generator Certification (please read and certify by signature below) cont'd.	
5. Cont'd.	
<input checked="" type="checkbox"/> I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.	
<input type="checkbox"/> By Generator process knowledge, the following waste is not a listed waste and is below all TCLP regulatory limits.	
Certification Signature: <u>Richard Cruz</u>	Title: <u>Army BRAC Rep</u>
Company Name: <u>Fort Wingate Army Depot</u>	
Name (print): <u>Richard Cruz</u>	Date: <u>02/15/18</u>
FOR NWNMRSWA USE ONLY	
Management Method:	Approval Decision:
<input type="checkbox"/> Landfill	<input checked="" type="checkbox"/> Approved
<input type="checkbox"/> Bioremediation	<input type="checkbox"/> Not Approved
<input type="checkbox"/> Non-hazardous solidification	Waste Approval Expiration Date: <u>2-26-2019</u>
<input checked="" type="checkbox"/> Other: <u>STORE FOR USE AS ABC</u>	
Management Facility Precautions, Special Handling Procedures or Limitations on approval:	
<input checked="" type="checkbox"/> Shall not contain free liquid	
<input checked="" type="checkbox"/> Shipment must be scheduled into disposal facility	
<input type="checkbox"/> Approval Number must accompany each shipment	
<input checked="" type="checkbox"/> Waste Manifest must accompany load	
Authorization Name: <u>Henry Ford</u>	Date: <u>2-26-2018</u>
State Authorization (if required): _____	Date: _____



NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/14/2018

GCAL Report 218020825



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To

Emily McRee
Zapata Incorporated
6302 Fairview Rd
Suite 600
Charlotte, NC 28210

Additional Recipients

Katie Stout, Zapata Incorporated
Cindy Westergard, HSW Engineering





Report#: 218020825

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 02/14/2018

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218020825



Report#: 218020825

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/14/2018

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117



Report#: 218020825

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/14/2018

Case Narrative

Client: Zapata Incorporated **Report:** 218020825

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

PROJECT MANAGER COMMENTS

Per Katie Stout's email on 2/8/18, sample should be analyzed for TCLP Metals. (Amanda Cobb 02/08/2018 13:21)

METALS

In the EPA 1311/6020A analysis, sample 21802082501 (24A-WC01-C-SO) was prepped and analyzed at a dilution. The detection limits are at or below the regulatory limits at this dilution.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218020825

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/14/2018

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218020825

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/14/2018

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802082501	24A-WC01-C-SO	Solid	02/07/2018 11:30	02/08/2018 09:30



Report#: 218020825

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/14/2018

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802082501	24A-WC01-C-SO	S	EPA 1311/6020A TCLP
21802082501	24A-WC01-C-SO	S	EPA 6020A TCLP Prep
21802082501	24A-WC01-C-SO	S	EPA 7470A TCLP
21802082501	24A-WC01-C-SO	S	EPA 7470A TCLP Prep
21802082501	24A-WC01-C-SO	S	TCLP Procedure Soils



Report#: 218020825

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 02/14/2018

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218020825

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/14/2018

Summary of Compounds Detected

24A-WC01-C-SO	Collect Date	02/07/2018 11:30	GCAL ID	21802082501
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 1311/6020A

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-39-3	Barium	1.33	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.057J	0.025	0.050	0.10	mg/L



Report#: 218020825

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/14/2018

Sample Results

24A-WC01-C-SO	Collect Date	02/07/2018 11:30	GCAL ID	21802082501
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 1311/6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 08:40	628652	EPA 3010A	10	02/12/2018 18:01	AWG	628921

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	0.050U	0.025	0.050	0.10	mg/L
7440-39-3	Barium	1.33	0.025	0.050	0.10	mg/L
7440-43-9	Cadmium	0.050U	0.025	0.050	0.10	mg/L
7440-47-3	Chromium	0.050U	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.057J	0.025	0.050	0.10	mg/L
7782-49-2	Selenium	0.050U	0.025	0.050	0.10	mg/L
7440-22-4	Silver	0.050U	0.025	0.050	0.10	mg/L

EPA 1311/7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 09:00	628852	EPA 7470A	1	02/12/2018 17:02	LWZ	628892

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.00020U	0.000070	0.00020	0.0020	mg/L



Report#: 218020825

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/14/2018

Inorganics QC Summary

Analytical Batch 628892	Client ID GCAL ID	MB628852 1773899	LCS628852 1773900				
Prep Batch 628852	Sample Type Prep Date	MB 02/11/2018 09:00	LCS 02/11/2018 09:00				
Prep Method EPA 7470A	Analysis Date Matrix	02/12/2018 16:14 Water	02/12/2018 16:16 Water				
EPA 1311/7470A		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	0.00020U	0.00020	0.0050	0.0042	83	80 - 120

Analytical Batch 628921	Client ID GCAL ID	MB628652 1772571	LCS628652 1772572				
Prep Batch 628652	Sample Type Prep Date	MB 02/11/2018 08:40	LCS 02/11/2018 08:40				
Prep Method EPA 3010A	Analysis Date Matrix	02/12/2018 17:15 Water	02/12/2018 17:19 Water				
EPA 1311/6020A		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.00050U	0.00050	0.050	0.052	103	80 - 120
Barium	7440-39-3	0.00050U	0.00050	0.050	0.052	105	80 - 120
Cadmium	7440-43-9	0.00050U	0.00050	0.050	0.049	98	80 - 120
Chromium	7440-47-3	0.00050U	0.00050	0.050	0.053	105	80 - 120
Lead	7439-92-1	0.00050U	0.00050	0.050	0.051	103	80 - 120
Selenium	7782-49-2	0.00050U	0.00050	0.010	0.0098	98	80 - 120
Silver	7440-22-4	0.00050U	0.00050	0.050	0.049	98	80 - 120



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218020825
 PM: AEC

Report To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com		Bill To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com		Analytical Requests & Method Explosives (8330B) SW846 Chap 7/9012B 7/9034 9045D Paint Filter (9095) TCLP SVOCs (1311/8270D) TCLP RCRA 8 Metals (1311/6020A/7471) TCLP metals or just Pb, Hg, As (1311/6020/7471)						Custody Seal: Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temperature: 0.5 EZ9 35 CPM <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered								
P.O. Number: R20179-0005		Project Name/Number: FWDA Parcel 21, SWMU 1 and Parcel 24				Sampled By: Katie Stout												
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers												GCAL ID
S	02/07/18	925	x		2101B-WC16-C-SO	2	x	x	x	x	x							
S	02/07/18	940	x		2101B-WC17-C-SO	2	x	x	x	x	x							
S	02/07/18	1000	x		2101B-WC18-C-SO	2	x	x	x	x	x							
S	02/07/18	1015	x		2101B-WC19-C-SO	2	x	x	x	x	x							
*S	02/07/18	1130	x		24A-WC01-C-SO	2												-1
Airbill Number: 424405056563																		
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* _5_ Days <input type="checkbox"/> Standard (per contract/quote)																		
Relinquished by: (Signature) <i>Katie Stout</i>		Date/Time: 2/7/18 1530		Received by: (Signature) <i>Tiffany Jung</i>		Date/Time: 2-8-18		Notes: * only samples in W.O. TRS 02/08/18										
Relinquished by: (Signature) <i>FedEx</i>		Date/Time: 2-8-18		Received by: (Signature)		Date/Time: 2-8-18		COC 02072018A										

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218020825			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274917	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 2 - 5 BD Waste Igloo Drain	Receive Date(s) 02/08/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4244-0505-6563		0.5				
NOTES						

Revision 1.6

Page 1 of 1



NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 02/26/2018

GCAL Report 218021728



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To

Emily McRee
Zapata Incorporated
6302 Fairview Rd
Suite 600
Charlotte, NC 28210

Additional Recipients

Katie Stout, Zapata Incorporated
Cindy Westergard, HSW Engineering





Report#: 218021728

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 02/26/2018

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218021728



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117



Report#: 218021728

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 02/26/2018

Case Narrative

Client: Zapata Incorporated Report: 218021728

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

METALS

In the EPA 1311/6020A analysis for prep batch 629516, the MS/MSD recoveries are not applicable for TCLP Barium because the sample concentration is greater than four times the spike concentration. The MS and/or MSD recovery is above the upper control limit for TCLP Selenium. The concentration detected in the sample is not above the regulatory limit; therefore the data is reportable. The LCS recoveries are acceptable.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802172801	24A-WC03-C-SO	Solid	02/16/2018 14:00	02/17/2018 10:20
21802172802	24A-WC04-C-SO	Solid	02/16/2018 13:50	02/17/2018 10:20



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802172801	24A-WC03-C-SO	S	Sec. 7.3.3.2 Reactivity Prep
21802172801	24A-WC03-C-SO	S	Sec. 7.3.4.2 Reactivity Prep
21802172801	24A-WC03-C-SO	S	EPA 8330B Solid
21802172801	24A-WC03-C-SO	S	EPA 8330B Prep Solid
21802172801	24A-WC03-C-SO	S	EPA 9034 Reactivity Sulfide Solid
21802172801	24A-WC03-C-SO	S	EPA 9045 pH
21802172801	24A-WC03-C-SO	S	EPA 9095B
21802172801	24A-WC03-C-SO	S	EPA 9012A Reactivity Cyanide Solid
21802172801	24A-WC03-C-SO	S	EPA 1030
21802172801	24A-WC03-C-SO	S	EPA 1311/6020A TCLP
21802172801	24A-WC03-C-SO	S	EPA 6020A TCLP Prep
21802172801	24A-WC03-C-SO	S	EPA 7470A TCLP
21802172801	24A-WC03-C-SO	S	EPA 7470A TCLP Prep
21802172801	24A-WC03-C-SO	S	EPA 8270D TCLP
21802172801	24A-WC03-C-SO	S	EPA 3510D TCLP Prep
21802172801	24A-WC03-C-SO	S	TCLP Procedure Soils
21802172802	24A-WC04-C-SO	S	Sec. 7.3.3.2 Reactivity Prep
21802172802	24A-WC04-C-SO	S	Sec. 7.3.4.2 Reactivity Prep
21802172802	24A-WC04-C-SO	S	EPA 8330B Solid
21802172802	24A-WC04-C-SO	S	EPA 8330B Prep Solid
21802172802	24A-WC04-C-SO	S	EPA 9034 Reactivity Sulfide Solid
21802172802	24A-WC04-C-SO	S	EPA 9045 pH
21802172802	24A-WC04-C-SO	S	EPA 9095B
21802172802	24A-WC04-C-SO	S	EPA 9012A Reactivity Cyanide Solid
21802172802	24A-WC04-C-SO	S	EPA 1030
21802172802	24A-WC04-C-SO	S	EPA 1311/6020A TCLP
21802172802	24A-WC04-C-SO	S	EPA 6020A TCLP Prep
21802172802	24A-WC04-C-SO	S	EPA 7470A TCLP
21802172802	24A-WC04-C-SO	S	EPA 7470A TCLP Prep
21802172802	24A-WC04-C-SO	S	EPA 8270D TCLP
21802172802	24A-WC04-C-SO	S	EPA 3510D TCLP Prep
21802172802	24A-WC04-C-SO	S	TCLP Procedure Soils



Report#: 218021728

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 02/26/2018

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Summary of Compounds Detected

24A-WC03-C-SO	Collect Date	02/16/2018 14:00	GCAL ID	21802172801
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 1311/6020A

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-39-3	Barium	1.65	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.030J	0.025	0.050	0.10	mg/L

EPA 9045D

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.27	1.00	1.00	1.00	pH unit

24A-WC04-C-SO	Collect Date	02/16/2018 13:50	GCAL ID	21802172802
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 1311/6020A

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-39-3	Barium	1.78	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.080J	0.025	0.050	0.10	mg/L

EPA 9045D

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.46	1.00	1.00	1.00	pH unit

EPA 9095B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
WET-044	Paint Filter	FAI				Unitless



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Sample Results

24A-WC03-C-SO	Collect Date	02/16/2018 14:00	GCAL ID	21802172801
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 1311/8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/23/2018 09:30	629672	EPA 3510C	1	02/23/2018 12:28	DLB	629806

CAS#	Parameter	Result	DL	LOD	LOQ	Units
106-46-7	1,4-Dichlorobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-95-4	2,4,5-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
121-14-2	2,4-Dinitrotoluene	0.0050U	0.0025	0.0050	0.0100	mg/L
1319-77-3	Cresols	0.0100U	0.0050	0.0100	0.1000	mg/L
118-74-1	Hexachlorobenzene	0.0050U	0.0025	0.0050	0.0100	mg/L
87-68-3	Hexachlorobutadiene	0.0050U	0.0025	0.0050	0.0500	mg/L
67-72-1	Hexachloroethane	0.0050U	0.0025	0.0050	0.0500	mg/L
1319-77-3MP	m,p-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
98-95-3	Nitrobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-48-7	o-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
87-86-5	Pentachlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
110-86-1	Pyridine	0.0250U	0.0075	0.0250	0.0500	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	250	240	ug/L	96	44 - 120
321-60-8	2-Fluorobiphenyl	250	244	ug/L	98	44 - 119
1718-51-0	Terphenyl-d14	250	218	ug/L	87	50 - 134
4165-62-2	Phenol-d5	500	245	ug/L	49	10 - 123
367-12-4	2-Fluorophenol	500	361	ug/L	72	19 - 119
118-79-6	2,4,6-Tribromophenol	500	525	ug/L	105	43 - 140

EPA 1311/6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/20/2018 13:20	629516	EPA 3010A	10	02/21/2018 17:02	AWG	629612

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	0.050U	0.025	0.050	0.10	mg/L
7440-39-3	Barium	1.65	0.025	0.050	0.10	mg/L
7440-43-9	Cadmium	0.050U	0.025	0.050	0.10	mg/L
7440-47-3	Chromium	0.050U	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.030J	0.025	0.050	0.10	mg/L
7782-49-2	Selenium	0.050U	0.025	0.050	0.10	mg/L
7440-22-4	Silver	0.050U	0.025	0.050	0.10	mg/L



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Sample Results

24A-WC03-C-SO	Collect Date	02/16/2018 14:00	GCAL ID	21802172801
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 1311/7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/20/2018 13:20	629517	EPA 7470A	1	02/21/2018 12:39	LWZ	629583

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.00020U	0.000070	0.00020	0.0020	mg/L

EPA 1030

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	02/21/2018 15:30	DLS	629621

CAS#	Parameter	Result	DL	LOD	LOQ	Units
000000-01-7	Ignitable	NO	2	2	2	mm/sec

EPA 9012B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/21/2018 10:30	629509	EPA 7.3.3.2	1	02/22/2018 18:24	DLS	629762

CAS#	Parameter	Result	DL	LOD	LOQ	Units
57-12-5R	Reactivity Cyanide	250U	250	250	250	mg/kg

EPA 9034

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/20/2018 10:30	629510	EPA 7.3.4.2	1	02/22/2018 16:15	RYC	629726

CAS#	Parameter	Result	DL	LOD	LOQ	Units
18496-25-8R	Reactivity Sulfide	250U	250	250	250	mg/kg

EPA 9045D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	02/19/2018 16:15	PLH	629478

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.27	1.00	1.00	1.00	pH unit



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Sample Results

24A-WC03-C-SO	Collect Date	02/16/2018 14:00	GCAL ID	21802172801
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	02/21/2018 15:03	JEM	629622

CAS#	Parameter	Result	DL	LOD	LOQ	Units
WET-044	Paint Filter	PASS				Unitless

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/22/2018 18:26	629728	EPA 8330B	1	02/26/2018 09:02	DLB	629917

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	0.099U	0.042	0.099	0.198	mg/kg
99-65-0	1,3-Dinitrobenzene	0.099U	0.076	0.099	0.198	mg/kg
118-96-7	2,4,6-Trinitrotoluene	0.099U	0.050	0.099	0.198	mg/kg
121-14-2	2,4-Dinitrotoluene	0.099U	0.098	0.099	0.198	mg/kg
606-20-2	2,6-Dinitrotoluene	0.099U	0.060	0.099	0.198	mg/kg
35572-78-2	2-Amino-4,6-dinitrotoluene	0.099U	0.097	0.099	0.198	mg/kg
88-72-2	2-Nitrotoluene	0.099U	0.063	0.099	0.198	mg/kg
618-87-1	3,5-Dinitroaniline	0.099U	0.082	0.099	0.198	mg/kg
99-08-1	3-Nitrotoluene	0.149U	0.124	0.149	0.198	mg/kg
19406-51-0	4-Amino-2,6-dinitrotoluene	0.099U	0.076	0.099	0.198	mg/kg
99-99-0	4-Nitrotoluene	0.099U	0.076	0.099	0.198	mg/kg
2691-41-0	HMX	0.099U	0.026	0.099	0.198	mg/kg
98-95-3	Nitrobenzene	0.099U	0.036	0.099	0.198	mg/kg
55-63-0	Nitroglycerin	0.099U	0.073	0.099	0.198	mg/kg
78-11-5	Pentaerythritol Tetranitrate	0.149U	0.121	0.149	0.198	mg/kg
121-82-4	RDX	0.099U	0.018	0.099	0.198	mg/kg
479-45-8	Tetryl	0.099U	0.041	0.099	0.198	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
528-29-0	1,2-Dinitrobenzene	990	1170	ug/Kg	118	78 - 119

24A-WC04-C-SO	Collect Date	02/16/2018 13:50	GCAL ID	21802172802
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 1311/8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/23/2018 09:30	629672	EPA 3510C	1	02/23/2018 12:44	DLB	629806

CAS#	Parameter	Result	DL	LOD	LOQ	Units
106-46-7	1,4-Dichlorobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Sample Results

24A-WC04-C-SO	Collect Date	02/16/2018 13:50	GCAL ID	21802172802
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 1311/8270D (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/23/2018 09:30	629672	EPA 3510C	1	02/23/2018 12:44	DLB	629806

CAS#	Parameter	Result	DL	LOD	LOQ	Units
95-95-4	2,4,5-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
121-14-2	2,4-Dinitrotoluene	0.0050U	0.0025	0.0050	0.0100	mg/L
1319-77-3	Cresols	0.0100U	0.0050	0.0100	0.1000	mg/L
118-74-1	Hexachlorobenzene	0.0050U	0.0025	0.0050	0.0100	mg/L
87-68-3	Hexachlorobutadiene	0.0050U	0.0025	0.0050	0.0500	mg/L
67-72-1	Hexachloroethane	0.0050U	0.0025	0.0050	0.0500	mg/L
1319-77-3MP	m,p-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
98-95-3	Nitrobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-48-7	o-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
87-86-5	Pentachlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
110-86-1	Pyridine	0.0250U	0.0075	0.0250	0.0500	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	250	247	ug/L	99	44 - 120
321-60-8	2-Fluorobiphenyl	250	244	ug/L	98	44 - 119
1718-51-0	Terphenyl-d14	250	237	ug/L	95	50 - 134
4165-62-2	Phenol-d5	500	231	ug/L	46	10 - 123
367-12-4	2-Fluorophenol	500	366	ug/L	73	19 - 119
118-79-6	2,4,6-Tribromophenol	500	486	ug/L	97	43 - 140

EPA 1311/6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/20/2018 13:20	629516	EPA 3010A	10	02/21/2018 17:24	AWG	629612

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	0.050U	0.025	0.050	0.10	mg/L
7440-39-3	Barium	1.78	0.025	0.050	0.10	mg/L
7440-43-9	Cadmium	0.050U	0.025	0.050	0.10	mg/L
7440-47-3	Chromium	0.050U	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.080J	0.025	0.050	0.10	mg/L
7782-49-2	Selenium	0.050U	0.025	0.050	0.10	mg/L
7440-22-4	Silver	0.050U	0.025	0.050	0.10	mg/L



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Sample Results

24A-WC04-C-SO	Collect Date	02/16/2018 13:50	GCAL ID	21802172802
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 1311/7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/20/2018 13:20	629517	EPA 7470A	1	02/21/2018 12:47	LWZ	629583

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.00020U	0.000070	0.00020	0.0020	mg/L

EPA 1030

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	02/21/2018 15:30	DLS	629621

CAS#	Parameter	Result	DL	LOD	LOQ	Units
000000-01-7	Ignitable	NO	2	2	2	mm/sec

EPA 9012B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/21/2018 10:30	629509	EPA 7.3.3.2	1	02/22/2018 18:26	DLS	629762

CAS#	Parameter	Result	DL	LOD	LOQ	Units
57-12-5R	Reactivity Cyanide	250U	250	250	250	mg/kg

EPA 9034

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/20/2018 10:30	629510	EPA 7.3.4.2	1	02/22/2018 16:15	RYC	629726

CAS#	Parameter	Result	DL	LOD	LOQ	Units
18496-25-8R	Reactivity Sulfide	250U	250	250	250	mg/kg

EPA 9045D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	02/19/2018 16:15	PLH	629478

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.46	1.00	1.00	1.00	pH unit



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Sample Results

24A-WC04-C-SO	Collect Date	02/16/2018 13:50	GCAL ID	21802172802
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	02/21/2018 15:03	JEM	629622

CAS#	Parameter	Result	DL	LOD	LOQ	Units
WET-044	Paint Filter	FAI				Unitless

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/22/2018 18:26	629728	EPA 8330B	1	02/26/2018 10:03	DLB	629917

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	0.100U	0.042	0.100	0.200	mg/kg
99-65-0	1,3-Dinitrobenzene	0.100U	0.077	0.100	0.200	mg/kg
118-96-7	2,4,6-Trinitrotoluene	0.100U	0.051	0.100	0.200	mg/kg
121-14-2	2,4-Dinitrotoluene	0.100U	0.099	0.100	0.200	mg/kg
606-20-2	2,6-Dinitrotoluene	0.100U	0.061	0.100	0.200	mg/kg
35572-78-2	2-Amino-4,6-dinitrotoluene	0.100U	0.098	0.100	0.200	mg/kg
88-72-2	2-Nitrotoluene	0.100U	0.064	0.100	0.200	mg/kg
618-87-1	3,5-Dinitroaniline	0.100U	0.083	0.100	0.200	mg/kg
99-08-1	3-Nitrotoluene	0.150U	0.125	0.150	0.200	mg/kg
19406-51-0	4-Amino-2,6-dinitrotoluene	0.100U	0.077	0.100	0.200	mg/kg
99-99-0	4-Nitrotoluene	0.100U	0.077	0.100	0.200	mg/kg
2691-41-0	HMX	0.100U	0.026	0.100	0.200	mg/kg
98-95-3	Nitrobenzene	0.100U	0.036	0.100	0.200	mg/kg
55-63-0	Nitroglycerin	0.100U	0.074	0.100	0.200	mg/kg
78-11-5	Pentaerythritol Tetranitrate	0.150U	0.122	0.150	0.200	mg/kg
121-82-4	RDX	0.100U	0.018	0.100	0.200	mg/kg
479-45-8	Tetryl	0.100U	0.041	0.100	0.200	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
528-29-0	1,2-Dinitrobenzene	1000	1170	ug/Kg	117	78 - 119



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

GC/MS Semi-Volatiles QC Summary

Analytical Batch		Client ID	MB629672		LCS629672			LCSD629672				
629806		GCAL ID	1777943		1777944			1777945				
Prep Batch		Sample Type	MB		LCS			LCSD				
629672		Prep Date	02/23/2018 09:30		02/23/2018 09:30			02/23/2018 09:30				
Prep Method		Analysis Date	02/23/2018 11:39		02/23/2018 11:55			02/23/2018 12:12				
EPA 3510C		Matrix	Water		Water			Water				
EPA 1311/8270D		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,4-Dichlorobenzene	106-46-7	0.0050U	0.0050	0.050	0.036	73	29 - 112	0.050	0.038	75	3	30
2,4,5-Trichlorophenol	95-95-4	0.0050U	0.0050	0.050	0.053	105	53 - 123	0.050	0.050	100	5	30
2,4,6-Trichlorophenol	88-06-2	0.0050U	0.0050	0.050	0.053	105	50 - 125	0.050	0.050	101	5	30
2,4-Dinitrotoluene	121-14-2	0.0050U	0.0050	0.050	0.051	101	57 - 128	0.050	0.048	95	6	30
Cresols	1319-77-3	0.0100U	0.0100	0.100	0.086	86	24 - 125	0.100	0.082	82	4	30
Hexachlorobenzene	118-74-1	0.0050U	0.0050	0.050	0.054	107	53 - 125	0.050	0.049	97	10	30
Hexachlorobutadiene	87-68-3	0.0050U	0.0050	0.050	0.037	74	22 - 124	0.050	0.040	80	7	30
Hexachloroethane	67-72-1	0.0050U	0.0050	0.050	0.035	69	21 - 115	0.050	0.036	73	5	30
m,p-Cresol	1319-77-3MP	0.0050U	0.0050	0.050	0.041	82	29 - 110	0.050	0.039	79	4	30
Nitrobenzene	98-95-3	0.0050U	0.0050	0.050	0.053	106	45 - 121	0.050	0.049	98	8	30
o-Cresol	95-48-7	0.0050U	0.0050	0.050	0.044	89	30 - 117	0.050	0.043	85	4	30
Pentachlorophenol	87-86-5	0.0050U	0.0050	0.050	0.055	110	35 - 138	0.050	0.053	107	3	30
Pyridine	110-86-1	0.0250U	0.0250	0.050	0.037	75	10 - 120	0.050	0.039	78	4	30
Surrogate												
2,4,6-Tribromophenol	118-79-6	.0969	97	.1	.105	105	43 - 140	.1	.097	97	NA	NA
2-Fluorobiphenyl	321-60-8	.0435	87	.05	.049	98	44 - 119	.05	.048	96	NA	NA
2-Fluorophenol	367-12-4	.0711	71	.1	.0758	76	19 - 119	.1	.0735	74	NA	NA
Nitrobenzene-d5	4165-60-0	.0443	89	.05	.05	100	44 - 120	.05	.0488	98	NA	NA
Phenol-d5	4165-62-2	.046	46	.1	.0479	48	10 - 123	.1	.0472	47	NA	NA
Terphenyl-d14	1718-51-0	.0429	86	.05	.0452	90	50 - 134	.05	.0433	87	NA	NA

Analytical Batch		Client ID	24A-WC03-C-SO		1776602MS		
629806		GCAL ID	21802172801		1778525		
Prep Batch		Sample Type	SAMPLE		MS		
629672		Prep Date	02/23/2018 09:30		02/23/2018 09:30		
Prep Method		Analysis Date	02/23/2018 12:28		02/23/2018 13:01		
EPA 3510C		Matrix	Solid		Solid		
EPA 1311/8270D		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R
1,4-Dichlorobenzene	106-46-7	0.00	0.0250	0.250	0.212	85	29 - 112
2,4,5-Trichlorophenol	95-95-4	0.00	0.0250	0.250	0.244	98	53 - 123
2,4,6-Trichlorophenol	88-06-2	0.00	0.0250	0.250	0.248	99	50 - 125
2,4-Dinitrotoluene	121-14-2	0.00	0.0250	0.250	0.239	96	57 - 128
Cresols	1319-77-3	0.00	0.0500	0.500	0.391	78	24 - 125
Hexachlorobenzene	118-74-1	0.00	0.0250	0.250	0.250	100	53 - 125
Hexachlorobutadiene	87-68-3	0.00	0.0250	0.250	0.231	92	22 - 124
Hexachloroethane	67-72-1	0.00	0.0250	0.250	0.207	83	21 - 115
m,p-Cresol	1319-77-3MP	0.00	0.0250	0.250	0.192	77	29 - 110
Nitrobenzene	98-95-3	0.00	0.0250	0.250	0.248	99	45 - 121
o-Cresol	95-48-7	0.00	0.0250	0.250	0.199	80	30 - 117
Pentachlorophenol	87-86-5	0.00	0.0250	0.250	0.265	106	35 - 138
Pyridine	110-86-1	0.00	0.1250	0.250	0.162	65	10 - 120
Surrogate							
2,4,6-Tribromophenol	118-79-6	.525	105	.5	.488	98	43 - 140
2-Fluorobiphenyl	321-60-8	.244	98	.25	.232	93	44 - 119
2-Fluorophenol	367-12-4	.361	72	.5	.322	64	19 - 119
Nitrobenzene-d5	4165-60-0	.24	96	.25	.231	92	44 - 120
Phenol-d5	4165-62-2	.245	49	.5	.206	41	10 - 123
Terphenyl-d14	1718-51-0	.218	87	.25	.212	85	50 - 134



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

Inorganics QC Summary

Analytical Batch 629583	Client ID GCAL ID	MB629517 1777162	LCS629517 1777163			
Prep Batch 629517	Sample Type Prep Date	MB 02/20/2018 13:20	LCS 02/20/2018 13:20			
Prep Method EPA 7470A	Analysis Date Matrix	02/21/2018 12:31 Water	02/21/2018 12:33 Water			
EPA 1311/7470A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	0.00020U	0.00020	0.0050	0.0046	93 80 - 120

Analytical Batch 629583	Client ID GCAL ID	24A-WC03-C-SO 21802172801	1776602MS 1777165			
Prep Batch 629517	Sample Type Prep Date	SAMPLE 02/20/2018 13:20	MS 02/20/2018 13:20			
Prep Method EPA 7470A	Analysis Date Matrix	02/21/2018 12:39 Solid	02/21/2018 12:45 Solid			
EPA 1311/7470A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	0.0	0.00020	0.0050	0.0048	95 80 - 120

Analytical Batch 629612	Client ID GCAL ID	MB629516 1777154	LCS629516 1777155			
Prep Batch 629516	Sample Type Prep Date	MB 02/20/2018 13:20	LCS 02/20/2018 13:20			
Prep Method EPA 3010A	Analysis Date Matrix	02/21/2018 16:44 Water	02/21/2018 16:48 Water			
EPA 1311/6020A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R
Arsenic	7440-38-2	0.00050U	0.00050	0.050	0.052	105 80 - 120
Barium	7440-39-3	0.00050U	0.00050	0.050	0.051	101 80 - 120
Cadmium	7440-43-9	0.00050U	0.00050	0.050	0.050	101 80 - 120
Chromium	7440-47-3	0.00050U	0.00050	0.050	0.051	103 80 - 120
Lead	7439-92-1	0.00050U	0.00050	0.050	0.049	99 80 - 120
Selenium	7782-49-2	0.00050U	0.00050	0.010	0.011	111 80 - 120
Silver	7440-22-4	0.00050U	0.00050	0.050	0.051	101 80 - 120

Analytical Batch 629612	Client ID GCAL ID	24A-WC03-C-SO 21802172801	1776602MS 1777157		1776602MSD 1777158							
Prep Batch 629516	Sample Type Prep Date	SAMPLE 02/20/2018 13:20	MS 02/20/2018 13:20		MSD 02/20/2018 13:20							
Prep Method EPA 3010A	Analysis Date Matrix	02/21/2018 17:02 Water	02/21/2018 17:06 Water		02/21/2018 17:10 Water							
EPA 1311/6020A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit		
Arsenic	7440-38-2	0.0	0.050	0.50	0.51	103	80 - 120	0.50	0.50	99	4	20
Barium	7440-39-3	1.65	0.050	0.50	2.03	77*	80 - 120	0.50	2.05	81	1	20
Cadmium	7440-43-9	0.0	0.050	0.50	0.50	100	80 - 120	0.50	0.50	100	0	20
Chromium	7440-47-3	0.00091	0.050	0.50	0.49	98	80 - 120	0.50	0.50	100	2	20
Lead	7439-92-1	0.030	0.050	0.50	0.51	96	80 - 120	0.50	0.52	98	2	20
Selenium	7782-49-2	0.0089	0.050	0.10	0.12	108	80 - 120	0.10	0.13	124*	13	20
Silver	7440-22-4	0.000068	0.050	0.50	0.50	100	80 - 120	0.50	0.51	103	2	20



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

General Chemistry QC Summary

Analytical Batch 629726	Client ID GCAL ID	MB629510 1777139	LCS629510 1777140				
Prep Batch 629510	Sample Type	MB	LCS				
Prep Method EPA 7.3.4.2	Prep Date	02/20/2018 10:30	02/20/2018 10:30				
	Analysis Date	02/22/2018 16:15	02/22/2018 16:15				
	Matrix	Solid	Solid				
EPA 9034		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Reactivity Sulfide	18496-25-8R	250U	250	1000	1114	111	47 - 135

Analytical Batch 629478	Client ID GCAL ID	24A-WC03-C-SO 21802172801	1776602DUP 1776997				
	Sample Type	SAMPLE	DUP				
	Prep Date	NA	NA				
	Analysis Date	02/19/2018 16:15	02/19/2018 16:15				
	Matrix	Solid	Solid				
EPA 9045D		Units Result	pH unit LOD	Result	RPD	RPD Limit	
pH	pH	8.27	1.00	8.29	0	6	

Analytical Batch 629762	Client ID GCAL ID	MB629509 1777136	LCS629509 1777137				
Prep Batch 629509	Sample Type	MB	LCS				
Prep Method EPA 7.3.3.2	Prep Date	02/21/2018 10:30	02/21/2018 10:30				
	Analysis Date	02/22/2018 16:09	02/22/2018 16:12				
	Matrix	Solid	Solid				
EPA 9012B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Reactivity Cyanide	57-12-5R	250U	250	250	4.7	2	1 - 25



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

General Chromatography QC Summary

Analytical Batch		Client ID	LCS629728		LCS629728		LCS629728		LCS629728		LCS629728	
629917		MB629728	1778307		1778307		1778308		1778308		1778308	
Prep Batch		Sample Type	LCS		LCS		LCS		LCS		LCS	
629728		MB	02/22/2018 18:26		02/22/2018 18:26		02/22/2018 18:26		02/22/2018 18:26		02/22/2018 18:26	
Prep Method		Analysis Date	02/26/2018 11:03		02/26/2018 08:22		02/26/2018 08:22		02/26/2018 08:22		02/26/2018 08:22	
EPA 8330B		Matrix	Solid		Solid		Solid		Solid		Solid	
EPA 8330B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,3,5-Trinitrobenzene	99-35-4	0.100U	0.100	1.00	1.13	113	80 - 116	1.00	1.07	107	5	20
1,3-Dinitrobenzene	99-65-0	0.100U	0.100	1.00	1.19	119	73 - 119	1.00	1.19	119	0	20
2,4,6-Trinitrotoluene	118-96-7	0.100U	0.100	1.00	1.02	102	71 - 120	1.00	0.911	91	12	20
2,4-Dinitrotoluene	121-14-2	0.100U	0.100	1.00	1.13	113	75 - 121	1.00	1.08	108	5	20
2,6-Dinitrotoluene	606-20-2	0.100U	0.100	1.00	1.02	102	79 - 117	1.00	1.12	112	10	20
2-Amino-4,6-dinitrotoluene	35572-78-2	0.100U	0.100	1.00	1.02	102	71 - 123	1.00	1.08	108	6	20
2-Nitrotoluene	88-72-2	0.100U	0.100	1.00	1.06	106	70 - 124	1.00	1.04	104	2	20
3,5-Dinitroaniline	618-87-1	0.100U	0.100	1.00	1.09	109	86 - 118	1.00	0.993	99	9	20
3-Nitrotoluene	99-08-1	0.150U	0.150	1.00	1.05	105	67 - 129	1.00	0.984	98	6	20
4-Amino-2,6-dinitrotoluene	19406-51-0	0.100U	0.100	1.00	1.16	116	64 - 127	1.00	1.11	111	4	20
4-Nitrotoluene	99-99-0	0.100U	0.100	1.00	1.10	110	71 - 124	1.00	1.11	111	0	20
HMX	2691-41-0	0.100U	0.100	1.00	1.01	101	74 - 124	1.00	0.995	99	1	20
Nitrobenzene	98-95-3	0.100U	0.100	1.00	1.16	116	67 - 129	1.00	1.05	105	10	20
Nitroglycerin	55-63-0	0.100U	0.100	1.00	1.09	109	73 - 124	1.00	1.07	107	2	20
Pentaerythritol Tetranitrate	78-11-5	0.150U	0.150	1.00	0.995	99	72 - 128	1.00	1.02	102	2	20
RDX	121-82-4	0.100U	0.100	1.00	1.17	117	67 - 129	1.00	1.01	101	15	20
Tetryl	479-45-8	0.100U	0.100	1.00	1.00	100	68 - 135	1.00	0.923	92	8	20
Surrogate												
1,2-Dinitrobenzene	528-29-0	1.1	110	1	.973	97	78 - 119	1	1.04	104	NA	NA

Analytical Batch		Client ID	1776602MS		1776602MS		1776602MS		1776602MS		1776602MS	
629917		24A-WC03-C-SO	1778309		1778309		1778310		1778310		1778310	
Prep Batch		Sample Type	MS		MS		MS		MS		MS	
629728		SAMPLE	02/22/2018 18:26		02/22/2018 18:26		02/22/2018 18:26		02/22/2018 18:26		02/22/2018 18:26	
Prep Method		Analysis Date	02/26/2018 09:02		02/26/2018 09:22		02/26/2018 09:22		02/26/2018 09:43		02/26/2018 09:43	
EPA 8330B		Matrix	Solid		Solid		Solid		Solid		Solid	
EPA 8330B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,3,5-Trinitrobenzene	99-35-4	0.00	0.095	0.952	1.11	116	80 - 116	0.990	1.14	115	3	20
1,3-Dinitrobenzene	99-65-0	0.00	0.095	0.952	1.02	107	73 - 119	0.990	1.07	108	5	20
2,4,6-Trinitrotoluene	118-96-7	0.00	0.095	0.952	0.995	104	71 - 120	0.990	1.04	105	4	20
2,4-Dinitrotoluene	121-14-2	0.00	0.095	0.952	1.06	112	75 - 121	0.990	1.12	113	5	20
2,6-Dinitrotoluene	606-20-2	0.00	0.095	0.952	0.967	102	79 - 117	0.990	1.11	112	14	20
2-Amino-4,6-dinitrotoluene	35572-78-2	0.00	0.095	0.952	0.965	101	71 - 123	0.990	1.12	113	15	20
2-Nitrotoluene	88-72-2	0.00	0.095	0.952	1.04	109	70 - 124	0.990	0.904	91	14	20
3,5-Dinitroaniline	618-87-1	0.00	0.095	0.952	1.08	113	86 - 118	0.990	1.08	109	1	20
3-Nitrotoluene	99-08-1	0.00	0.143	0.952	0.900	95	67 - 129	0.990	0.916	93	2	20
4-Amino-2,6-dinitrotoluene	19406-51-0	0.00	0.095	0.952	0.978	103	64 - 127	0.990	1.09	110	11	20
4-Nitrotoluene	99-99-0	0.00	0.095	0.952	1.07	112	71 - 124	0.990	1.01	102	6	20
HMX	2691-41-0	0.00	0.095	0.952	0.947	99	74 - 124	0.990	0.952	96	1	20
Nitrobenzene	98-95-3	0.00	0.095	0.952	1.09	114	67 - 129	0.990	1.15	116	5	20
Nitroglycerin	55-63-0	0.00	0.095	0.952	1.04	109	73 - 124	0.990	0.921	93	12	20
Pentaerythritol Tetranitrate	78-11-5	0.00	0.143	0.952	0.818	86	72 - 128	0.990	0.904	91	10	20
RDX	121-82-4	0.00	0.095	0.952	0.916	96	67 - 129	0.990	1.04	105	13	20
Tetryl	479-45-8	0.00	0.095	0.952	0.814	85	68 - 135	0.990	0.910	92	11	20
Surrogate												
1,2-Dinitrobenzene	528-29-0	1.17	118	.952	.981	103	78 - 119	.99	1.05	106	NA	NA



Report#: 218021728

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 02/26/2018

EPA 8330B Replicate Summary

Report No: <u>218021728</u>	Parent Sample ID: <u>24A-WC04-C-SO</u>
Prep Method: <u>EPA 8330B</u>	Parent GCAL ID: <u>21802172802</u>
Prep Date: <u>2/22/2018 6:26:00 PM</u>	Prep Batch: <u>629728</u>
Analytical Method: <u>EPA 8330B</u>	

ANALYTE	CAS	UNITS	PARENT RESULT	REP #1 RESULT (1778311)	REP #2 RESULT (1778312)	%RSD	#
1,3,5-Trinitrobenzene	99-35-4	mg/kg	0	0	0	0	
1,3-Dinitrobenzene	99-65-0	mg/kg	0	0	0	0	
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0	0	0	0	
2,4-Dinitrotoluene	121-14-2	mg/kg	0	0	0	0	
2,6-Dinitrotoluene	606-20-2	mg/kg	0	0	0	0	
2-Amino-4,6-dinitrotoluene	35572-78-2	mg/kg	0	0	0	0	
2-Nitrotoluene	88-72-2	mg/kg	0	0	0	0	
3,5-Dinitroaniline	618-87-1	mg/kg	0	0	0	0	
3-Nitrotoluene	99-08-1	mg/kg	0	0	0	0	
4-Amino-2,6-dinitrotoluene	19406-51-0	mg/kg	0	0	0	0	
4-Nitrotoluene	99-99-0	mg/kg	0	0	0	0	
HMX	2691-41-0	mg/kg	0	0	0	0	
Nitrobenzene	98-95-3	mg/kg	0	0	0	0	
Nitroglycerin	55-63-0	mg/kg	0	0	0	0	
Pentaerythritol Tetranitrate	78-11-5	mg/kg	0	0	0	0	
RDX	121-82-4	mg/kg	0	0	0	0	
Tetryl	479-45-8	mg/kg	0	0	0	0	

* - RSD greater than 20%



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218021728
 PM: AEC



Report To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com		Bill To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com		Analytical Requests & Method TCLP SVOCs Paint Filter Ignitibility/Corrosivity/Reactivity Explosives TCLP RCRA metals				Custody Seal: Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temperature: 24.0 PM, 1.1 E29						
P.O. Number: R20179-0005 Sampled By: Emma Baghel		Project Name/Number: FWDA Parcel 21, SWMU 1 and Parcel 24						<input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered						
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers							← Preservative / Notes ↓	GCAL ID
S	2/16/2018	1400	X		24A-WC03-C-SO	2	X	X	X	X	X			-1
S	2/16/2018	1350	X		24A-WC04-C-SO	2	X	X	X	X	X			-2
Airbill Number: 7715-0590-1260 Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* _5_ Days <input type="checkbox"/> Standard (per contract/quote)														
Relinquished by: (Signature)		Date/Time:	Received by: (Signature)		Date/Time:	Notes:								
FedEx		02-17-18	Tubing		02-17-18									
Relinquished by: (Signature)		Date/Time:	Received by: (Signature)		Date/Time:	COC 02142018								

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218021728			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274917	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 4 - Waste/TCLP 5 Day	Receive Date(s) 02/17/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
7715-0590-1260		1.1				
NOTES						

Revision 1.6

Page 1 of 1



NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 03/12/2018

GCAL Report 218030716



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To

Emily McRee
Zapata Incorporated
6302 Fairview Rd
Suite 600
Charlotte, NC 28210

Additional Recipients

Katie Stout, Zapata Incorporated
Cindy Westergard, HSW Engineering





Report#: 218030716

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 03/12/2018

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218030716



Report#: 218030716

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/12/2018

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117



Report#: 218030716

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 03/12/2018

Case Narrative

Client: Zapata Incorporated **Report:** 218030716

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218030716

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/12/2018

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218030716

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/12/2018

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21803071601	24A-WC04-C-SO2	Solid	03/05/2018 11:35	03/07/2018 10:00
21803071602	2101B-WC25-C-SO2	Solid	03/05/2018 15:20	03/07/2018 10:00



Report#: 218030716

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 03/12/2018

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21803071601	24A-WC04-C-SO2	S	EPA 9095B
21803071602	2101B-WC25-C-SO2	S	EPA 9095B



Report#: 218030716

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/12/2018

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218030716

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/12/2018

Summary of Compounds Detected

No analytes were detected for analyses performed by GCAL.



Report#: 218030716

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/12/2018

Sample Results

24A-WC04-C-SO2	Collect Date	03/05/2018 11:35	GCAL ID	21803071601
	Receive Date	03/07/2018 10:00	Matrix	Solid

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch			
NA	NA	NA	1	03/12/2018 11:25	JEM	630949			
CAS#	Parameter			Result	DL	LOD	LOQ	Units	
WET-044	Paint Filter			PASS				Unitless	

2101B-WC25-C-SO2	Collect Date	03/05/2018 15:20	GCAL ID	21803071602
	Receive Date	03/07/2018 10:00	Matrix	Solid

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch			
NA	NA	NA	1	03/12/2018 11:25	JEM	630949			
CAS#	Parameter			Result	DL	LOD	LOQ	Units	
WET-044	Paint Filter			PASS				Unitless	

SAMPLE DELIVERY GROUP 218030716			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 275212	Received By Reese, Sean M		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 2 - Waste/TCLP 5 Day	Receive Date(s) 03/07/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4244 0505 9665		0.1				
NOTES						

Revision 1.6

Page 1 of 1



NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 03/21/2018

GCAL Report 218031318



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To

Emily McRee
Zapata Incorporated
6302 Fairview Rd
Suite 600
Charlotte, NC 28210

Additional Recipients

Cindy Westergard, HSW Engineering
Katie Stout, Zapata Incorporated





Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218031318



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Case Narrative

Client: Zapata Incorporated **Report:** 218031318

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

PROJECT MANAGER COMMENTS

Sample logged in per revised COC received on 3/13/18 from Emily McRee. (Amanda Cobb 03/13/2018 12:34)

METALS

In the EPA 1311/6020A analysis for prep batch 631155, Barium was detected in the method blank. The concentration is < 10% the concentration in the associated sample(s).

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21803131801	24A-WC05-C-S0	Solid	03/12/2018 14:14	03/13/2018 10:10



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21803131801	24A-WC05-C-S0	S	Sec. 7.3.3.2 Reactivity Prep
21803131801	24A-WC05-C-S0	S	Sec. 7.3.4.2 Reactivity Prep
21803131801	24A-WC05-C-S0	S	EPA 8330B Solid
21803131801	24A-WC05-C-S0	S	EPA 8330B Prep Solid
21803131801	24A-WC05-C-S0	S	EPA 9034 Reactivity Sulfide Solid
21803131801	24A-WC05-C-S0	S	EPA 9045 pH
21803131801	24A-WC05-C-S0	S	EPA 9095B
21803131801	24A-WC05-C-S0	S	EPA 9012A Reactivity Cyanide Solid
21803131801	24A-WC05-C-S0	S	EPA 1030
21803131801	24A-WC05-C-S0	S	EPA 1311/6020A TCLP
21803131801	24A-WC05-C-S0	S	EPA 6020A TCLP Prep
21803131801	24A-WC05-C-S0	S	EPA 7470A TCLP
21803131801	24A-WC05-C-S0	S	EPA 7470A TCLP Prep
21803131801	24A-WC05-C-S0	S	EPA 8270D TCLP
21803131801	24A-WC05-C-S0	S	EPA 3510D TCLP Prep
21803131801	24A-WC05-C-S0	S	TCLP Procedure Soils



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Summary of Compounds Detected

24A-WC05-C-S0	Collect Date	03/12/2018 14:14	GCAL ID	21803131801
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 1311/6020A

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-39-3	Barium	1.69	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.032J	0.025	0.050	0.10	mg/L

EPA 9045D

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.50	1.00	1.00	1.00	pH unit



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Sample Results

24A-WC05-C-S0	Collect Date	03/12/2018 14:14	GCAL ID	21803131801
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 1311/8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/15/2018 11:20	631242	EPA 3510C	1	03/16/2018 13:10	DLB	631367

CAS#	Parameter	Result	DL	LOD	LOQ	Units
106-46-7	1,4-Dichlorobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-95-4	2,4,5-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
121-14-2	2,4-Dinitrotoluene	0.0050U	0.0025	0.0050	0.0100	mg/L
1319-77-3	Cresols	0.0100U	0.0050	0.0100	0.1000	mg/L
118-74-1	Hexachlorobenzene	0.0050U	0.0025	0.0050	0.0100	mg/L
87-68-3	Hexachlorobutadiene	0.0050U	0.0025	0.0050	0.0500	mg/L
67-72-1	Hexachloroethane	0.0050U	0.0025	0.0050	0.0500	mg/L
1319-77-3MP	m,p-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
98-95-3	Nitrobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-48-7	o-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
87-86-5	Pentachlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
110-86-1	Pyridine	0.0250U	0.0075	0.0250	0.0500	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	250	241	ug/L	96	44 - 120
321-60-8	2-Fluorobiphenyl	250	234	ug/L	94	44 - 119
1718-51-0	Terphenyl-d14	250	210	ug/L	84	50 - 134
4165-62-2	Phenol-d5	500	177	ug/L	35	10 - 123
367-12-4	2-Fluorophenol	500	301	ug/L	60	19 - 119
118-79-6	2,4,6-Tribromophenol	500	537	ug/L	107	43 - 140

EPA 1311/6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/14/2018 15:10	631155	EPA 3010A	10	03/20/2018 13:29	AWG	631586

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	0.050U	0.025	0.050	0.10	mg/L
7440-39-3	Barium	1.69	0.025	0.050	0.10	mg/L
7440-43-9	Cadmium	0.050U	0.025	0.050	0.10	mg/L
7440-47-3	Chromium	0.050U	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.032J	0.025	0.050	0.10	mg/L
7782-49-2	Selenium	0.050U	0.025	0.050	0.10	mg/L
7440-22-4	Silver	0.050U	0.025	0.050	0.10	mg/L



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Sample Results

24A-WC05-C-S0	Collect Date	03/12/2018 14:14	GCAL ID	21803131801
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 1311/7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/14/2018 15:10	631156	EPA 7470A	1	03/20/2018 09:00	AWG	631466

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.00020U	0.000070	0.00020	0.0020	mg/L

EPA 1030

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	03/19/2018 14:30	AJE	631476

CAS#	Parameter	Result	DL	LOD	LOQ	Units
000000-01-7	Ignitable	NO	2	2	2	mm/sec

EPA 9012B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/14/2018 15:30	631118	EPA 7.3.3.2	1	03/16/2018 16:37	JEM	631351

CAS#	Parameter	Result	DL	LOD	LOQ	Units
57-12-5R	Reactivity Cyanide	250U	250	250	250	mg/kg

EPA 9034

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/19/2018 13:05	631449	EPA 7.3.4.2	1	03/20/2018 16:15	JEM	631598

CAS#	Parameter	Result	DL	LOD	LOQ	Units
18496-25-8R	Reactivity Sulfide	250U	250	250	250	mg/kg

EPA 9045D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	03/16/2018 16:14	SLL2	631318

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.50	1.00	1.00	1.00	pH unit



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Sample Results

24A-WC05-C-S0	Collect Date	03/12/2018 14:14	GCAL ID	21803131801
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	03/19/2018 17:33	AJE	631497

CAS#	Parameter	Result	DL	LOD	LOQ	Units
WET-044	Paint Filter	PASS				Unitless

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/15/2018 19:27	631279	EPA 8330B	1	03/20/2018 09:29	DLB	631554

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	0.100U	0.042	0.100	0.200	mg/kg
99-65-0	1,3-Dinitrobenzene	0.100U	0.077	0.100	0.200	mg/kg
118-96-7	2,4,6-Trinitrotoluene	0.100U	0.051	0.100	0.200	mg/kg
121-14-2	2,4-Dinitrotoluene	0.100U	0.099	0.100	0.200	mg/kg
606-20-2	2,6-Dinitrotoluene	0.100U	0.061	0.100	0.200	mg/kg
35572-78-2	2-Amino-4,6-dinitrotoluene	0.100U	0.098	0.100	0.200	mg/kg
88-72-2	2-Nitrotoluene	0.100U	0.064	0.100	0.200	mg/kg
618-87-1	3,5-Dinitroaniline	0.100U	0.083	0.100	0.200	mg/kg
99-08-1	3-Nitrotoluene	0.150U	0.125	0.150	0.200	mg/kg
19406-51-0	4-Amino-2,6-dinitrotoluene	0.100U	0.077	0.100	0.200	mg/kg
99-99-0	4-Nitrotoluene	0.100U	0.077	0.100	0.200	mg/kg
2691-41-0	HMX	0.100U	0.026	0.100	0.200	mg/kg
98-95-3	Nitrobenzene	0.100U	0.036	0.100	0.200	mg/kg
55-63-0	Nitroglycerin	0.100U	0.074	0.100	0.200	mg/kg
78-11-5	Pentaerythritol Tetranitrate	0.150U	0.122	0.150	0.200	mg/kg
121-82-4	RDX	0.100U	0.018	0.100	0.200	mg/kg
479-45-8	Tetryl	0.100U	0.041	0.100	0.200	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
528-29-0	1,2-Dinitrobenzene	1000	1140	ug/Kg	114	78 - 119



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

GC/MS Semi-Volatiles QC Summary

Analytical Batch		Client ID	LCS631242		LCS631242		LCS631242		LCS631242		LCS631242	
631367		MB631242	1786566		1786567		1786568		1786568		1786568	
Prep Batch		GCAL ID	MB		LCS		LCS		LCS		LCS	
631242		Sample Type	03/15/2018 11:20		03/15/2018 11:20		03/15/2018 11:20		03/15/2018 11:20		03/15/2018 11:20	
Prep Method		Prep Date	03/16/2018 12:20		03/16/2018 12:36		03/16/2018 12:36		03/16/2018 12:36		03/16/2018 12:36	
EPA 3510C		Analysis Date	Water		Water		Water		Water		Water	
Matrix		Matrix	Water		Water		Water		Water		Water	
EPA 1311/8270D		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,4-Dichlorobenzene	106-46-7	0.0050U	0.0050	0.050	0.036	73	29 - 112	0.050	0.041	81	11	30
2,4,5-Trichlorophenol	95-95-4	0.0050U	0.0050	0.050	0.049	98	53 - 123	0.050	0.051	102	4	30
2,4,6-Trichlorophenol	88-06-2	0.0050U	0.0050	0.050	0.053	106	50 - 125	0.050	0.055	110	4	30
2,4-Dinitrotoluene	121-14-2	0.0050U	0.0050	0.050	0.048	96	57 - 128	0.050	0.052	105	8	30
Cresols	1319-77-3	0.0100U	0.0100	0.100	0.073	73	24 - 125	0.100	0.085	85	15	30
Hexachlorobenzene	118-74-1	0.0050U	0.0050	0.050	0.047	95	53 - 125	0.050	0.049	98	4	30
Hexachlorobutadiene	87-68-3	0.0050U	0.0050	0.050	0.039	77	22 - 124	0.050	0.044	87	12	30
Hexachloroethane	67-72-1	0.0050U	0.0050	0.050	0.036	71	21 - 115	0.050	0.041	81	13	30
m,p-Cresol	1319-77-3MP	0.0050U	0.0050	0.050	0.038	75	29 - 110	0.050	0.043	85	12	30
Nitrobenzene	98-95-3	0.0050U	0.0050	0.050	0.046	92	45 - 121	0.050	0.049	99	8	30
o-Cresol	95-48-7	0.0050U	0.0050	0.050	0.036	71	30 - 117	0.050	0.042	84	17	30
Pentachlorophenol	87-86-5	0.0050U	0.0050	0.050	0.043	86	35 - 138	0.050	0.045	90	4	30
Pyridine	110-86-1	0.0250U	0.0250	0.050	0.029	58	10 - 120	0.050	0.028	55	4	30
Surrogate												
2,4,6-Tribromophenol	118-79-6	.099	99	.1	.1	100	43 - 140	.1	.108	108	NA	NA
2-Fluorobiphenyl	321-60-8	.0441	88	.05	.0452	90	44 - 119	.05	.0478	96	NA	NA
2-Fluorophenol	367-12-4	.065	65	.1	.0617	62	19 - 119	.1	.0711	71	NA	NA
Nitrobenzene-d5	4165-60-0	.0457	91	.05	.0468	94	44 - 120	.05	.0489	98	NA	NA
Phenol-d5	4165-62-2	.0377	38	.1	.0399	40	10 - 123	.1	.0517	52	NA	NA
Terphenyl-d14	1718-51-0	.0388	78	.05	.0388	78	50 - 134	.05	.0408	82	NA	NA



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

Inorganics QC Summary

Analytical Batch 631466	Client ID GCAL ID	MB631156 1786145	LCS631156 1786146			
Prep Batch 631156	Sample Type Prep Date	MB 03/14/2018 15:10	LCS 03/14/2018 15:10			
Prep Method EPA 7470A	Analysis Date Matrix	03/20/2018 08:49 Water	03/20/2018 08:55 Water			
EPA 1311/7470A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	0.00020U	0.00020	0.0050	0.0045	91 80 - 120

Analytical Batch 631466	Client ID GCAL ID	24A-WC05-C-S0 21803131801	1785353MS 1786147		1785353MSD 1786148					
Prep Batch 631156	Sample Type Prep Date	SAMPLE 03/14/2018 15:10	MS 03/14/2018 15:10		MSD 03/14/2018 15:10					
Prep Method EPA 7470A	Analysis Date Matrix	03/20/2018 09:00 Solid	03/20/2018 09:09 Solid		03/20/2018 09:07 Solid					
EPA 1311/7470A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Mercury	7439-97-6	0.0	0.00020	0.0050	0.0047	94 80 - 120	0.0050	0.0052	103 9	20

Analytical Batch 631586	Client ID GCAL ID	MB631155 1786141	LCS631155 1786142			
Prep Batch 631155	Sample Type Prep Date	MB 03/14/2018 15:10	LCS 03/14/2018 15:10			
Prep Method EPA 3010A	Analysis Date Matrix	03/20/2018 13:21 Water	03/20/2018 13:25 Water			
EPA 1311/6020A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R
Arsenic	7440-38-2	0.00050U	0.00050	0.050	0.054	108 80 - 120
Barium	7440-39-3	0.0037	0.00050	0.050	0.056	112 80 - 120
Cadmium	7440-43-9	0.00050U	0.00050	0.050	0.053	106 80 - 120
Chromium	7440-47-3	0.00050U	0.00050	0.050	0.056	111 80 - 120
Lead	7439-92-1	0.00050U	0.00050	0.050	0.053	106 80 - 120
Selenium	7782-49-2	0.00050U	0.00050	0.010	0.011	107 80 - 120
Silver	7440-22-4	0.00050U	0.00050	0.050	0.045	89 80 - 120

Analytical Batch 631586	Client ID GCAL ID	24A-WC05-C-S0 21803131801	1785353MS 1786143		1785353MSD 1786144					
Prep Batch 631155	Sample Type Prep Date	SAMPLE 03/14/2018 15:10	MS 03/14/2018 15:10		MSD 03/14/2018 15:10					
Prep Method EPA 3010A	Analysis Date Matrix	03/20/2018 13:29 Water	03/20/2018 13:33 Water		03/20/2018 13:37 Solid					
EPA 1311/6020A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Arsenic	7440-38-2	0.0	0.050	0.50	0.52	104 80 - 120	0.50	0.51	102 2	20
Barium	7440-39-3	1.69	0.050	0.50	2.21	104 80 - 120	0.50	2.28	116 3	20
Cadmium	7440-43-9	0.0	0.050	0.50	0.51	103 80 - 120	0.50	0.53	106 3	20
Chromium	7440-47-3	0.010	0.050	0.50	0.52	103 80 - 120	0.50	0.52	103 0	20
Lead	7439-92-1	0.032	0.050	0.50	0.54	102 80 - 120	0.50	0.56	105 3	20
Selenium	7782-49-2	0.0042	0.050	0.10	0.099	95 80 - 120	0.10	0.10	100 5	20
Silver	7440-22-4	0.0	0.050	0.50	0.43	87 80 - 120	0.50	0.44	89 3	20



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

General Chemistry QC Summary

Analytical Batch 631598	Client ID GCAL ID	MB631449 1787617	LCS631449 1787618				
Prep Batch 631449	Sample Type Prep Date	MB 03/19/2018 13:05	LCS 03/19/2018 13:05				
Prep Method EPA 7.3.4.2	Analysis Date Matrix	03/20/2018 16:15 Solid	03/20/2018 16:15 Solid				
EPA 9034		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Reactivity Sulfide	18496-25-8R	250U	250	1000	1082	108	47 - 135

Analytical Batch 631318	Client ID GCAL ID	24A-WC05-C-S0 21803131801	1785353DUP 1786980				
	Sample Type Prep Date	SAMPLE NA	DUP NA				
	Analysis Date Matrix	03/16/2018 16:14 Solid	03/16/2018 16:14 Solid				
EPA 9045D		Units Result	pH unit LOD	Result	RPD	RPD Limit	
pH	pH	8.50	1.00	8.49	0	6	

Analytical Batch 631351	Client ID GCAL ID	MB631118 1785923	LCS631118 1785924				
Prep Batch 631118	Sample Type Prep Date	MB 03/14/2018 15:30	LCS 03/14/2018 15:30				
Prep Method EPA 7.3.3.2	Analysis Date Matrix	03/16/2018 15:40 Solid	03/16/2018 15:42 Solid				
EPA 9012B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Reactivity Cyanide	57-12-5R	250U	250	250	35.9	14	1 - 25



Report#: 218031318

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 03/21/2018

General Chromatography QC Summary

Analytical Batch		Client ID	LCS631279		LCSD631279							
631554		MB631279	1786837		1786838							
Prep Batch		GCAL ID	1786837		1786838							
631279		Sample Type	MB		LCS							
Prep Method		Prep Date	03/15/2018 19:27		03/15/2018 19:27							
EPA 8330B		Analysis Date	03/20/2018 08:28		03/20/2018 09:49							
		Matrix	Solid		Solid							
EPA 8330B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,3,5-Trinitrobenzene	99-35-4	0.100U	0.100	1.00	1.10	110	80 - 116	1.00	1.05	105	5	20
1,3-Dinitrobenzene	99-65-0	0.100U	0.100	1.00	1.16	116	73 - 119	1.00	1.13	113	3	20
2,4,6-Trinitrotoluene	118-96-7	0.100U	0.100	1.00	0.987	99	71 - 120	1.00	1.05	105	6	20
2,4-Dinitrotoluene	121-14-2	0.100U	0.100	1.00	1.02	102	75 - 121	1.00	1.14	114	11	20
2,6-Dinitrotoluene	606-20-2	0.100U	0.100	1.00	1.03	103	79 - 117	1.00	1.10	110	7	20
2-Amino-4,6-dinitrotoluene	35572-78-2	0.100U	0.100	1.00	1.01	101	71 - 123	1.00	0.971	97	4	20
2-Nitrotoluene	88-72-2	0.100U	0.100	1.00	0.998	100	70 - 124	1.00	0.995	99	0	20
3,5-Dinitroaniline	618-87-1	0.100U	0.100	1.00	1.03	103	86 - 118	1.00	0.983	98	5	20
3-Nitrotoluene	99-08-1	0.150U	0.150	1.00	0.976	98	67 - 129	1.00	1.01	101	3	20
4-Amino-2,6-dinitrotoluene	19406-51-0	0.100U	0.100	1.00	1.01	101	64 - 127	1.00	1.06	106	4	20
4-Nitrotoluene	99-99-0	0.100U	0.100	1.00	0.968	97	71 - 124	1.00	1.02	102	6	20
HMX	2691-41-0	0.100U	0.100	1.00	0.981	98	74 - 124	1.00	0.999	100	2	20
Nitrobenzene	98-95-3	0.100U	0.100	1.00	1.05	105	67 - 129	1.00	1.10	110	5	20
Nitroglycerin	55-63-0	0.100U	0.100	1.00	1.03	103	73 - 124	1.00	1.02	102	1	20
Pentaerythritol Tetranitrate	78-11-5	0.150U	0.150	1.00	0.864	86	72 - 128	1.00	0.866	87	0	20
RDX	121-82-4	0.100U	0.100	1.00	1.02	102	67 - 129	1.00	1.06	106	3	20
Tetryl	479-45-8	0.100U	0.100	1.00	0.773	77	68 - 135	1.00	0.802	80	4	20
Surrogate												
1,2-Dinitrobenzene	528-29-0	1.14	114	1	1.09	109	78 - 119	1	1.15	115	NA	NA



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218031318
 PM: AEC

Report To:				Bill To:				Analytical Requests & Method						Custody Seal:					
Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Explosives	Ignit/Corros/React	Paint Filter	TCLP SVOCs	TCLP RCRA 8 Metals						Used: <input type="checkbox"/> Yes <input type="checkbox"/> No	Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No
P.O. Number R20179-0017		Project Name/Number FWDA Parcel 21, SWMU 1 and Parcel 24		Temperature: <u>2.0</u> <i>EC1</i> <u>21 CPM</u>		<input type="checkbox"/> Dissolved Analysis Requested												<input type="checkbox"/> Field Filtered	
Sampled By: <u>Kayla Quinter</u>																			
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers											GCAL ID		
S	03/12/18	1414	x		24A-WC05-C-SO	2	X	X	X	X	X						1		
← Preservative / Notes ↓																			
Airbill Number: 424405058452																			
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* <u>5</u> Da <input type="checkbox"/> Standard (per contract/quote)																			
Relinquished by: (Signature)				Date/Time:		Received by: (Signature)				Date/Time:		Notes:							
<i>Reddy</i>				3-13-18		<i>[Signature]</i>				3-13-18									
COC 03122018A																			

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *. Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.



CHAIN OF CUSTODY RECORD

GCAL USE ONLY

Report To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Bill To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Analytical Requests & Method								Custody Seal: Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temperature: <u>2.0</u> ^{ECR} 21.0°C <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered		
P.O. Number R20179-0005		Project Name/Number FWDA Parcel 21, SWMU 1 and Parcel 24						TCLP metals or just Pb, Hg, As (1311/60207471)								← Preservative / Notes ↓		GCAL ID
Sampled By: Kayla Quinter																		
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers												
S	03/12/18	1414	x		24A-WC05-C-SO	2	x											
Airbill Number: 424405058452																		
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* _5_ Days <input type="checkbox"/> Standard (per contract/quote)																		
Relinquished by: (Signature) <i>Kayla Quinter</i>				Date/Time: 3/12/2018 1600		Received by: (Signature) FED EX				Date/Time: 3/12/18 1600		Notes:						
Relinquished by: (Signature) FedEx				Date/Time: 10:30		Received by: (Signature) <i>T. J. ...</i>				Date/Time: 3/12/18 10:30								
Relinquished by: (Signature)				Date/Time:		Received by: (Signature)				Date/Time:								
COC 03122018A																		

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218031318			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 275212	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 2 - Waste/TCLP 5 Day	Receive Date(s) 03/13/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4244-0505-8452		2.0				
NOTES						

Revision 1.6

Page 1 of 1



NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 04/19/2018

GCAL Report 218040316



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To

Emily McRee
Zapata Incorporated
6302 Fairview Rd
Suite 600
Charlotte, NC 28210

Additional Recipients

Cindy Westergard, HSW Engineering
Katie Stout, Zapata Incorporated





Report#: 218040316

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 04/19/2018

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218040316



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117



Report#: 218040316

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 04/19/2018

Case Narrative

Client: Zapata Incorporated Report: 218040316

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

In the EPA 8330B analysis, the recovery for the surrogate is above the upper control limit for sample 21804031601 (24A-WC06-C-SO). No target analytes were detected in this sample.

In the EPA 8330B analysis, the recovery for the surrogate is reported as diluted out for those analyses performed at a 10 or higher dilution.

In the EPA 8330B analysis for prep batch 632890, the laboratory used a reference material that is low for 2,4,6-Trinitrotoluene, Nitrobenzene, 2-Nitrotoluene, 3-Nitrotoluene, 3,5-Dinitroaniline, and Tetra. The LCS/LCSD exhibited RPD failures. The samples were out of holding time when all analyses were completed. The client was contacted and authorized the laboratory to report the data.

METALS

In the EPA 1311/6020A analysis for prep batch 632750, the MS and/or MSD is above the upper control limit for TCLP Barium. The concentration detected in the sample is not above the regulatory limit; therefore the data is reportable. The LCS recovery is acceptable.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Q Flag Summary

Client Sample ID: **24A-WC06-C-SO** Lab Sample ID: **21804031601**

Method: EPA 8330B		Analysis Date: 4/11/2018 2:35:34 PM				
Analyte	CAS	CCV OUL	LCS/LCSD OUL	SURROGATE OUL	IS OUL	CLCCV OUL
2,4,6-Trinitrotoluene	118-96-7		X			
2-Nitrotoluene	88-72-2		X			
3,5-Dinitroaniline	618-87-1		X			
3-Nitrotoluene	99-08-1		X			
4-Nitrotoluene	99-99-0		X			
Nitrobenzene	98-95-3		X			
Pentaerythritol Tetranitrate	78-11-5		X			
Tetryl	479-45-8		X			

Client Sample ID: **2101A-WC01-C-SO** Lab Sample ID: **21804031602**

Method: EPA 8330B		Analysis Date: 4/11/2018 2:55:36 PM				
Analyte	CAS	CCV OUL	LCS/LCSD OUL	SURROGATE OUL	IS OUL	CLCCV OUL
2,4,6-Trinitrotoluene	118-96-7		X			
2-Nitrotoluene	88-72-2		X			
3,5-Dinitroaniline	618-87-1		X			
3-Nitrotoluene	99-08-1		X			
4-Nitrotoluene	99-99-0		X			
Nitrobenzene	98-95-3		X			
Pentaerythritol Tetranitrate	78-11-5		X			
Tetryl	479-45-8		X			

Client Sample ID: **2101A-WC02-C-SO** Lab Sample ID: **21804031603**

Method: EPA 8330B		Analysis Date: 4/13/2018 5:01:05 PM				
Analyte	CAS	CCV OUL	LCS/LCSD OUL	SURROGATE OUL	IS OUL	CLCCV OUL
2-Nitrotoluene	88-72-2		X			
3,5-Dinitroaniline	618-87-1		X			
3-Nitrotoluene	99-08-1		X			
4-Nitrotoluene	99-99-0		X			
Nitrobenzene	98-95-3		X			
Pentaerythritol Tetranitrate	78-11-5		X			
Tetryl	479-45-8		X			

Method: EPA 8330B		Analysis Date: 4/15/2018 4:46:20 PM				
Analyte	CAS	CCV OUL	LCS/LCSD OUL	SURROGATE OUL	IS OUL	CLCCV OUL
2,4,6-Trinitrotoluene	118-96-7		X			

CCV OUL=CCV out of limits
 LCS/LCSD OUL=LCS/LCSD out of limits
 SURROGATE OUL=Surrogate out of limits
 IS OUL=Internal Standard out of limits
 CLCCV OUL=Closing CCV out of limits



Report#: 218040316

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 04/19/2018

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Report#: 218040316

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21804031601	24A-WC06-C-SO	Solid	03/29/2018 16:05	04/03/2018 09:44
21804031602	2101A-WC01-C-SO	Solid	03/30/2018 14:35	04/03/2018 09:44
21804031603	2101A-WC02-C-SO	Solid	03/30/2018 14:40	04/03/2018 09:44



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21804031601	24A-WC06-C-SO	S	Sec. 7.3.3.2 Reactivity Prep
21804031601	24A-WC06-C-SO	S	Sec. 7.3.4.2 Reactivity Prep
21804031601	24A-WC06-C-SO	S	EPA 8330B Solid
21804031601	24A-WC06-C-SO	S	EPA 8330B Prep Solid
21804031601	24A-WC06-C-SO	S	EPA 9034 Reactivity Sulfide Solid
21804031601	24A-WC06-C-SO	S	EPA 9045 pH
21804031601	24A-WC06-C-SO	S	EPA 9095B
21804031601	24A-WC06-C-SO	S	EPA 9012A Reactivity Cyanide Solid
21804031601	24A-WC06-C-SO	S	EPA 1030
21804031601	24A-WC06-C-SO	S	EPA 1311/6020A TCLP
21804031601	24A-WC06-C-SO	S	EPA 6020A TCLP Prep
21804031601	24A-WC06-C-SO	S	EPA 7470A TCLP
21804031601	24A-WC06-C-SO	S	EPA 7470A TCLP Prep
21804031601	24A-WC06-C-SO	S	EPA 8270D TCLP
21804031601	24A-WC06-C-SO	S	EPA 3510D TCLP Prep
21804031601	24A-WC06-C-SO	S	TCLP Procedure Soils
21804031602	2101A-WC01-C-SO	S	Sec. 7.3.3.2 Reactivity Prep
21804031602	2101A-WC01-C-SO	S	Sec. 7.3.4.2 Reactivity Prep
21804031602	2101A-WC01-C-SO	S	EPA 8330B Solid
21804031602	2101A-WC01-C-SO	S	EPA 8330B Prep Solid
21804031602	2101A-WC01-C-SO	S	EPA 9034 Reactivity Sulfide Solid
21804031602	2101A-WC01-C-SO	S	EPA 9045 pH
21804031602	2101A-WC01-C-SO	S	EPA 9095B
21804031602	2101A-WC01-C-SO	S	EPA 9012A Reactivity Cyanide Solid
21804031602	2101A-WC01-C-SO	S	EPA 1030
21804031602	2101A-WC01-C-SO	S	EPA 1311/6020A TCLP
21804031602	2101A-WC01-C-SO	S	EPA 6020A TCLP Prep
21804031602	2101A-WC01-C-SO	S	EPA 7470A TCLP
21804031602	2101A-WC01-C-SO	S	EPA 7470A TCLP Prep
21804031602	2101A-WC01-C-SO	S	EPA 8270D TCLP
21804031602	2101A-WC01-C-SO	S	EPA 3510D TCLP Prep
21804031602	2101A-WC01-C-SO	S	TCLP Procedure Soils
21804031603	2101A-WC02-C-SO	S	Sec. 7.3.3.2 Reactivity Prep
21804031603	2101A-WC02-C-SO	S	Sec. 7.3.4.2 Reactivity Prep
21804031603	2101A-WC02-C-SO	S	EPA 8330B Solid
21804031603	2101A-WC02-C-SO	S	EPA 8330B Prep Solid
21804031603	2101A-WC02-C-SO	S	EPA 9034 Reactivity Sulfide Solid
21804031603	2101A-WC02-C-SO	S	EPA 9045 pH
21804031603	2101A-WC02-C-SO	S	EPA 9095B
21804031603	2101A-WC02-C-SO	S	EPA 9012A Reactivity Cyanide Solid
21804031603	2101A-WC02-C-SO	S	EPA 1030
21804031603	2101A-WC02-C-SO	S	EPA 1311/6020A TCLP
21804031603	2101A-WC02-C-SO	S	EPA 6020A TCLP Prep
21804031603	2101A-WC02-C-SO	S	EPA 7470A TCLP
21804031603	2101A-WC02-C-SO	S	EPA 7470A TCLP Prep
21804031603	2101A-WC02-C-SO	S	EPA 8270D TCLP
21804031603	2101A-WC02-C-SO	S	EPA 3510D TCLP Prep
21804031603	2101A-WC02-C-SO	S	TCLP Procedure Soils



Report#: 218040316

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 04/19/2018

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Summary of Compounds Detected

24A-WC06-C-SO	Collect Date	03/29/2018 16:05	GCAL ID	21804031601
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/6020A

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-39-3	Barium	1.82	0.025	0.050	0.10	mg/L

EPA 9045D

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.60	1.00	1.00	1.00	pH unit

2101A-WC01-C-SO	Collect Date	03/30/2018 14:35	GCAL ID	21804031602
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/6020A

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-39-3	Barium	1.47	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.039J	0.025	0.050	0.10	mg/L

EPA 9045D

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.44	1.00	1.00	1.00	pH unit

EPA 8330B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	0.086J	0.042	0.100	0.200	mg/kg

2101A-WC02-C-SO	Collect Date	03/30/2018 14:40	GCAL ID	21804031603
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/6020A

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-39-3	Barium	1.77	0.025	0.050	0.10	mg/L



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Summary of Compounds Detected

2101A-WC02-C-SO	Collect Date	03/30/2018 14:40	GCAL ID	21804031603
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/6020A (Continued)

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	0.058J	0.025	0.050	0.10	mg/L

EPA 9045D

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.43	1.00	1.00	1.00	pH unit

EPA 8330B

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	4.69	0.420	1.00	2.00	mg/kg
118-96-7	2,4,6-Trinitrotoluene	32.3Q	0.510	1.00	2.00	mg/kg
2691-41-0	HMX	1.89J	0.260	1.00	2.00	mg/kg
121-82-4	RDX	7.23	0.180	1.00	2.00	mg/kg



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

24A-WC06-C-SO	Collect Date	03/29/2018 16:05	GCAL ID	21804031601
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/10/2018 06:00	632999	EPA 3510C	1	04/11/2018 15:08	DLB	633134

CAS#	Parameter	Result	DL	LOD	LOQ	Units
106-46-7	1,4-Dichlorobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-95-4	2,4,5-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
121-14-2	2,4-Dinitrotoluene	0.0050U	0.0025	0.0050	0.0100	mg/L
1319-77-3	Cresols	0.0100U	0.0050	0.0100	0.1000	mg/L
118-74-1	Hexachlorobenzene	0.0050U	0.0025	0.0050	0.0100	mg/L
87-68-3	Hexachlorobutadiene	0.0050U	0.0025	0.0050	0.0500	mg/L
67-72-1	Hexachloroethane	0.0050U	0.0025	0.0050	0.0500	mg/L
1319-77-3MP	m,p-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
98-95-3	Nitrobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-48-7	o-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
87-86-5	Pentachlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
110-86-1	Pyridine	0.0250U	0.0075	0.0250	0.0500	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	0.25	.22	mg/L	88	44 - 120
321-60-8	2-Fluorobiphenyl	0.25	.184	mg/L	74	44 - 119
1718-51-0	Terphenyl-d14	0.25	.192	mg/L	77	50 - 134
4165-62-2	Phenol-d5	0.50	.18	mg/L	36	10 - 123
367-12-4	2-Fluorophenol	0.50	.257	mg/L	51	19 - 119
118-79-6	2,4,6-Tribromophenol	0.50	.433	mg/L	87	43 - 140

EPA 1311/6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/05/2018 18:00	632750	EPA 3010A	10	04/10/2018 11:19	AWG	633035

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	0.050U	0.025	0.050	0.10	mg/L
7440-39-3	Barium	1.82	0.025	0.050	0.10	mg/L
7440-43-9	Cadmium	0.050U	0.025	0.050	0.10	mg/L
7440-47-3	Chromium	0.050U	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.050U	0.025	0.050	0.10	mg/L
7782-49-2	Selenium	0.050U	0.025	0.050	0.10	mg/L
7440-22-4	Silver	0.050U	0.025	0.050	0.10	mg/L



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

24A-WC06-C-SO	Collect Date	03/29/2018 16:05	GCAL ID	21804031601
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/06/2018 08:55	632751	EPA 7470A	1	04/06/2018 13:00	LWZ	632774

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.00020U	0.000070	0.00020	0.0020	mg/L

EPA 1030

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/03/2018 15:39	AJE	632561

CAS#	Parameter	Result	DL	LOD	LOQ	Units
000000-01-7	Ignitable	NO	2	2	2	mm/sec

EPA 9012B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 10:34	632515	EPA 7.3.3.2	1	04/05/2018 14:08	JEM	632733

CAS#	Parameter	Result	DL	LOD	LOQ	Units
57-12-5R	Reactivity Cyanide	250U	250	250	250	mg/kg

EPA 9034

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 10:34	632517	EPA 7.3.4.2	1	04/05/2018 16:53	RYC	632755

CAS#	Parameter	Result	DL	LOD	LOQ	Units
18496-25-8R	Reactivity Sulfide	250U	250	250	250	mg/kg

EPA 9045D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/04/2018 09:28	SLL2	632522

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.60	1.00	1.00	1.00	pH unit



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

24A-WC06-C-SO	Collect Date	03/29/2018 16:05	GCAL ID	21804031601
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/05/2018 11:40	JEM	632711

CAS#	Parameter	Result	DL	LOD	LOQ	Units
WET-044	Paint Filter	PASS				Unitless

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/09/2018 20:00	632890	EPA 8330B	1	04/11/2018 14:35	DLB	633480

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	0.095U	0.040	0.095	0.190	mg/kg
99-65-0	1,3-Dinitrobenzene	0.095U	0.073	0.095	0.190	mg/kg
118-96-7	2,4,6-Trinitrotoluene	0.095UQ	0.049	0.095	0.190	mg/kg
121-14-2	2,4-Dinitrotoluene	0.095U	0.094	0.095	0.190	mg/kg
606-20-2	2,6-Dinitrotoluene	0.095U	0.058	0.095	0.190	mg/kg
35572-78-2	2-Amino-4,6-dinitrotoluene	0.095U	0.093	0.095	0.190	mg/kg
88-72-2	2-Nitrotoluene	0.095UQ	0.061	0.095	0.190	mg/kg
618-87-1	3,5-Dinitroaniline	0.095UQ	0.079	0.095	0.190	mg/kg
99-08-1	3-Nitrotoluene	0.143UQ	0.119	0.143	0.190	mg/kg
19406-51-0	4-Amino-2,6-dinitrotoluene	0.095U	0.073	0.095	0.190	mg/kg
99-99-0	4-Nitrotoluene	0.095UQ	0.073	0.095	0.190	mg/kg
2691-41-0	HMX	0.095U	0.025	0.095	0.190	mg/kg
98-95-3	Nitrobenzene	0.095UQ	0.034	0.095	0.190	mg/kg
55-63-0	Nitroglycerin	0.095U	0.070	0.095	0.190	mg/kg
78-11-5	Pentaerythritol Tetranitrate	0.143UQ	0.116	0.143	0.190	mg/kg
121-82-4	RDX	0.095U	0.017	0.095	0.190	mg/kg
479-45-8	Tetryl	0.095UQ	0.039	0.095	0.190	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
528-29-0	1,2-Dinitrobenzene	0.9520	1.17	mg/kg	123*	78 - 119

2101A-WC01-C-SO	Collect Date	03/30/2018 14:35	GCAL ID	21804031602
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/10/2018 06:00	632999	EPA 3510C	1	04/11/2018 15:25	DLB	633134

CAS#	Parameter	Result	DL	LOD	LOQ	Units
106-46-7	1,4-Dichlorobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

2101A-WC01-C-SO	Collect Date	03/30/2018 14:35	GCAL ID	21804031602
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/8270D (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/10/2018 06:00	632999	EPA 3510C	1	04/11/2018 15:25	DLB	633134

CAS#	Parameter	Result	DL	LOD	LOQ	Units
95-95-4	2,4,5-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
121-14-2	2,4-Dinitrotoluene	0.0050U	0.0025	0.0050	0.0100	mg/L
1319-77-3	Cresols	0.0100U	0.0050	0.0100	0.1000	mg/L
118-74-1	Hexachlorobenzene	0.0050U	0.0025	0.0050	0.0100	mg/L
87-68-3	Hexachlorobutadiene	0.0050U	0.0025	0.0050	0.0500	mg/L
67-72-1	Hexachloroethane	0.0050U	0.0025	0.0050	0.0500	mg/L
1319-77-3MP	m,p-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
98-95-3	Nitrobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-48-7	o-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
87-86-5	Pentachlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
110-86-1	Pyridine	0.0250U	0.0075	0.0250	0.0500	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	0.25	.246	mg/L	98	44 - 120
321-60-8	2-Fluorobiphenyl	0.25	.197	mg/L	79	44 - 119
1718-51-0	Terphenyl-d14	0.25	.215	mg/L	86	50 - 134
4165-62-2	Phenol-d5	0.50	.19	mg/L	38	10 - 123
367-12-4	2-Fluorophenol	0.50	.28	mg/L	56	19 - 119
118-79-6	2,4,6-Tribromophenol	0.50	.44	mg/L	88	43 - 140

EPA 1311/6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/05/2018 18:00	632750	EPA 3010A	10	04/10/2018 11:42	AWG	633035

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	0.050U	0.025	0.050	0.10	mg/L
7440-39-3	Barium	1.47	0.025	0.050	0.10	mg/L
7440-43-9	Cadmium	0.050U	0.025	0.050	0.10	mg/L
7440-47-3	Chromium	0.050U	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.039J	0.025	0.050	0.10	mg/L
7782-49-2	Selenium	0.050U	0.025	0.050	0.10	mg/L
7440-22-4	Silver	0.050U	0.025	0.050	0.10	mg/L



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

2101A-WC01-C-SO	Collect Date	03/30/2018 14:35	GCAL ID	21804031602
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/06/2018 08:55	632751	EPA 7470A	1	04/06/2018 13:05	LWZ	632774

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.00020U	0.000070	0.00020	0.0020	mg/L

EPA 1030

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/03/2018 15:39	AJE	632561

CAS#	Parameter	Result	DL	LOD	LOQ	Units
000000-01-7	Ignitable	NO	2	2	2	mm/sec

EPA 9012B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 10:34	632515	EPA 7.3.3.2	1	04/05/2018 14:10	JEM	632733

CAS#	Parameter	Result	DL	LOD	LOQ	Units
57-12-5R	Reactivity Cyanide	250U	250	250	250	mg/kg

EPA 9034

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 10:34	632517	EPA 7.3.4.2	1	04/05/2018 16:53	RYC	632755

CAS#	Parameter	Result	DL	LOD	LOQ	Units
18496-25-8R	Reactivity Sulfide	250U	250	250	250	mg/kg

EPA 9045D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/04/2018 09:28	SLL2	632522

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.44	1.00	1.00	1.00	pH unit



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

2101A-WC01-C-SO	Collect Date	03/30/2018 14:35	GCAL ID	21804031602
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/05/2018 11:40	JEM	632711

CAS#	Parameter	Result	DL	LOD	LOQ	Units
WET-044	Paint Filter	PASS				Unitless

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/09/2018 20:00	632890	EPA 8330B	1	04/11/2018 14:55	DLB	633480

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-65-0	1,3-Dinitrobenzene	0.100U	0.077	0.100	0.200	mg/kg
118-96-7	2,4,6-Trinitrotoluene	0.100UQ	0.051	0.100	0.200	mg/kg
121-14-2	2,4-Dinitrotoluene	0.100U	0.099	0.100	0.200	mg/kg
606-20-2	2,6-Dinitrotoluene	0.100U	0.061	0.100	0.200	mg/kg
35572-78-2	2-Amino-4,6-dinitrotoluene	0.100U	0.098	0.100	0.200	mg/kg
88-72-2	2-Nitrotoluene	0.100UQ	0.064	0.100	0.200	mg/kg
618-87-1	3,5-Dinitroaniline	0.100UQ	0.083	0.100	0.200	mg/kg
99-08-1	3-Nitrotoluene	0.150UQ	0.125	0.150	0.200	mg/kg
19406-51-0	4-Amino-2,6-dinitrotoluene	0.100U	0.077	0.100	0.200	mg/kg
99-99-0	4-Nitrotoluene	0.100UQ	0.077	0.100	0.200	mg/kg
2691-41-0	HMX	0.100U	0.026	0.100	0.200	mg/kg
98-95-3	Nitrobenzene	0.100UQ	0.036	0.100	0.200	mg/kg
55-63-0	Nitroglycerin	0.100U	0.074	0.100	0.200	mg/kg
78-11-5	Pentaerythritol Tetranitrate	0.150UQ	0.122	0.150	0.200	mg/kg
121-82-4	RDX	0.100U	0.018	0.100	0.200	mg/kg
479-45-8	Tetryl	0.100UQ	0.041	0.100	0.200	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
528-29-0	1,2-Dinitrobenzene	1	1.16	mg/kg	116	78 - 119



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

2101A-WC01-C-SO	Collect Date	03/30/2018 14:35	GCAL ID	21804031602
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/09/2018 20:00	632890	EPA 8330B	1	04/15/2018 16:12	DLB	633719

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	0.086J	0.042	0.100	0.200	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
528-29-0	1,2-Dinitrobenzene	1	.962	mg/kg	96	78 - 119

2101A-WC02-C-SO	Collect Date	03/30/2018 14:40	GCAL ID	21804031603
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/10/2018 06:00	632999	EPA 3510C	1	04/11/2018 15:41	DLB	633134

CAS#	Parameter	Result	DL	LOD	LOQ	Units
106-46-7	1,4-Dichlorobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-95-4	2,4,5-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
121-14-2	2,4-Dinitrotoluene	0.0050U	0.0025	0.0050	0.0100	mg/L
1319-77-3	Cresols	0.0100U	0.0050	0.0100	0.1000	mg/L
118-74-1	Hexachlorobenzene	0.0050U	0.0025	0.0050	0.0100	mg/L
87-68-3	Hexachlorobutadiene	0.0050U	0.0025	0.0050	0.0500	mg/L
67-72-1	Hexachloroethane	0.0050U	0.0025	0.0050	0.0500	mg/L
1319-77-3MP	m,p-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
98-95-3	Nitrobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-48-7	o-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
87-86-5	Pentachlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
110-86-1	Pyridine	0.0250U	0.0075	0.0250	0.0500	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	0.25	.241	mg/L	96	44 - 120
321-60-8	2-Fluorobiphenyl	0.25	.201	mg/L	80	44 - 119
1718-51-0	Terphenyl-d14	0.25	.201	mg/L	80	50 - 134
4165-62-2	Phenol-d5	0.50	.189	mg/L	38	10 - 123
367-12-4	2-Fluorophenol	0.50	.271	mg/L	54	19 - 119
118-79-6	2,4,6-Tribromophenol	0.50	.418	mg/L	84	43 - 140



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

2101A-WC02-C-SO	Collect Date	03/30/2018 14:40	GCAL ID	21804031603
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 1311/6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/05/2018 18:00	632750	EPA 3010A	10	04/10/2018 11:46	AWG	633035

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	0.050U	0.025	0.050	0.10	mg/L
7440-39-3	Barium	1.77	0.025	0.050	0.10	mg/L
7440-43-9	Cadmium	0.050U	0.025	0.050	0.10	mg/L
7440-47-3	Chromium	0.050U	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.058J	0.025	0.050	0.10	mg/L
7782-49-2	Selenium	0.050U	0.025	0.050	0.10	mg/L
7440-22-4	Silver	0.050U	0.025	0.050	0.10	mg/L

EPA 1311/7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/06/2018 08:55	632751	EPA 7470A	1	04/06/2018 13:07	LWZ	632774

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.00020U	0.000070	0.00020	0.0020	mg/L

EPA 1030

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/03/2018 15:39	AJE	632561

CAS#	Parameter	Result	DL	LOD	LOQ	Units
000000-01-7	Ignitable	NO	2	2	2	mm/sec

EPA 9012B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 10:34	632515	EPA 7.3.3.2	1	04/05/2018 14:12	JEM	632733

CAS#	Parameter	Result	DL	LOD	LOQ	Units
57-12-5R	Reactivity Cyanide	250U	250	250	250	mg/kg



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

2101A-WC02-C-SO	Collect Date	03/30/2018 14:40	GCAL ID	21804031603
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 9034

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 10:34	632517	EPA 7.3.4.2	1	04/05/2018 16:53	RYC	632755

CAS#	Parameter	Result	DL	LOD	LOQ	Units
18496-25-8R	Reactivity Sulfide	250U	250	250	250	mg/kg

EPA 9045D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/04/2018 09:28	SLL2	632522

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.43	1.00	1.00	1.00	pH unit

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	04/05/2018 11:40	JEM	632711

CAS#	Parameter	Result	DL	LOD	LOQ	Units
WET-044	Paint Filter	PASS				Unitless

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/09/2018 20:00	632890	EPA 8330B	10	04/13/2018 17:01	DLB	633479

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-65-0	1,3-Dinitrobenzene	1.00U	0.770	1.00	2.00	mg/kg
121-14-2	2,4-Dinitrotoluene	1.00U	0.990	1.00	2.00	mg/kg
606-20-2	2,6-Dinitrotoluene	1.00U	0.610	1.00	2.00	mg/kg
35572-78-2	2-Amino-4,6-dinitrotoluene	1.00U	0.980	1.00	2.00	mg/kg
88-72-2	2-Nitrotoluene	1.00UQ	0.640	1.00	2.00	mg/kg
618-87-1	3,5-Dinitroaniline	1.00UQ	0.830	1.00	2.00	mg/kg
99-08-1	3-Nitrotoluene	1.50UQ	1.25	1.50	2.00	mg/kg
19406-51-0	4-Amino-2,6-dinitrotoluene	1.00U	0.770	1.00	2.00	mg/kg
99-99-0	4-Nitrotoluene	1.00UQ	0.770	1.00	2.00	mg/kg
98-95-3	Nitrobenzene	1.00UQ	0.360	1.00	2.00	mg/kg
55-63-0	Nitroglycerin	1.00U	0.740	1.00	2.00	mg/kg
78-11-5	Pentaerythritol Tetranitrate	1.50UQ	1.22	1.50	2.00	mg/kg



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Sample Results

2101A-WC02-C-SO	Collect Date	03/30/2018 14:40	GCAL ID	21804031603
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 8330B (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/09/2018 20:00	632890	EPA 8330B (Continued)	10	04/13/2018 17:01	DLB	633479

CAS#	Parameter	Result	DL	LOD	LOQ	Units
479-45-8	Tetryl	1.00UQ	0.410	1.00	2.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
528-29-0	1,2-Dinitrobenzene	1	Diluted Out	mg/kg	0*	78 - 119

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/09/2018 20:00	632890	EPA 8330B	10	04/15/2018 16:46	DLB	633719

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	4.69	0.420	1.00	2.00	mg/kg
118-96-7	2,4,6-Trinitrotoluene	32.3Q	0.510	1.00	2.00	mg/kg
2691-41-0	HMX	1.89J	0.260	1.00	2.00	mg/kg
121-82-4	RDX	7.23	0.180	1.00	2.00	mg/kg



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

GC/MS Semi-Volatiles QC Summary

Analytical Batch		Client ID	MB632999	LCS632999	LCSD632999							
633134		GCAL ID	1794930	1794931	1794932							
Prep Batch		Sample Type	MB	LCS	LCSD							
632999		Prep Date	04/10/2018 06:00	04/10/2018 06:00	04/10/2018 06:00							
Prep Method		Analysis Date	04/11/2018 13:29	04/11/2018 13:46	04/11/2018 14:02							
EPA 3510C		Matrix	Water	Water	Water							
EPA 1311/8270D		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,4-Dichlorobenzene	106-46-7	0.0050U	0.0050	0.050	0.032	65	29 - 112	0.050	0.033	66	2	30
2,4,5-Trichlorophenol	95-95-4	0.0050U	0.0050	0.050	0.053	105	53 - 123	0.050	0.052	105	1	30
2,4,6-Trichlorophenol	88-06-2	0.0050U	0.0050	0.050	0.052	104	50 - 125	0.050	0.053	106	2	30
2,4-Dinitrotoluene	121-14-2	0.0050U	0.0050	0.050	0.049	97	57 - 128	0.050	0.048	97	1	30
Cresols	1319-77-3	0.0100U	0.0100	0.100	0.069	69	24 - 125	0.100	0.068	68	1	30
Hexachlorobenzene	118-74-1	0.0050U	0.0050	0.050	0.053	107	53 - 125	0.050	0.052	104	2	30
Hexachlorobutadiene	87-68-3	0.0050U	0.0050	0.050	0.031	61	22 - 124	0.050	0.032	64	4	30
Hexachloroethane	67-72-1	0.0050U	0.0050	0.050	0.029	58	21 - 115	0.050	0.031	62	7	30
m,p-Cresol	1319-77-3MP	0.0050U	0.0050	0.050	0.033	67	29 - 110	0.050	0.033	66	1	30
Nitrobenzene	98-95-3	0.0050U	0.0050	0.050	0.048	96	45 - 121	0.050	0.051	101	5	30
o-Cresol	95-48-7	0.0050U	0.0050	0.050	0.036	72	30 - 117	0.050	0.036	71	1	30
Pentachlorophenol	87-86-5	0.0050U	0.0050	0.050	0.049	97	35 - 138	0.050	0.049	98	1	30
Pyridine	110-86-1	0.0250U	0.0250	0.050	0.029	57	10 - 120	0.050	0.027	53	7	30
Surrogate												
2,4,6-Tribromophenol	118-79-6	.096	96	.1	.0982	98	43 - 140	.1	.0991	99	NA	NA
2-Fluorobiphenyl	321-60-8	.0407	81	.05	.0452	90	44 - 119	.05	.0463	93	NA	NA
2-Fluorophenol	367-12-4	.054	54	.1	.056	56	19 - 119	.1	.0535	54	NA	NA
Nitrobenzene-d5	4165-60-0	.0518	104	.05	.047	94	44 - 120	.05	.0505	101	NA	NA
Phenol-d5	4165-62-2	.0354	35	.1	.0368	37	10 - 123	.1	.0343	34	NA	NA
Terphenyl-d14	1718-51-0	.047	94	.05	.0458	92	50 - 134	.05	.044	88	NA	NA



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Inorganics QC Summary

Analytical Batch 632774	Client ID GCAL ID	MB632751 1793712	LCS632751 1793713			
Prep Batch 632751	Sample Type Prep Date	MB 04/06/2018 08:55	LCS 04/06/2018 08:55			
Prep Method EPA 7470A	Analysis Date Matrix	04/06/2018 12:56 Water	04/06/2018 12:58 Water			
EPA 1311/7470A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	0.00020U	0.00020	0.0050	0.0050	100 80 - 120

Analytical Batch 632774	Client ID GCAL ID	24A-WC06-C-SO 21804031601	1792549MS 1793830		1792549MSD 1793831					
Prep Batch 632751	Sample Type Prep Date	SAMPLE 04/06/2018 08:55	MS 04/06/2018 08:55		MSD 04/06/2018 08:55					
Prep Method EPA 7470A	Analysis Date Matrix	04/06/2018 13:00 Solid	04/06/2018 13:02 Solid		04/06/2018 13:04 Solid					
EPA 1311/7470A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Mercury	7439-97-6	0.0	0.00020	0.0050	0.0056	112 80 - 120	0.0050	0.0053	106	5 20

Analytical Batch 633035	Client ID GCAL ID	MB632750 1793710	LCS632750 1793711			
Prep Batch 632750	Sample Type Prep Date	MB 04/05/2018 18:00	LCS 04/05/2018 18:00			
Prep Method EPA 3010A	Analysis Date Matrix	04/10/2018 11:38 Water	04/10/2018 11:15 Water			
EPA 1311/6020A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R
Arsenic	7440-38-2	0.00050U	0.00050	0.050	0.051	103 80 - 120
Barium	7440-39-3	0.00050U	0.00050	0.050	0.052	103 80 - 120
Cadmium	7440-43-9	0.00050U	0.00050	0.050	0.050	100 80 - 120
Chromium	7440-47-3	0.00050U	0.00050	0.050	0.052	104 80 - 120
Lead	7439-92-1	0.00050U	0.00050	0.050	0.051	101 80 - 120
Selenium	7782-49-2	0.00050U	0.00050	0.010	0.010	101 80 - 120
Silver	7440-22-4	0.00050U	0.00050	0.050	0.041	81 80 - 120

Analytical Batch 633035	Client ID GCAL ID	24A-WC06-C-SO 21804031601	1792549MS 1793824		1792549MSD 1793825					
Prep Batch 632750	Sample Type Prep Date	SAMPLE 04/05/2018 18:00	MS 04/05/2018 18:00		MSD 04/05/2018 18:00					
Prep Method EPA 3010A	Analysis Date Matrix	04/10/2018 11:19 Water	04/10/2018 11:23 Water		04/10/2018 11:27 Water					
EPA 1311/6020A		Units Result	mg/L LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Arsenic	7440-38-2	0.0	0.050	0.50	0.53	105 80 - 120	0.50	0.52	104	1 20
Barium	7440-39-3	1.82	0.050	0.50	2.48	133* 80 - 120	0.50	2.38	113	4 20
Cadmium	7440-43-9	0.0017	0.050	0.50	0.52	104 80 - 120	0.50	0.50	100	3 20
Chromium	7440-47-3	0.0044	0.050	0.50	0.55	108 80 - 120	0.50	0.53	105	4 20
Lead	7439-92-1	0.022	0.050	0.50	0.55	106 80 - 120	0.50	0.54	104	2 20
Selenium	7782-49-2	0.0025	0.050	0.10	0.090	88 80 - 120	0.10	0.098	96	9 20
Silver	7440-22-4	0.00093	0.050	0.50	0.44	87 80 - 120	0.50	0.41	82	5 20



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

General Chemistry QC Summary

Analytical Batch 632755	Client ID MB632517	GCAL ID 1792356		LCS632517 1792357			
Prep Batch 632517	Sample Type MB	Prep Date 04/03/2018 10:34		LCS 04/03/2018 10:34			
Prep Method EPA 7.3.4.2	Analysis Date 04/05/2018 16:53	Matrix Solid		04/05/2018 16:53 Solid			
EPA 9034		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Reactivity Sulfide	18496-25-8R	250U	250	1000	1234	123	47 - 135

Analytical Batch 632733	Client ID MB632515	GCAL ID 1792350		LCS632515 1792351			
Prep Batch 632515	Sample Type MB	Prep Date 04/03/2018 10:34		LCS 04/03/2018 10:34			
Prep Method EPA 7.3.3.2	Analysis Date 04/05/2018 13:38	Matrix Solid		04/05/2018 13:40 Solid			
EPA 9012B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Reactivity Cyanide	57-12-5R	250U	250	250	23.7	10	1 - 25



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

General Chromatography QC Summary

Analytical Batch		Client ID	LCS632890				LCSD632890					
633480		MB632890	1794486				1794487					
Prep Batch		Sample Type	LCS				LCSD					
632890		MB	04/09/2018 20:00				04/09/2018 20:00					
Prep Method		Analysis Date	04/11/2018 13:55				04/11/2018 14:15					
EPA 8330B		Matrix	Solid				Solid					
EPA 8330B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,3,5-Trinitrobenzene	99-35-4	0.100U	0.100	1.00	1.01	101	80 - 116	1.00	1.04	104	3	20
1,3-Dinitrobenzene	99-65-0	0.100U	0.100	1.00	0.869	87	73 - 119	1.00	0.811	81	7	20
2,4,6-Trinitrotoluene	118-96-7	0.100U	0.100	1.00	0.474	47*	71 - 120	1.00	0.439	44*	8	20
2,4-Dinitrotoluene	121-14-2	0.100U	0.100	1.00	0.792	79	75 - 121	1.00	0.822	82	4	20
2,6-Dinitrotoluene	606-20-2	0.100U	0.100	1.00	0.854	85	79 - 117	1.00	0.837	84	2	20
2-Amino-4,6-dinitrotoluene	35572-78-2	0.100U	0.100	1.00	0.879	88	71 - 123	1.00	0.935	93	6	20
2-Nitrotoluene	88-72-2	0.100U	0.100	1.00	0.575	57*	70 - 124	1.00	0.491	49*	16	20
3,5-Dinitroaniline	618-87-1	0.100U	0.100	1.00	0.721	72*	86 - 118	1.00	0.690	69*	4	20
3-Nitrotoluene	99-08-1	0.150U	0.150	1.00	0.656	66*	67 - 129	1.00	0.626	63*	5	20
4-Amino-2,6-dinitrotoluene	19406-51-0	0.100U	0.100	1.00	0.765	76	64 - 127	1.00	0.677	68	12	20
4-Nitrotoluene	99-99-0	0.100U	0.100	1.00	0.907	91	71 - 124	1.00	0.732	73	21*	20
HMX	2691-41-0	0.100U	0.100	1.00	0.988	99	74 - 124	1.00	0.994	99	1	20
Nitrobenzene	98-95-3	0.100U	0.100	1.00	0.494	49*	67 - 129	1.00	0.482	48*	2	20
Nitroglycerin	55-63-0	0.100U	0.100	1.00	0.797	80	73 - 124	1.00	0.827	83	4	20
Pentaerythritol Tetranitrate	78-11-5	0.150U	0.150	1.00	0.740	74	72 - 128	1.00	1.00	100	30*	20
RDX	121-82-4	0.100U	0.100	1.00	0.941	94	67 - 129	1.00	0.952	95	1	20
Tetryl	479-45-8	0.100U	0.100	1.00	0.082	8*	68 - 135	1.00	0.161	16*	66*	20
Surrogate												
1,2-Dinitrobenzene	528-29-0	1.13	113	1	1.13	113	78 - 119	1	1.14	114	NA	NA



Report#: 218040316

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 04/19/2018

Confirmation Summary

Report No:	218040316	Analysis Method:	EPA 8330B
Instrument ID (1):	HPLC3A	Column ID (1):	
Instrument ID (2):	HPLC3B	Column ID (2):	

GCAL ID	SAMPLE ID	CAS	ANALYTE	C1 RESULT1	C2 RESULT2	RPD
21804031602	2101A-WC01-C-SO	99-35-4	1,3,5-Trinitrobenzene	0.062J	* 0.086J	32
21804031603	2101A-WC02-C-SO	99-35-4	1,3,5-Trinitrobenzene	3.46	* 4.69	30
		118-96-7	2,4,6-Trinitrotoluene	31.0	* 32.3	4
		2691-41-0	HMX	1.42J	* 1.89J	28
		121-82-4	RDX	6.87	* 7.23	5

* - Result reported from this column.
 P - RPD greater than 40%.



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218040316
 PM: AEC



Report To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com		Bill To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com		Analytical Requests & I Explosives (SW946 8330B) Ignit/Corros/React Paint Filter TCLP SVOCs (1311/8270D) TCLP PCRA & Metals TAL Metals + Hg SVOCs (SW946 8270D) Nitrate		Custody Seal: Used: <input type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Temperature: 0.5 0.4, 2.1 47.46 / 33.00 <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered		
P.O. Number: R20179-0017 Sampled By: Katie Stout		Project Name/Number: FWDA Parcel 21, SWMU 1 and Parcel 24						
Matrix	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	Preservative / Notes	GCAL ID
S	03/29/18	1605	x		24A-WC06-C-SO	3		-1
S	03/30/18	1435	x		2101A-WC01-C-SO	2		-2
S	03/30/18	1440	x		2101A-WC02-C-SO	2		-3
S	03/30/18	935	x		2101B-EF11-0102-D-SO	2		
S	03/30/18	950	x		2101B-ES11-0105-D-SO	2		
S	03/30/18	1030	x		2101B-EF12-0102-D-SO	2		
S	03/30/18	1045	x		2101B-ES12-0105-D-SO	2		
S	03/30/18	1055	x		2101B-EF14-0506-D-SO	2		
S	03/30/18	1110	x		2101B-EF16-0506-D-SO	2		
S	03/30/18	1120	x		2101B-EF13-0102-D-SO	2		
S	03/30/18	1140	x		2101B-ES10-0105-D-SO	2		
S	03/30/18	1150	x		2101B-EF15-0506-D-SO	2		
S	03/30/18	1205	x		2101B-ES14-0510-D-SO	2		
S	03/30/18	1335	x		2101A-ES05-0005-D-SO	2		
S	03/30/18	1345	x		2101A-ES06-0005-D-SO	2		
S	03/30/18	1355	x		2101A-ES07-0005-D-SO	2		
S	03/30/18	1400	x		2101A-ES08-0005-D-SO	2		
S	03/30/18	1405	x		2101A-EF04-0506-D-SO	2		
S	04/02/18	930	x		2101B-EF17-0102-D-SO	2		
S	04/02/18	940	x		2101B-EF18-0102-D-SO	2		
S	04/02/18	1000	x		2101B-ES15-0105-D-SO	2		
S	04/02/18	1015	x		2101B-EF19-0102-D-SO	2		
S	04/02/18	1025	x		2101B-EF20-0102-D-SO	2		
S	04/02/18	1135	x		2101B-ES16-0510-D-SO	2		
S	04/02/18	1145	x		2101B-ES17-0105-D-SO	2		
S	04/02/18	1155	x		2101B-ES18-0510-D-SO	2		
S	04/02/18	1210	x		2101B-ES19-0510-D-SO	2		
S	04/02/18	1225	x		2101B-EF21-0102-D-SO	2		
S	04/02/18	1235	x		2101B-EF22-0102-D-SO	2		
S	04/02/18	1245	x		2101B-ES20-0105-D-SO	2		
S	04/02/18	1305	x		2101B-ES21-0105-D-SO	2		
S	04/02/18	1325	x		2101B-ES22-0105-D-SO	2		
S	04/02/18	1335	x		2101B-ES23-0105-D-SO	2		
S	04/02/18	1350	x		2101B-EF23-0102-D-SO	2		

*Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * Requires prior approval. Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218040316			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 275212	Received By Reese, Sean M		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 2 - Waste/TCLP 5 Day	Receive Date(s) 04/03/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4244 0505 8463		0.4				
4244 0505 8474		0.5				
4244 0505 8485		2.1				
NOTES						

Revision 1.6

Page 1 of 1



NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 05/17/2018

GCAL Report 218050934



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To

Emily McRee
Zapata Incorporated
6302 Fairview Rd
Suite 600
Charlotte, NC 28210

Additional Recipients

Cindy Westergard, HSW Engineering
Katie Stout, Zapata Incorporated





Report#: 218050934

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 05/17/2018

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218050934



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Case Narrative

Client: Zapata Incorporated Report: 218050934

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 1311/8270D analysis for prep batch 635933, the LCS/LCSD RPD is above the control limit for Pyridine. All recoveries are acceptable.

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

In the EPA 8330B analysis for prep batch 635701, the LCS and/or LCSD recoveries are above the upper control limit for 1,3,5-Trinitrobenzene, 1,3-Dinitrobenzene, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, 2-Nitrotoluene, 3-Nitrotoluene, 3,5-Dinitroaniline, 4-Nitrotoluene, HMX, Nitrobenzene, Nitroglycerin, and Pentaerythritol Tetranitrate. These analytes were not detected in the associated sample. The LCS/LCSD recoveries are below the lower control limit for Tetryl. The LCS/LCSD RPD is above the control limit for Tetryl. This is a poor performing analyte.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218050934

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 05/17/2018

Q Flag Summary

Client Sample ID: **24A-WC07-C-SO** Lab Sample ID: **21805093401**

Method: EPA 1311/8270D		Analysis Date: 5/16/2018 3:27:00 PM				
Analyte	CAS	CCV OUL	LCS/LCSD OUL	SURROGATE OUL	IS OUL	CLCCV OUL
Pyridine	110-86-1		X			

Method: EPA 8330B		Analysis Date: 5/16/2018 9:16:50 PM				
Analyte	CAS	CCV OUL	LCS/LCSD OUL	SURROGATE OUL	IS OUL	CLCCV OUL
1,3,5-Trinitrobenzene	99-35-4		X			
1,3-Dinitrobenzene	99-65-0		X			
2,4-Dinitrotoluene	121-14-2		X			
2,6-Dinitrotoluene	606-20-2		X			
2-Nitrotoluene	88-72-2		X			
3,5-Dinitroaniline	618-87-1		X			
3-Nitrotoluene	99-08-1		X			
4-Nitrotoluene	99-99-0		X			
HMX	2691-41-0		X			
Nitrobenzene	98-95-3		X			
Nitroglycerin	55-63-0		X			
Pentaerythritol Tetranitrate	78-11-5		X			
Tetryl	479-45-8		X			

CCV OUL=CCV out of limits
 LCS/LCSD OUL=LCS/LCSD out of limits
 SURROGATE OUL=Surrogate out of limits
 IS OUL=Internal Standard out of limits
 CLCCV OUL=Closing CCV out of limits



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21805093401	24A-WC07-C-SO	Solid	05/08/2018 08:20	05/09/2018 09:50



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21805093401	24A-WC07-C-SO	S	EPA 1010 Flashpoint Solid
21805093401	24A-WC07-C-SO	S	Sec. 7.3.3.2 Reactivity Prep
21805093401	24A-WC07-C-SO	S	Sec. 7.3.4.2 Reactivity Prep
21805093401	24A-WC07-C-SO	S	EPA 8330B Solid
21805093401	24A-WC07-C-SO	S	EPA 8330B Prep Solid
21805093401	24A-WC07-C-SO	S	EPA 9034 Reactivity Sulfide Solid
21805093401	24A-WC07-C-SO	S	EPA 9045 pH
21805093401	24A-WC07-C-SO	S	EPA 9095B
21805093401	24A-WC07-C-SO	S	EPA 9012A Reactivity Cyanide Solid
21805093401	24A-WC07-C-SO	S	EPA 1311/6020A TCLP
21805093401	24A-WC07-C-SO	S	EPA 6020A TCLP Prep
21805093401	24A-WC07-C-SO	S	EPA 7470A TCLP
21805093401	24A-WC07-C-SO	S	EPA 7470A TCLP Prep
21805093401	24A-WC07-C-SO	S	EPA 8270D TCLP
21805093401	24A-WC07-C-SO	S	EPA 3510D TCLP Prep
21805093401	24A-WC07-C-SO	S	TCLP Procedure Soils



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Summary of Compounds Detected

24A-WC07-C-SO	Collect Date	05/08/2018 08:20	GCAL ID	21805093401
	Receive Date	05/09/2018 09:50	Matrix	Solid

EPA 1311/6020A

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-39-3	Barium	1.88	0.025	0.050	0.10	mg/L

EPA 9045D

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.11	1.00	1.00	1.00	pH unit



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Sample Results

24A-WC07-C-SO	Collect Date	05/08/2018 08:20	GCAL ID	21805093401
	Receive Date	05/09/2018 09:50	Matrix	Solid

EPA 1311/8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
05/16/2018 09:50	635933	EPA 3510C	1	05/16/2018 15:27	DLB	635990

CAS#	Parameter	Result	DL	LOD	LOQ	Units
106-46-7	1,4-Dichlorobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-95-4	2,4,5-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
121-14-2	2,4-Dinitrotoluene	0.0050U	0.0025	0.0050	0.0100	mg/L
1319-77-3	Cresols	0.0100U	0.0050	0.0100	0.1000	mg/L
118-74-1	Hexachlorobenzene	0.0050U	0.0025	0.0050	0.0100	mg/L
87-68-3	Hexachlorobutadiene	0.0050U	0.0025	0.0050	0.0500	mg/L
67-72-1	Hexachloroethane	0.0050U	0.0025	0.0050	0.0500	mg/L
1319-77-3MP	m,p-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
98-95-3	Nitrobenzene	0.0050U	0.0025	0.0050	0.0500	mg/L
95-48-7	o-Cresol	0.0050U	0.0025	0.0050	0.0500	mg/L
87-86-5	Pentachlorophenol	0.0050U	0.0025	0.0050	0.0500	mg/L
110-86-1	Pyridine	0.0250UQ	0.0075	0.0250	0.0500	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	0.25	.217	mg/L	87	44 - 120
321-60-8	2-Fluorobiphenyl	0.25	.196	mg/L	78	44 - 119
1718-51-0	Terphenyl-d14	0.25	.224	mg/L	90	50 - 134
4165-62-2	Phenol-d5	0.50	.169	mg/L	34	10 - 123
367-12-4	2-Fluorophenol	0.50	.252	mg/L	50	19 - 119
118-79-6	2,4,6-Tribromophenol	0.50	.512	mg/L	102	43 - 140

EPA 1311/6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
05/16/2018 13:00	635950	EPA 3010A	10	05/17/2018 11:28	AWG	636011

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	0.050U	0.025	0.050	0.10	mg/L
7440-39-3	Barium	1.88	0.025	0.050	0.10	mg/L
7440-43-9	Cadmium	0.050U	0.025	0.050	0.10	mg/L
7440-47-3	Chromium	0.050U	0.025	0.050	0.10	mg/L
7439-92-1	Lead	0.050U	0.025	0.050	0.10	mg/L
7782-49-2	Selenium	0.050U	0.025	0.050	0.10	mg/L
7440-22-4	Silver	0.050U	0.025	0.050	0.10	mg/L



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Sample Results

24A-WC07-C-SO	Collect Date	05/08/2018 08:20	GCAL ID	21805093401
	Receive Date	05/09/2018 09:50	Matrix	Solid

EPA 1311/7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
05/16/2018 10:30	635839	EPA 7470A	1	05/16/2018 16:17	LWZ	635937

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.00020U	0.000070	0.00020	0.0020	mg/L

EPA 1010A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	05/10/2018 16:20	AJE	635506

CAS#	Parameter	Result	DL	LOD	LOQ	Units
000000-01-3	Flash point	>170	50	50	50	Deg F

EPA 9012B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
05/09/2018 14:42	635359	EPA 7.3.3.2	1	05/10/2018 14:40	TMT	635493

CAS#	Parameter	Result	DL	LOD	LOQ	Units
57-12-5R	Reactivity Cyanide	250U	250	250	250	mg/kg

EPA 9034

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
05/09/2018 14:42	635361	EPA 7.3.4.2	1	05/10/2018 13:47	RYC	635469

CAS#	Parameter	Result	DL	LOD	LOQ	Units
18496-25-8R	Reactivity Sulfide	250U	250	250	250	mg/kg

EPA 9045D

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	05/10/2018 09:22	SLL2	635363

CAS#	Parameter	Result	DL	LOD	LOQ	Units
pH	pH	8.11	1.00	1.00	1.00	pH unit



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Sample Results

24A-WC07-C-SO	Collect Date	05/08/2018 08:20	GCAL ID	21805093401
	Receive Date	05/09/2018 09:50	Matrix	Solid

EPA 9095B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	05/10/2018 16:42	RYC	635505

CAS#	Parameter	Result	DL	LOD	LOQ	Units
WET-044	Paint Filter	PASS				Unitless

EPA 8330B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
05/14/2018 21:28	635701	EPA 8330B	1	05/16/2018 21:16	MEG	635908

CAS#	Parameter	Result	DL	LOD	LOQ	Units
99-35-4	1,3,5-Trinitrobenzene	0.099UQ	0.042	0.099	0.198	mg/kg
99-65-0	1,3-Dinitrobenzene	0.099UQ	0.076	0.099	0.198	mg/kg
118-96-7	2,4,6-Trinitrotoluene	0.099U	0.050	0.099	0.198	mg/kg
121-14-2	2,4-Dinitrotoluene	0.099UQ	0.098	0.099	0.198	mg/kg
606-20-2	2,6-Dinitrotoluene	0.099UQ	0.060	0.099	0.198	mg/kg
35572-78-2	2-Amino-4,6-dinitrotoluene	0.099U	0.097	0.099	0.198	mg/kg
88-72-2	2-Nitrotoluene	0.099UQ	0.063	0.099	0.198	mg/kg
618-87-1	3,5-Dinitroaniline	0.099UQ	0.082	0.099	0.198	mg/kg
99-08-1	3-Nitrotoluene	0.149UQ	0.124	0.149	0.198	mg/kg
19406-51-0	4-Amino-2,6-dinitrotoluene	0.099U	0.076	0.099	0.198	mg/kg
99-99-0	4-Nitrotoluene	0.099UQ	0.076	0.099	0.198	mg/kg
2691-41-0	HMX	0.099UQ	0.026	0.099	0.198	mg/kg
98-95-3	Nitrobenzene	0.099UQ	0.036	0.099	0.198	mg/kg
55-63-0	Nitroglycerin	0.099UQ	0.073	0.099	0.198	mg/kg
78-11-5	Pentaerythritol Tetranitrate	0.149UQ	0.121	0.149	0.198	mg/kg
121-82-4	RDX	0.099U	0.018	0.099	0.198	mg/kg
479-45-8	Tetryl	0.099UQ	0.041	0.099	0.198	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
528-29-0	1,2-Dinitrobenzene	0.99	.807	mg/kg	82	78 - 119



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

GC/MS Semi-Volatiles QC Summary

Analytical Batch		Client ID	MB635933	LCS635933	LCSD635933							
635990		GCAL ID	1810381	1810382	1810383							
Prep Batch		Sample Type	MB	LCS	LCSD							
635933		Prep Date	05/16/2018 09:50	05/16/2018 09:50	05/16/2018 09:50							
Prep Method		Analysis Date	05/16/2018 09:53	05/16/2018 10:10	05/16/2018 10:26							
EPA 3510C		Matrix	Water	Water	Water							
EPA 1311/8270D		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,4-Dichlorobenzene	106-46-7	0.0050U	0.0050	0.050	0.029	59	29 - 112	0.050	0.030	60	2	30
2,4,5-Trichlorophenol	95-95-4	0.0050U	0.0050	0.050	0.042	85	53 - 123	0.050	0.043	87	3	30
2,4,6-Trichlorophenol	88-06-2	0.0050U	0.0050	0.050	0.042	83	50 - 125	0.050	0.041	82	2	30
2,4-Dinitrotoluene	121-14-2	0.0050U	0.0050	0.050	0.045	90	57 - 128	0.050	0.047	94	4	30
Cresols	1319-77-3	0.0100U	0.0100	0.100	0.059	59	24 - 125	0.100	0.061	61	3	30
Hexachlorobenzene	118-74-1	0.0050U	0.0050	0.050	0.041	82	53 - 125	0.050	0.043	87	6	30
Hexachlorobutadiene	87-68-3	0.0050U	0.0050	0.050	0.030	60	22 - 124	0.050	0.030	60	1	30
Hexachloroethane	67-72-1	0.0050U	0.0050	0.050	0.029	59	21 - 115	0.050	0.030	60	2	30
m,p-Cresol	1319-77-3MP	0.0050U	0.0050	0.050	0.029	58	29 - 110	0.050	0.029	58	0	30
Nitrobenzene	98-95-3	0.0050U	0.0050	0.050	0.036	71	45 - 121	0.050	0.036	73	2	30
o-Cresol	95-48-7	0.0050U	0.0050	0.050	0.030	60	30 - 117	0.050	0.032	64	5	30
Pentachlorophenol	87-86-5	0.0050U	0.0050	0.050	0.046	91	35 - 138	0.050	0.048	96	5	30
Pyridine	110-86-1	0.0250U	0.0250	0.050	0.011	22	10 - 120	0.050	0.00719	14	42*	30
Surrogate												
2,4,6-Tribromophenol	118-79-6	.0911	91	.1	.0968	97	43 - 140	.1	.097	97	NA	NA
2-Fluorobiphenyl	321-60-8	.0357	71	.05	.0332	66	44 - 119	.05	.0355	71	NA	NA
2-Fluorophenol	367-12-4	.0408	41	.1	.0438	44	19 - 119	.1	.0427	43	NA	NA
Nitrobenzene-d5	4165-60-0	.0384	77	.05	.0378	76	44 - 120	.05	.0395	79	NA	NA
Phenol-d5	4165-62-2	.0272	27	.1	.0273	27	10 - 123	.1	.0266	27	NA	NA
Terphenyl-d14	1718-51-0	.045	90	.05	.0465	93	50 - 134	.05	.0467	93	NA	NA



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

Inorganics QC Summary

Analytical Batch 635937	Client ID GCAL ID	MB635839 1809983	LCS635839 1809984				
Prep Batch 635839	Sample Type	MB	LCS				
Prep Method EPA 7470A	Prep Date	05/16/2018 10:30	05/16/2018 10:30				
	Analysis Date	05/16/2018 15:50	05/16/2018 15:52				
	Matrix	Water	Water				
EPA 1311/7470A		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	0.00020U	0.00020	0.0050	0.0046	93	80 - 120

Analytical Batch 636011	Client ID GCAL ID	MB635950 1810438	LCS635950 1810439				
Prep Batch 635950	Sample Type	MB	LCS				
Prep Method EPA 3010A	Prep Date	05/16/2018 16:20	05/16/2018 16:20				
	Analysis Date	05/17/2018 11:19	05/17/2018 11:23				
	Matrix	Water	Water				
EPA 1311/6020A		Units Result	mg/L LOD	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.00050U	0.00050	0.050	0.052	105	80 - 120
Barium	7440-39-3	0.00050U	0.00050	0.050	0.052	105	80 - 120
Cadmium	7440-43-9	0.00050U	0.00050	0.050	0.052	104	80 - 120
Chromium	7440-47-3	0.00050U	0.00050	0.050	0.053	106	80 - 120
Lead	7439-92-1	0.00050U	0.00050	0.050	0.051	102	80 - 120
Selenium	7782-49-2	0.00050U	0.00050	0.010	0.010	100	80 - 120
Silver	7440-22-4	0.00050U	0.00050	0.050	0.051	101	80 - 120



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

General Chemistry QC Summary

Analytical Batch 635506	Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	LCS635506 1808290 LCS NA 05/10/2018 15:10 Solid
EPA 1010A		Spike Added Result %R Control Limits%R
Flash point	000000-01-3	90 91 101 97.8 - 102.2

Analytical Batch 635469	Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB635361 1807534 MB 05/09/2018 14:42 05/10/2018 13:47 Solid	LCS635361 1807535 LCS 05/09/2018 14:42 05/10/2018 13:47 Solid				
EPA 9034		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Reactivity Sulfide	18496-25-8R	250U	250	1000	1154	115	47 - 135

Analytical Batch 635493	Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB635359 1807528 MB 05/09/2018 14:42 05/10/2018 14:10 Solid	LCS635359 1807529 LCS 05/09/2018 14:42 05/10/2018 14:13 Solid				
EPA 9012B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Reactivity Cyanide	57-12-5R	250U	250	200	2.0	1	1 - 25



Report#: 218050934

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 05/17/2018

General Chromatography QC Summary

Analytical Batch		Client ID	LCS635701		LCSD635701							
635908		MB635701	1809311		1809312							
Prep Batch		GCAL ID	LCS		LCSD							
635701		1809310	05/14/2018 21:28		05/14/2018 21:28							
Prep Method		Sample Type	05/16/2018 18:19		05/16/2018 18:39							
EPA 8330B		MB	Solid		Solid							
		Prep Date										
		Analysis Date										
		Matrix										
EPA 8330B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,3,5-Trinitrobenzene	99-35-4	0.100U	0.100	1.00	1.29	129*	80 - 116	1.00	1.24	124*	4	20
1,3-Dinitrobenzene	99-65-0	0.100U	0.100	1.00	1.29	129*	73 - 119	1.00	1.27	127*	1	20
2,4,6-Trinitrotoluene	118-96-7	0.100U	0.100	1.00	1.13	113	71 - 120	1.00	1.14	114	1	20
2,4-Dinitrotoluene	121-14-2	0.100U	0.100	1.00	1.32	132*	75 - 121	1.00	1.37	137*	3	20
2,6-Dinitrotoluene	606-20-2	0.100U	0.100	1.00	1.37	137*	79 - 117	1.00	1.30	130*	5	20
2-Amino-4,6-dinitrotoluene	35572-78-2	0.100U	0.100	1.00	1.08	108	71 - 123	1.00	1.02	102	6	20
2-Nitrotoluene	88-72-2	0.100U	0.100	1.00	1.42	142*	70 - 124	1.00	1.47	147*	4	20
3,5-Dinitroaniline	618-87-1	0.100U	0.100	1.00	1.34	134*	86 - 118	1.00	1.34	134*	0	20
3-Nitrotoluene	99-08-1	0.150U	0.150	1.00	1.48	148*	67 - 129	1.00	1.30	130*	13	20
4-Amino-2,6-dinitrotoluene	19406-51-0	0.100U	0.100	1.00	1.18	118	64 - 127	1.00	1.10	110	7	20
4-Nitrotoluene	99-99-0	0.100U	0.100	1.00	1.52	152*	71 - 124	1.00	1.30	130*	15	20
HMX	2691-41-0	0.100U	0.100	1.00	1.42	142*	74 - 124	1.00	1.40	140*	1	20
Nitrobenzene	98-95-3	0.100U	0.100	1.00	1.45	145*	67 - 129	1.00	1.42	142*	2	20
Nitroglycerin	55-63-0	0.100U	0.100	1.00	1.32	132*	73 - 124	1.00	1.57	157*	17	20
Pentaerythritol Tetranitrate	78-11-5	0.150U	0.150	1.00	1.29	129*	72 - 128	1.00	1.33	133*	3	20
RDX	121-82-4	0.100U	0.100	1.00	1.25	125	67 - 129	1.00	1.22	122	3	20
Tetryl	479-45-8	0.100U	0.100	1.00	0.282	28*	68 - 135	1.00	0.114	11*	85*	20
Surrogate												
1,2-Dinitrobenzene	528-29-0	.801	80	1	.812	81	78 - 119	1	.832	83	NA	NA



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated

SDG: 218050934

PM: AEC



Report To:				Bill To:				Analytical Requests & Method				Custody Seal: Used: <input type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temperature: <u>51, 33 Cpm</u> (E2A) <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered													
Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Explosives (SW846 8330B) Ignit/Corros/React Paint Filter TCLP SVOCs (1311/8270D) TCLP RCRA & Metals																	
P.O. Number R20179-0017		Project Name/Number FWDA Parcel 21, SWMU 1 and Parcel 24																							
Sampled By: Katie Stout																									
Matrix*	Date	Time (2400)	Comp	Grab	Sample Description	Nr of Containers																		GCAL ID	
S	05/08/18	820	x		24A-WC07-C-SO	2	X	X	X	X	X														
S	05/08/18	850		x	2101B-EF11-0102-D-SO2	2	X																		
S	05/08/18	905		x	2101B-ES11-0105-D-SO2	2	X																		
S	05/08/18	905		x	2101B-ES11-0105-D-SO2MS	2	X																		
S	05/08/18	905		x	2101B-ES11-0105-D-SO2MSD	2	X																		
S	05/08/18	940		x	2101B-EF12-0102-D-SO2	2	X																		
S	05/08/18	950		x	2101B-ES12-0105-D-SO2	2	X																		
S	05/08/18	950		x	2101B-ES12-0105-D-SO2MS	2	X																		
S	05/08/18	950		x	2101B-ES12-0105-D-SO2MSD	2	X																		
S	05/08/18	1010		x	2101B-EF14-0506-D-SO2	2	X																		
S	05/08/18	925		x	2101B-EF16-0506-D-SO2	2	X																		
S	05/08/18	1025		x	2101B-EF13-0102-D-SO2	2	X																		
S	05/08/18	1035		x	2101B-ES10-0105-D-SO2	2	X																		
S	05/08/18	1045		x	2101B-EF15-0506-D-SO2	2	X																		
S	05/08/18	1050		x	2101B-ES14-0510-D-SO2	2	X																		
S	05/08/18	1140		x	2101A-ES05-0005-D-SO2	2	X																		
S	05/08/18	1150		x	2101A-ES06-0005-D-SO2	2	X																		
S	05/08/18	1155		x	2101A-ES07-0005-D-SO2	2	X																		
S	05/08/18	1200		x	2101A-ES08-0005-D-SO2	2	X																		
S	05/08/18	1210		x	2101A-EF04-0506-D-SO2	2	X																		
S	05/08/18			x	2101B-EF-D-SODUP01	2	X																		
S	05/08/18			x	2101B-EF-D-SODUP02	2	X																		
S	05/08/18			x	2101B-EF-D-SODUP03	2	X																		
S	05/08/18			x	2101B-ES-D-SODUP04	2	X																		
S	05/08/18			x	2101A-ES-D-SODUP01	2	X																		
S	05/08/18			x	2101A-ES-D-SODUP02	2	X																		
Airbill Number: 424405058544; 424405058544																									
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* 5 Days <input type="checkbox"/> Standard (per contract/quote)																									
Requisitioned by (Signature): <i>K Stout</i>		Date/Time: 5/18/18		Received by (Signature):		Date/Time:		Notes: * only sample in work order. <i>TPS 05/18/18</i>																	
Requisitioned by (Signature): <i>TRDEX</i>		Date/Time: 5/18/18		Received by (Signature): <i>TJ...</i>		Date/Time: 5/18/18																			
Requisitioned by (Signature):		Date/Time:		Received by (Signature):		Date/Time:																			
COC 05082018																									

*Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

*. Requires prior approval, Rush charges may apply. We cannot accept v

SAMPLE DELIVERY GROUP 218050934			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 275212	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 2 - Waste/TCLP 5 Day	Receive Date(s) 05/09/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4244-0505-8533		0.6				
4244-0505-8544		1.5				
NOTES						

Revision 1.6

Page 1 of 1



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. NM6213820974	Manifest Doc No. ZAPO362		2. Page 1 of 1	0362	
3. Generator's Mailing Address: Fort Wingate Army Depot PO Box 268 Wingate, NM 87316		Generator's Site Address (if different than mailing): FORT WINGATE ARMY DEPOT 7 MILES EAST OF GALLUP WINGATE, NM 87316		A. Manifest Number WMNA		B. State Generator's No. NM6213820974	
4. Generator's Phone 505-862-2416							
5. Transporter 1 Company Name KACHINA RENTAL		6. US EPA ID Number N/A CAT000624247		C. State Transporter's ID N/A		D. Transporter's Phone 886-226-5243	
7. Transporter 2 Company Name		8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone	
9. Designated Facility Name and Site Address RED ROCK LANDFILL (SUBTITLE D) 101 RED BLUFF DRIVE THOREAU, NM 87327		10. US EPA ID Number		G. State Facility ID SWM-05174 (SP)		H. State Facility Phone 505-905-8400	
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total Quantity	14. Unit Wt / Vol	1. Misc. Comments
	a. SOIL, NON-HAZ, PARCEL 24		No.	Type			
	WM Profile #						
	b. WM Profile #						
	c. WM Profile #						
d. WM Profile #							
J. Additional Descriptions for Materials Listed Above		K. Disposal Location					
		Cell		Level			
		Grid					
15. Special Handling Instructions and Additional Information							
Purchase Order #		EMERGENCY CONTACT / PHONE NO.: 505-862-2416					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.							
Printed Name RICHARD CRUZ		Signature "On behalf of" <i>Richard Cruz</i>			Month 03	Day 07	Year 18
17. Transporter 1 Acknowledgment of Receipt of Materials							
Printed Name COSY RAINAGE		Signature <i>Cosy Rainage</i>			Month 03	Day 07	Year 18
18. Transporter 2 Acknowledgment of Receipt of Materials							
Printed Name		Signature			Month	Day	Year
19. Certificate of Final Treatment / Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.							
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.							
Printed Name <i>Conigh...</i>		Signature <i>Conigh...</i>			Month 3	Day 7	Year 18

WHITE • Treatment, Storage, Disposal Facility Copy GREEN • Generator #2 Copy CANARY • Generator #1 Copy
 PINK • Facility Use Only GOLDENROD • Transporter #1 Copy



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. NM6213820974		Manifest Doc No. ZAP0773		2. Page 1 of 1		SHIPMENT 0773												
3. Generator's Mailing Address: Fort Wingate Army Depot PO Box 268 Wingate, NM 87316			Generator's Site Address (if different than mailing): FORT WINGATE ARMY DEPOT 7 MILES EAST OF GALLUP WINGATE, NM 87316			A. Manifest Number WMNA		B. State Generator's No. NM6213820974												
4. Generator's Phone 505-862-2416			5. Transporter 1 Company Name KACHINA RENTAL			6. US EPA ID Number N/A CAT000624247		C. State Transporter's ID N/A												
7. Transporter 2 Company Name			8. US EPA ID Number			D. Transporter's Phone 886-226-5243		E. State Transporter's ID												
9. Designated Facility Name and Site Address RED ROCK LANDFILL (SUBTITLE D) 101 RED BLUFF DRIVE THOREAU, NM 87327			10. US EPA ID Number			F. Transporter's Phone		G. State Facility ID SWM-05174 (SP)												
						H. State Facility Phone 505-905-8400														
GENERATOR	11. Description of Waste Materials				12. Containers		13. Total Quantity	14. Unit Wt / Vol	1. Misc. Comments											
	a. SOIL, NON-HAZ, PARCEL 24 (ROLLUFF 1) NUMB SW/WM Profile # 7350-2018-1				No. Type		8	Y												
	b. WM Profile #																			
	c. WM Profile #																			
	d. WM Profile #																			
J. Additional Descriptions for Materials Listed Above				K. Disposal Location																
				Cell		Level														
				Grid																
15. Special Handling Instructions and Additional Information																				
Purchase Order #					EMERGENCY CONTACT / PHONE NO.: 505-862-2416															
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.																				
Printed Name RICHARD CRUZ				Signature "On behalf of" <i>[Signature]</i>				Month 03	Day 28	Year 18										
TRANSPORTER										17. Transporter 1 Acknowledgment of Receipt of Materials										
										Printed Name <i>[Signature]</i>				Signature <i>[Signature]</i>				Month 3	Day 28	Year 18
										18. Transporter 2 Acknowledgment of Receipt of Materials										
FACILITY										19. Certificate of Final Treatment / Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.										
										20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.										
										Printed Name <i>[Signature]</i>				Signature <i>[Signature]</i>				Month 3	Day 28	Year 18

WHITE • Treatment, Storage, Disposal Facility Copy GREEN • Generator #2 Copy CANARY • Generator #1 Copy
 PINK • Facility Use Only GOLDENROD • Transporter #1 Copy



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. NM6213820974		Manifest Doc No. ZAP0784		2. Page 1 of 1		0784		
3. Generator's Mailing Address: Fort Wingate Army Depot PO Box 268 Wingate, NM 87316			Generator's Site Address (if different than mailing): FORT WINGATE ARMY DEPOT 7 MILES EAST OF GALLUP WINGATE, NM 87316			A. Manifest Number WMNA		B. State Generator's No. NM6213820974		
4. Generator's Phone 505-862-2416			5. Transporter 1 Company Name KACHINA RENTAL			6. US EPA ID Number N/A CAT000624247		C. State Transporter's ID N/A		
7. Transporter 2 Company Name			8. US EPA ID Number			D. Transporter's Phone 886-226-5243		E. State Transporter's ID		
9. Designated Facility Name and Site Address RED ROCK LANDFILL (SUBTITLE D) 101 RED BLUFF DRIVE THOREAU, NM 87327			10. US EPA ID Number			F. Transporter's Phone		G. State Facility ID SWM-05174 (SP)		
						H. State Facility Phone 505-905-8400				
GENERATOR	11. Description of Waste Materials				12. Containers		13. Total Quantity	14. Unit Wt / Vol	1. Misc. Comments	
	a. SOIL, NON-HAZ. PARCEL 24 ILLITEZ NNMPSWA WM Profile # 7350 2018 A				No.	Type	8	Y		
	b. WM Profile #									
	c. WM Profile #									
	d. WM Profile #									
J. Additional Descriptions for Materials Listed Above					K. Disposal Location					
					Cell		Level			
					Grid					
15. Special Handling Instructions and Additional Information										
Purchase Order #					EMERGENCY CONTACT / PHONE NO.: 505-862-2416					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.										
Printed Name RICHARD CEVEZ				Signature "On behalf of" <i>Richard Ceviz</i>				Month 03	Day 28	Year 18
TRANSPORTER	17. Transporter 1 Acknowledgment of Receipt of Materials									
	Printed Name <i>Brian B...</i>			Signature <i>Brian B...</i>		Month 3	Day 28	Year 18		
18. Transporter 2 Acknowledgment of Receipt of Materials										
Printed Name			Signature		Month	Day	Year			
FACILITY	19. Certificate of Final Treatment / Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.									
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.									
Printed Name <i>Co. Bennett</i>				Signature <i>RB</i>				Month 3	Day 28	Year 18

WHITE • Treatment, Storage, Disposal Facility Copy GREEN • Generator #2 Copy CANARY • Generator #1 Copy
 PINK • Facility Use Only GOLDENROD • Transporter #1 Copy



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. NM6213820974		Manifest Doc No. ZAP1136		2. Page 1 of 1		SHIPMENT 1136			
3. Generator's Mailing Address: Fort Wingate Army Depot PO Box 268 Wingate, NM 87316			Generator's Site Address (if different than mailing): FORT WINGATE ARMY DEPOT 7 MILES EAST OF GALLUP WINGATE, NM 87316			A. Manifest Number WMNA		B. State Generator's No. NM6213820974			
4. Generator's Phone 505-862-2416			5. Transporter 1 Company Name KACHINA RENTAL			6. US EPA ID Number N/A CAT000624247		C. State Transporter's ID N/A			
7. Transporter 2 Company Name			8. US EPA ID Number			D. Transporter's Phone 886-226-5243		E. State Transporter's ID			
9. Designated Facility Name and Site Address RED ROCK LANDFILL (SUBTITLE D) 101 RED BLUFF DRIVE THOREAU, NM 87327			10. US EPA ID Number			F. Transporter's Phone		G. State Facility ID SWM-05174 (SP)			
						H. State Facility Phone 505-905-8400					
GENERATOR	11. Description of Waste Materials					12. Containers		13. Total Quantity	14. Unit Wt / Vol	1. Misc. Comments	
	a. SOIL, NON HAZ. PARCEL 24 (roll off) PARCEL 24 (roll off) WM Profile # T3502-2018-A					No.	Type	8	Y		
	b. WM Profile #										
	c. WM Profile #										
	d. WM Profile #										
J. Additional Descriptions for Materials Listed Above					K. Disposal Location						
					Cell		Level				
					Grid						
15. Special Handling Instructions and Additional Information											
Purchase Order #					EMERGENCY CONTACT / PHONE NO.: 505-862-2416						
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.											
Printed Name RICHARD CRUZ					Signature "On behalf of" Richard Cruz			Month	Day	Year	
								04	24	18	
TRANSPORTER	17. Transporter 1 Acknowledgment of Receipt of Materials								Month	Day	Year
	Printed Name			Signature							
18. Transporter 2 Acknowledgment of Receipt of Materials								Month	Day	Year	
Printed Name			Signature								
FACILITY	19. Certificate of Final Treatment / Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.										
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.										
Printed Name R. Bennett					Signature RB			Month	Day	Year	
								4	24	18	

WHITE • Treatment, Storage, Disposal Facility Copy GREEN • Generator #2 Copy CANARY • Generator #1 Copy
 PINK • Facility Use Only GOLDENROD • Transporter #1 Copy



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. NM6213820974		Manifest Doc No. ZAP1169		2. Page 1 of 1		SUBMIT 1169		
3. Generator's Mailing Address: Fort Wingate Army Depot PO Box 268 Wingate, NM 87316			Generator's Site Address (if different than mailing): FORT WINGATE ARMY DEPOT 7 MILES EAST OF GALLUP WINGATE, NM 87316			A. Manifest Number WMNA		B. State Generator's No. NM6213820974		
4. Generator's Phone 505-862-2416			5. Transporter 1 Company Name KACHINA RENTAL			6. US EPA ID Number N/A CAT000624247		C. State Transporter's ID N/A		
7. Transporter 2 Company Name			8. US EPA ID Number			D. Transporter's Phone 886-226-5243		E. State Transporter's ID		
9. Designated Facility Name and Site Address RED ROCK LANDFILL (SUBTITLE D) 101 RED BLUFF DRIVE THOREAU, NM 87327			10. US EPA ID Number			F. Transporter's Phone		G. State Facility ID SWM-05174 (SP)		
						H. State Facility Phone 505-905-8400				
GENERATOR	11. Description of Waste Materials					12. Containers		13. Total Quantity	14. Unit Vt / Vol	1. Misc. Comments
	a. SOIL NON-HAZ. ROLLOFF #5 PARCEL 24 NARSWA WM Profile # 7350-2018-A					No.	Type	2	Y	
	b. WM Profile #									
	c. WM Profile #									
	d. WM Profile #									
	J. Additional Descriptions for Materials Listed Above					K. Disposal Location				
					Cell	Level				
15. Special Handling Instructions and Additional Information					Grid					
Purchase Order #					EMERGENCY CONTACT / PHONE NO.: 505-862-2416					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.										
Printed Name RICHARD CRUZ					Signature "On behalf of" Richard Cruz			Month 05	Day 24	Year 18
TRANSPORTER	17. Transporter 1 Acknowledgment of Receipt of Materials					Month	Day	Year		
	Printed Name			Signature		6	24	18		
PORTER	18. Transporter 2 Acknowledgment of Receipt of Materials					Month	Day	Year		
	Printed Name			Signature						
FACILITY	19. Certificate of Final Treatment / Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.									
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.									
Printed Name Lennia Longo					Signature L. Longo			Month 5	Day 24	Year 18

WHITE • Treatment, Storage, Disposal Facility Copy GREEN • Generator #2 Copy CANARY • Generator #1 Copy
 PINK • Facility Use Only GOLDENROD • Transporter #1 Copy

****DUPLICATE TICKET****
 101 Reid Mesa Bluffs Drive
 PO Box 1330 Thoreau NM 87323
 (505)905-8402

007350 ZAPATA INC.
 6302 FAIRVIEW RD STE 600
 CHARLOTTE NC 28210

SITE		TICKET		GRID		WEIGHMASTER	
02		00107681		Leniah			
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF		
03/07/18	03/07/18	09:51	10:14				
REFERENCE		ORIGIN					
FT.WINGATE		MCKINLEY COUNTY					

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
6.53	TON	ADC	8.400	54.85	2.74	57.59
Inbound - Charge ticket						

Operating hours 8AM to 4:30PM Monday thru Friday. This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Driver was ON/OFF vehicle during weighing.
 PO/ Job# R20179-019
 GPS N35.25.648 W108.06.590 EL. 7007
 Comment MAN#ZAP0362--TRK#120

NET AMOUNT	57.59
TENDERED	
CHANGE	
CHECK NO.	

WW/6TI TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE 

DUPLICATE TICKET
 101 Red Mesa Bluffs Drive
 PO Box 1330 Thoreau NM 87323
 (505)905-8402

Parcel 24

007350 ZAPATA INC.
 6302 FAIRVIEW RD STE 600
 CHARLOTTE NC 28210

SITE	TICKET	GRID	WEIGHMASTER
02	00109052		Rai
DATE IN	DATE OUT	TIME IN	TIME OUT
03/28/18	03/28/18	12.48	13:22
		VEHICLE	ROLL OFF
REFERENCE		ORIGIN	
FT. WINGATE		MCKINLEY COUNTY	

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
6.71	TON ADC	Scale 1 Gross Wt.				
		Scale 1 Tare Wt.				
		Net Weight				
			8.000	53.68	2.68	56.36

Operating hours 8AM to 4:30PM Monday thru Friday. This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Driver was ON/OFF vehicle during weighing.
 PO/ Job# R20179-019
 GPS N35.25.648.W108.06.590.EL-7007
 Comment MAN#0773

NET AMOUNT	56.36
TENDERED	
CHANGE	
CHECK NO.	

Bobel Rand

WW671 TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE

****DUPLICATE TICKET****
 101 R. Mesa Bluffs Drive
 PO Box 1330 Thoreau NM 87323
 (505)905-8402

Parcel 24

007350 ZAPATA INC.
 6302 FAIRVIEW RD STE 600
 CHARLOTTE NC 28210

SITE		TICKET		GRID		WEIGHMASTER	
02		00109077		Rai			
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF		
03/28/18	03/28/18	15:08	15:39				
REFERENCE		ORIGIN					
FT.WINGATE		MCKINLEY COUNTY					

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
58000	LB	Scale 1 Gross Wt.				
40300	LB	Scale 1 Tare Wt.				
17700	LB	Net Weight				
8.85	TON	ADC	8.000	70.80	3.54	74.34

Operating hours 8AM to 4:30PM Monday thru Friday. This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Driver was ON/OFF vehicle during weighing.

PO/ Job# R20179-019
 GPS N35.25.648.W108.06.590.EL-7007
 Comment MAN#ZAP0784

NET AMOUNT
 74.34
 TENDERED
 CHANGE
 CHECK NO.

Barbara B...

SIGNATURE

WW6TI TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767

*DUPLICATE TICKET**
 01 Rcd Mesa Bluffs Drive
 O Box 1330 Thoreau NM 87323
 505)905-8402

107350 ZAPATA INC.
 6302 FAIRVIEW RD STE 600
 CHARLOTTE NC 28210

Manual Gross Wt. LB
 Scale 1 Tare Wt. LB
 Net Weight LB

Inbound - Charge ticket

SITE		TICKET		GRID		WEIGHMASTER															
02		00110546					Rai														
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF																
04/24/18	04/24/18	11:08	11:33																		
REFERENCE		ORIGIN																			
FT. WINGATE		MCKINLEY COUNTY																			
<table border="1"> <thead> <tr> <th>QTY.</th> <th>UNIT</th> <th>DESCRIPTION</th> <th>RATE</th> <th>EXTENSION</th> <th>FEE</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>8.51</td> <td>TON</td> <td>ADC</td> <td>8.000</td> <td>68.08</td> <td>3.40</td> <td>71.48</td> </tr> </tbody> </table>								QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL	8.51	TON	ADC	8.000	68.08	3.40	71.48
QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL															
8.51	TON	ADC	8.000	68.08	3.40	71.48															
Operating hours 8AM to 4:30PM Monday thru Friday. This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type. Driver was ON/OFF vehicle during weighing. PO/ Job# R20179-019 GPS N35.25.648.W108.06.590.EL-7007 Comment MAN#ZAP1136																					
						NET AMOUNT	71.48														
						TENDERED															
						CHANGE															
						CHECK NO.															

R. Stolpund

SIGNATURE

WW6TI TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767

DUPLICATE TICKET
 101 Red Mesa Bluffs Drive
 PO Box 1330 Thoreau NM 87323
 (505)905-8402

007350 ZAPATA INC.
 6302 FAIRVIEW RD STE 600
 CHARLOTTE NC 28210

SITE	TICKET	GRID	WEIGHMASTER		
02	00111938		Leniah		
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
05/24/18	05/24/18	10:18	10:18	120	
REFERENCE		ORIGIN			
FT.WINGATE		MCKINLEY COUNTY			

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
1.98	TON ADC		8.000	15.84	0.79	16.63

Inbound - Charge ticket

Manual Gross Wt. 43660 LB
 Manual Tare Wt. 39700 LB
 Net Weight 3960 LB

Operating hours 8AM to 4:30PM Monday thru Friday. This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.

Driver was ON/OFF vehicle during weighing.
 PO/ Job# R20179-019
 GPS N35.25.648 W108.06.590 EL.7007
 Comment MAN#ZAP1169

*parcel 24
 roll off #5*



NET AMOUNT	16.63
TENDERED	
CHANGE	
CHECK NO.	

WW6TI TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE

Appendix E
Confirmation Sample Laboratory Reports (Electronic Only)

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LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 08/26/2019

GCAL Report 218020733



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To	Additional Recipients
Emily McRee Zapata Incorporated 6302 Fairview Rd Suite 600 Charlotte, NC 28210	NONE





Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218020733



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Case Narrative

Client: Zapata Incorporated Report: 218020733

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

METALS

In the EPA 6020B analysis, a chemical or physical interference necessitated a dilution for all samples. This is reflected in elevated detection limits. Additional dilutions were required to bracket the concentration of target analytes within the calibration range of the instrument.

In the EPA 6020B analysis for prep batch 628648, the MS and/or MSD recovery is outside the control limits for Arsenic. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference or the element is non-homogeneous in the sample. A post-digestion spike was performed. The MS/MSD recoveries and RPD are not applicable for Lead because the sample concentration is greater than four times the spike concentration.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218020733
Project ID: FWDA Parcel21,SWMU1 & Parcel24
Report Date: 08/26/2019

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802073301	24A969-EFL-D-SO	Solid	02/06/2018 13:10	02/07/2018 10:00
21802073302	24A969-EFR-D-SO	Solid	02/06/2018 13:15	02/07/2018 10:00
21802073303	24A970-EFL-D-SO	Solid	02/06/2018 13:25	02/07/2018 10:00
21802073304	24A970-EFR-D-SO	Solid	02/06/2018 13:30	02/07/2018 10:00
21802073305	24A971-EFL-D-SO	Solid	02/06/2018 13:35	02/07/2018 10:00
21802073306	24A971-EFR-D-SO	Solid	02/06/2018 13:40	02/07/2018 10:00
21802073307	24A975-EFR-D-SO	Solid	02/06/2018 13:45	02/07/2018 10:00
21802073308	24A976-EFL-D-SO	Solid	02/06/2018 13:50	02/07/2018 10:00
21802073309	24A976-EFR-D-SO	Solid	02/06/2018 13:55	02/07/2018 10:00
21802073310	24A977-EFL-D-SO	Solid	02/06/2018 14:00	02/07/2018 10:00
21802073311	24A977-EFR-D-SO	Solid	02/06/2018 14:05	02/07/2018 10:00



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802073301	24A969-EFL-D-SO	S	EPA 6020A
21802073301	24A969-EFL-D-SO	S	EPA 6020 Solid Prep
21802073301	24A969-EFL-D-SO	S	EPA 7471B
21802073301	24A969-EFL-D-SO	S	EPA 7471B Solid Prep
21802073301	24A969-EFL-D-SO	S	Dry Weight/Percent Moisture
21802073302	24A969-EFR-D-SO	S	EPA 6020A
21802073302	24A969-EFR-D-SO	S	EPA 6020 Solid Prep
21802073302	24A969-EFR-D-SO	S	EPA 7471B
21802073302	24A969-EFR-D-SO	S	EPA 7471B Solid Prep
21802073302	24A969-EFR-D-SO	S	Dry Weight/Percent Moisture
21802073303	24A970-EFL-D-SO	S	EPA 6020A
21802073303	24A970-EFL-D-SO	S	EPA 6020 Solid Prep
21802073303	24A970-EFL-D-SO	S	EPA 7471B
21802073303	24A970-EFL-D-SO	S	EPA 7471B Solid Prep
21802073303	24A970-EFL-D-SO	S	Dry Weight/Percent Moisture
21802073304	24A970-EFR-D-SO	S	EPA 6020A
21802073304	24A970-EFR-D-SO	S	EPA 6020 Solid Prep
21802073304	24A970-EFR-D-SO	S	EPA 7471B
21802073304	24A970-EFR-D-SO	S	EPA 7471B Solid Prep
21802073304	24A970-EFR-D-SO	S	Dry Weight/Percent Moisture
21802073305	24A971-EFL-D-SO	S	EPA 6020A
21802073305	24A971-EFL-D-SO	S	EPA 6020 Solid Prep
21802073305	24A971-EFL-D-SO	S	EPA 7471B
21802073305	24A971-EFL-D-SO	S	EPA 7471B Solid Prep
21802073305	24A971-EFL-D-SO	S	Dry Weight/Percent Moisture
21802073306	24A971-EFR-D-SO	S	EPA 6020A
21802073306	24A971-EFR-D-SO	S	EPA 6020 Solid Prep
21802073306	24A971-EFR-D-SO	S	EPA 7471B
21802073306	24A971-EFR-D-SO	S	EPA 7471B Solid Prep
21802073306	24A971-EFR-D-SO	S	Dry Weight/Percent Moisture
21802073307	24A975-EFR-D-SO	S	EPA 6020A
21802073307	24A975-EFR-D-SO	S	EPA 6020 Solid Prep
21802073307	24A975-EFR-D-SO	S	EPA 7471B
21802073307	24A975-EFR-D-SO	S	EPA 7471B Solid Prep
21802073307	24A975-EFR-D-SO	S	Dry Weight/Percent Moisture
21802073308	24A976-EFL-D-SO	S	EPA 6020A
21802073308	24A976-EFL-D-SO	S	EPA 6020 Solid Prep
21802073308	24A976-EFL-D-SO	S	EPA 7471B
21802073308	24A976-EFL-D-SO	S	EPA 7471B Solid Prep
21802073308	24A976-EFL-D-SO	S	Dry Weight/Percent Moisture
21802073309	24A976-EFR-D-SO	S	EPA 6020A
21802073309	24A976-EFR-D-SO	S	EPA 6020 Solid Prep
21802073309	24A976-EFR-D-SO	S	EPA 7471B
21802073309	24A976-EFR-D-SO	S	EPA 7471B Solid Prep
21802073309	24A976-EFR-D-SO	S	Dry Weight/Percent Moisture
21802073310	24A977-EFL-D-SO	S	EPA 6020A
21802073310	24A977-EFL-D-SO	S	EPA 6020 Solid Prep
21802073310	24A977-EFL-D-SO	S	EPA 7471B
21802073310	24A977-EFL-D-SO	S	EPA 7471B Solid Prep
21802073310	24A977-EFL-D-SO	S	Dry Weight/Percent Moisture



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary (Continued)

GCAL ID	Client ID	Matrix	Procedure
21802073311	24A977-EFR-D-SO	S	EPA 6020A
21802073311	24A977-EFR-D-SO	S	EPA 6020 Solid Prep
21802073311	24A977-EFR-D-SO	S	EPA 7471B
21802073311	24A977-EFR-D-SO	S	EPA 7471B Solid Prep
21802073311	24A977-EFR-D-SO	S	Dry Weight/Percent Moisture



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A969-EFL-D-SO	Collect Date	02/06/2018 13:10	GCAL ID	21802073301
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	7.10	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	1630	11.1	22.1	44.3	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.041	0.0044	0.011	0.011	mg/kg

24A969-EFR-D-SO	Collect Date	02/06/2018 13:15	GCAL ID	21802073302
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.69	0.16	0.32	0.64	mg/kg
7439-92-1	Lead	143	1.59	3.18	6.37	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.040	0.0077	0.019	0.019	mg/kg

24A970-EFL-D-SO	Collect Date	02/06/2018 13:25	GCAL ID	21802073303
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.43	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	55.7	1.06	2.12	4.23	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A970-EFL-D-SO	Collect Date	02/06/2018 13:25	GCAL ID	21802073303
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.023	0.0051	0.013	0.013	mg/kg

24A970-EFR-D-SO	Collect Date	02/06/2018 13:30	GCAL ID	21802073304
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.75	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	90.7	1.11	2.21	4.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.031	0.0053	0.013	0.013	mg/kg

24A971-EFL-D-SO	Collect Date	02/06/2018 13:35	GCAL ID	21802073305
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.05	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	81.2	1.12	2.23	4.46	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.053	0.0050	0.012	0.012	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A971-EFR-D-SO	Collect Date	02/06/2018 13:40	GCAL ID	21802073306
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.70	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	53.4	1.06	2.12	4.24	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.045	0.0052	0.013	0.013	mg/kg

24A975-EFR-D-SO	Collect Date	02/06/2018 13:45	GCAL ID	21802073307
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.34	0.10	0.21	0.42	mg/kg
7439-92-1	Lead	93.7	1.05	2.09	4.18	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0050	0.012	0.012	mg/kg

24A976-EFL-D-SO	Collect Date	02/06/2018 13:50	GCAL ID	21802073308
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.70	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	227	1.09	2.17	4.35	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A976-EFL-D-SO	Collect Date	02/06/2018 13:50	GCAL ID	21802073308
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.024	0.0050	0.013	0.013	mg/kg

24A976-EFR-D-SO	Collect Date	02/06/2018 13:55	GCAL ID	21802073309
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.00	0.10	0.21	0.41	mg/kg
7439-92-1	Lead	416	2.07	4.15	8.30	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.023	0.0049	0.012	0.012	mg/kg

24A977-EFL-D-SO	Collect Date	02/06/2018 14:00	GCAL ID	21802073310
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.61	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	60.3	1.13	2.27	4.53	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.013J	0.0053	0.013	0.013	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A977-EFR-D-SO	Collect Date	02/06/2018 14:05	GCAL ID	21802073311
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	964	110	220	430	ug/Kg
7439-92-1	Lead	83.0	1.08	2.16	4.33	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.014	0.0052	0.013	0.013	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A969-EFL-D-SO	Collect Date	02/06/2018 13:10	GCAL ID	21802073301
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 16:01	AWG	628867
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	7.10	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	1000	02/11/2018 12:57	AWG	628870
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	1630	11.1	22.1	44.3	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 13:58	LWZ	628768
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.041	0.0044	0.011	0.011	mg/kg

24A969-EFR-D-SO	Collect Date	02/06/2018 13:15	GCAL ID	21802073302
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 16:40	AWG	628867
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.69	0.16	0.32	0.64	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A969-EFR-D-SO	Collect Date	02/06/2018 13:15	GCAL ID	21802073302
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:08	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	143	1.59	3.18	6.37	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:04	LWZ	628768

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.040	0.0077	0.019	0.019	mg/kg

24A970-EFL-D-SO	Collect Date	02/06/2018 13:25	GCAL ID	21802073303
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 16:47	AWG	628867

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.43	0.11	0.21	0.42	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:11	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	55.7	1.06	2.12	4.23	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A970-EFL-D-SO	Collect Date	02/06/2018 13:25	GCAL ID	21802073303
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:05	LWZ	628768

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.023	0.0051	0.013	0.013	mg/kg

24A970-EFR-D-SO	Collect Date	02/06/2018 13:30	GCAL ID	21802073304
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 16:55	AWG	628867

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.75	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:15	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	90.7	1.11	2.21	4.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:07	LWZ	628768

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.031	0.0053	0.013	0.013	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A971-EFL-D-SO	Collect Date	02/06/2018 13:35	GCAL ID	21802073305
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 17:02	AWG	628867
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.05	0.11	0.22	0.45	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:19	AWG	628870
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	81.2	1.12	2.23	4.46	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:09	LWZ	628768
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.053	0.0050	0.012	0.012	mg/kg

24A971-EFR-D-SO	Collect Date	02/06/2018 13:40	GCAL ID	21802073306
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 17:10	AWG	628867
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.70	0.11	0.21	0.42	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A971-EFR-D-SO	Collect Date	02/06/2018 13:40	GCAL ID	21802073306
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:23	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	53.4	1.06	2.12	4.24	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:11	LWZ	628768

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.045	0.0052	0.013	0.013	mg/kg

24A975-EFR-D-SO	Collect Date	02/06/2018 13:45	GCAL ID	21802073307
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 17:18	AWG	628867

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.34	0.10	0.21	0.42	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:27	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	93.7	1.05	2.09	4.18	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A975-EFR-D-SO	Collect Date	02/06/2018 13:45	GCAL ID	21802073307
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:21	LWZ	628768

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0050	0.012	0.012	mg/kg

24A976-EFL-D-SO	Collect Date	02/06/2018 13:50	GCAL ID	21802073308
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 17:25	AWG	628867

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.70	0.11	0.22	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:31	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	227	1.09	2.17	4.35	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:23	LWZ	628768

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.024	0.0050	0.013	0.013	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A976-EFR-D-SO	Collect Date	02/06/2018 13:55	GCAL ID	21802073309
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 17:33	AWG	628867
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.00	0.10	0.21	0.41	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	200	02/11/2018 12:34	AWG	628870
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	416	2.07	4.15	8.30	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:25	LWZ	628768
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.023	0.0049	0.012	0.012	mg/kg

24A977-EFL-D-SO	Collect Date	02/06/2018 14:00	GCAL ID	21802073310
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/09/2018 17:41	AWG	628867
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.61	0.11	0.23	0.45	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A977-EFL-D-SO	Collect Date	02/06/2018 14:00	GCAL ID	21802073310
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:38	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	60.3	1.13	2.27	4.53	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:27	LWZ	628768

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.013J	0.0053	0.013	0.013	mg/kg

24A977-EFR-D-SO	Collect Date	02/06/2018 14:05	GCAL ID	21802073311
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	100	02/11/2018 12:53	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	83.0	1.08	2.16	4.33	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 12:45	628648	EPA 3050B	10	02/11/2018 15:01	AWG	628870

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	964	110	220	430	ug/Kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A977-EFR-D-SO	Collect Date	02/06/2018 14:05	GCAL ID	21802073311
	Receive Date	02/07/2018 10:00	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/08/2018 17:05	628673	EPA 7471B	1	02/09/2018 14:28	LWZ	628768

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.014	0.0052	0.013	0.013	mg/kg



Report#: 218020733

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 628768	Client ID GCAL ID	MB628673 1772674	LCS628673 1772675				
Prep Batch 628673	Sample Type Prep Date	MB 02/08/2018 17:05	LCS 02/08/2018 17:05				
Prep Method EPA 7471B	Analysis Date Matrix	02/09/2018 13:54 Solid	02/09/2018 13:56 Solid				
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	0.010U	0.010	0.25	0.25	99	80 - 124

Analytical Batch 628768	Client ID GCAL ID	24A969-EFL-D-SO 21802073301	1772233MS 1772692					1772233MSD 1772693				
Prep Batch 628673	Sample Type Prep Date	SAMPLE 02/08/2018 17:05	MS 02/08/2018 17:05					MSD 02/08/2018 17:05				
Prep Method EPA 7471B	Analysis Date Matrix	02/09/2018 13:58 Solid	02/09/2018 14:00 Solid					02/09/2018 14:02 Solid				
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Mercury	7439-97-6	0.037	0.011	0.25	0.30	104	80 - 124	0.25	0.29	101	3	30

Analytical Batch 628867	Client ID GCAL ID	MB628648 1772551	LCS628648 1772552				
Prep Batch 628648	Sample Type Prep Date	MB 02/08/2018 12:45	LCS 02/08/2018 12:45				
Prep Method EPA 3050B	Analysis Date Matrix	02/09/2018 15:54 Solid	02/09/2018 15:58 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.020U	0.020	2.00	2.11	105	82 - 118
Lead	7439-92-1	0.020U	0.020	2.00	1.97	98	84 - 118

Analytical Batch 628867	Client ID GCAL ID	24A969-EFL-D-SO 21802073301	1772233MS 1772553					1772233MSD 1772554				
Prep Batch 628648	Sample Type Prep Date	SAMPLE 02/08/2018 12:45	MS 02/08/2018 12:45					MSD 02/08/2018 12:45				
Prep Method EPA 3050B	Analysis Date Matrix	02/09/2018 16:01 Solid	02/09/2018 16:09 Solid					02/09/2018 16:17 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Arsenic	7440-38-2	7.10	0.22	2.21	11.4	195*	82 - 118	2.21	11.1	180*	3	30

Analytical Batch 628870	Client ID GCAL ID	24A969-EFL-D-SO 21802073301	1772233MS 1772553					1772233MSD 1772554				
Prep Batch 628648	Sample Type Prep Date	SAMPLE 02/08/2018 12:45	MS 02/08/2018 12:45					MSD 02/08/2018 12:45				
Prep Method EPA 3050B	Analysis Date Matrix	02/11/2018 12:57 Solid	02/11/2018 13:01 Solid					02/11/2018 13:05 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Lead	7439-92-1	1630	22.1	2.21	2550	41300*	84 - 118	2.21	2640	45700*	4	30



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218020733
 PM: AEC

Report To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com		Bill To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com		Analytical Requests & Method Explosives (8330B) <input type="checkbox"/> Ign/Cor/React (1010A/1030 SW) <input type="checkbox"/> Paint Filter (9095) <input type="checkbox"/> TCLP SVOCs (1311/8270D) <input type="checkbox"/> TCLP RCRA 8 Metals (1311/8) <input type="checkbox"/> Pb, Hg, & As (SW846 6010C) <input checked="" type="checkbox"/>				Custody Seal: Used: <input type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Temperature: 2.4 E29 55CPM <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered				
P.O. Number: R20179-0005		Project Name/Number: FWDA Parcel 21, SWMU 1 and Parcel 24		Sampled By: Katie Stout				GCAL ID				
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	← Preservative / Notes ↓			GCAL ID		
S	02/06/18	950	x		2101B-WC11-C-SO	2	x	x	x	x		
S	02/06/18	1000	x		2101B-WC12-C-SO	2	x	x	x	x		
S	02/06/18	1015	x		2101B-WC13-C-SO	2	x	x	x	x		
S	02/06/18	1030	x		2101B-WC14-C-SO	2	x	x	x	x		
S	02/06/18	1110	x		2101B-WC15-C-SO	1						1
S	02/06/18	1310	x		24A969-EFL-D-SO	1						2
S	02/06/18	1315	x		24A969-EFR-D-SO	1						3
S	02/06/18	1325	x		24A970-EFL-D-SO	1						4
S	02/06/18	1330	x		24A970-EFR-D-SO	1						5
S	02/06/18	1335	x		24A971-EFL-D-SO	1						6
S	02/06/18	1340	x		24A971-EFR-D-SO	1						7
S	02/06/18	1345	x		24A975-EFR-D-SO	1						8
S	02/06/18	1350	x		24A976-EFL-D-SO	1						9
S	02/06/18	1355	x		24A976-EFR-D-SO	1						10
S	02/06/18	1400	x		24A977-EFL-D-SO	1						11
S	02/06/18	1405	x		24A977-EFR-D-SO	1						
Airbill Number: 424405056600				<input checked="" type="checkbox"/> RUSH* 3 & 5 <input type="checkbox"/> Standard (per contract/quote)								
Turn Around Time(Business Days):		<input checked="" type="checkbox"/> RUSH* 3 & 5 <input type="checkbox"/> Standard (per contract/quote)		Notes: *only samples in W.O. - TDS 02/07/18								
Relinquished by (Signature): Katie Stout	Date/Time: 2/6 1545	Received by (Signature): Tiffany Sawyer	Date/Time: 1000	*3 day TAT for Pb, Hg & As (11 samples); 5 day TAT for remaining 5 samples								
Relinquished by (Signature): FedEx	Date/Time: 2/7/18	Received by (Signature): Tiffany Sawyer	Date/Time: 2/7/18	COC 02062018								

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

*. Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218020733			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274613	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 6 - 3 BD Task8 Igloo Drains	Receive Date(s) 02/07/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4244-0505-6600		2.4				
NOTES						

Revision 1.6

Page 1 of 1



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 08/26/2019

GCAL Report 218020823



Project FWDA Parcel21,SWMU1 & Parcel24

<i>Deliver To</i>	<i>Additional Recipients</i>
Emily McRee Zapata Incorporated 6302 Fairview Rd Suite 600 Charlotte, NC 28210	NONE





Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218020823



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Case Narrative

Client: Zapata Incorporated Report: 218020823

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

METALS

In the EPA 6020B analysis, a chemical or physical interference necessitated a dilution for all samples. This is reflected in elevated detection limits. Additional dilutions may have been required to bracket the concentration of target analyte(s) within the calibration range of the instrument.

In the EPA 6020B analysis for prep batch 628704, the MS and/or MSD recovery is outside the control limits for Arsenic. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference or the element is non-homogeneous in the sample. A post-digestion spike was performed. The MS/MSD recoveries and RPD are not applicable for Lead because the sample concentration is greater than four times the spike concentration.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802082301	24A965-EFL-D-SO	Solid	02/07/2018 11:45	02/08/2018 09:30
21802082302	24A964-EFL-D-SO	Solid	02/07/2018 11:55	02/08/2018 09:30
21802082303	24A964-EFR-D-SO	Solid	02/07/2018 11:55	02/08/2018 09:30
21802082304	24A963-EFL-D-SO	Solid	02/07/2018 12:00	02/08/2018 09:30
21802082305	24A962-EFL-D-SO	Solid	02/07/2018 12:15	02/08/2018 09:30
21802082306	24A962-EFR-D-SO	Solid	02/07/2018 12:15	02/08/2018 09:30
21802082307	24A955-EFL-D-SO	Solid	02/07/2018 12:25	02/08/2018 09:30
21802082308	24A955-EFR-D-SO	Solid	02/07/2018 12:25	02/08/2018 09:30
21802082309	24A941-EFL-D-SO	Solid	02/07/2018 12:35	02/08/2018 09:30
21802082310	24A941-EFR-D-SO	Solid	02/07/2018 12:35	02/08/2018 09:30
21802082311	24A942-EFL-D-SO	Solid	02/07/2018 12:45	02/08/2018 09:30
21802082312	24A942-EFR-D-SO	Solid	02/07/2018 12:45	02/08/2018 09:30
21802082313	24A943-EFL-D-SO	Solid	02/07/2018 12:55	02/08/2018 09:30
21802082314	24A943-EFR-D-SO	Solid	02/07/2018 12:55	02/08/2018 09:30
21802082315	24A944-EFL-D-SO	Solid	02/07/2018 13:00	02/08/2018 09:30
21802082316	24A944-EFR-D-SO	Solid	02/07/2018 13:00	02/08/2018 09:30
21802082317	24A945-EFL-D-SO	Solid	02/07/2018 13:10	02/08/2018 09:30
21802082318	24A946-EFL-D-SO	Solid	02/07/2018 13:15	02/08/2018 09:30
21802082319	24A946-EFR-D-SO	Solid	02/07/2018 13:15	02/08/2018 09:30
21802082320	24A947-EFR-D-SO	Solid	02/07/2018 13:20	02/08/2018 09:30



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802082301	24A965-EFL-D-SO	S	EPA 6020A
21802082301	24A965-EFL-D-SO	S	EPA 6020 Solid Prep
21802082301	24A965-EFL-D-SO	S	EPA 7471B
21802082301	24A965-EFL-D-SO	S	EPA 7471B Solid Prep
21802082301	24A965-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082302	24A964-EFL-D-SO	S	EPA 6020A
21802082302	24A964-EFL-D-SO	S	EPA 6020 Solid Prep
21802082302	24A964-EFL-D-SO	S	EPA 7471B
21802082302	24A964-EFL-D-SO	S	EPA 7471B Solid Prep
21802082302	24A964-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082303	24A964-EFR-D-SO	S	EPA 6020A
21802082303	24A964-EFR-D-SO	S	EPA 6020 Solid Prep
21802082303	24A964-EFR-D-SO	S	EPA 7471B
21802082303	24A964-EFR-D-SO	S	EPA 7471B Solid Prep
21802082303	24A964-EFR-D-SO	S	Dry Weight/Percent Moisture
21802082304	24A963-EFL-D-SO	S	EPA 6020A
21802082304	24A963-EFL-D-SO	S	EPA 6020 Solid Prep
21802082304	24A963-EFL-D-SO	S	EPA 7471B
21802082304	24A963-EFL-D-SO	S	EPA 7471B Solid Prep
21802082304	24A963-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082305	24A962-EFL-D-SO	S	EPA 6020A
21802082305	24A962-EFL-D-SO	S	EPA 6020 Solid Prep
21802082305	24A962-EFL-D-SO	S	EPA 7471B
21802082305	24A962-EFL-D-SO	S	EPA 7471B Solid Prep
21802082305	24A962-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082306	24A962-EFR-D-SO	S	EPA 6020A
21802082306	24A962-EFR-D-SO	S	EPA 6020 Solid Prep
21802082306	24A962-EFR-D-SO	S	EPA 7471B
21802082306	24A962-EFR-D-SO	S	EPA 7471B Solid Prep
21802082306	24A962-EFR-D-SO	S	Dry Weight/Percent Moisture
21802082307	24A955-EFL-D-SO	S	EPA 6020A
21802082307	24A955-EFL-D-SO	S	EPA 6020 Solid Prep
21802082307	24A955-EFL-D-SO	S	EPA 7471B
21802082307	24A955-EFL-D-SO	S	EPA 7471B Solid Prep
21802082307	24A955-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082308	24A955-EFR-D-SO	S	EPA 6020A
21802082308	24A955-EFR-D-SO	S	EPA 6020 Solid Prep
21802082308	24A955-EFR-D-SO	S	EPA 7471B
21802082308	24A955-EFR-D-SO	S	EPA 7471B Solid Prep
21802082308	24A955-EFR-D-SO	S	Dry Weight/Percent Moisture
21802082309	24A941-EFL-D-SO	S	EPA 6020A
21802082309	24A941-EFL-D-SO	S	EPA 6020 Solid Prep
21802082309	24A941-EFL-D-SO	S	EPA 7471B
21802082309	24A941-EFL-D-SO	S	EPA 7471B Solid Prep
21802082309	24A941-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082310	24A941-EFR-D-SO	S	EPA 6020A
21802082310	24A941-EFR-D-SO	S	EPA 6020 Solid Prep
21802082310	24A941-EFR-D-SO	S	EPA 7471B
21802082310	24A941-EFR-D-SO	S	EPA 7471B Solid Prep
21802082310	24A941-EFR-D-SO	S	Dry Weight/Percent Moisture



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary (Continued)

GCAL ID	Client ID	Matrix	Procedure
21802082311	24A942-EFL-D-SO	S	EPA 6020A
21802082311	24A942-EFL-D-SO	S	EPA 6020 Solid Prep
21802082311	24A942-EFL-D-SO	S	EPA 7471B
21802082311	24A942-EFL-D-SO	S	EPA 7471B Solid Prep
21802082311	24A942-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082312	24A942-EFR-D-SO	S	EPA 6020A
21802082312	24A942-EFR-D-SO	S	EPA 6020 Solid Prep
21802082312	24A942-EFR-D-SO	S	EPA 7471B
21802082312	24A942-EFR-D-SO	S	EPA 7471B Solid Prep
21802082312	24A942-EFR-D-SO	S	Dry Weight/Percent Moisture
21802082313	24A943-EFL-D-SO	S	EPA 6020A
21802082313	24A943-EFL-D-SO	S	EPA 6020 Solid Prep
21802082313	24A943-EFL-D-SO	S	EPA 7471B
21802082313	24A943-EFL-D-SO	S	EPA 7471B Solid Prep
21802082313	24A943-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082314	24A943-EFR-D-SO	S	EPA 6020A
21802082314	24A943-EFR-D-SO	S	EPA 6020 Solid Prep
21802082314	24A943-EFR-D-SO	S	EPA 7471B
21802082314	24A943-EFR-D-SO	S	EPA 7471B Solid Prep
21802082314	24A943-EFR-D-SO	S	Dry Weight/Percent Moisture
21802082315	24A944-EFL-D-SO	S	EPA 6020A
21802082315	24A944-EFL-D-SO	S	EPA 6020 Solid Prep
21802082315	24A944-EFL-D-SO	S	EPA 7471B
21802082315	24A944-EFL-D-SO	S	EPA 7471B Solid Prep
21802082315	24A944-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082316	24A944-EFR-D-SO	S	EPA 6020A
21802082316	24A944-EFR-D-SO	S	EPA 6020 Solid Prep
21802082316	24A944-EFR-D-SO	S	EPA 7471B
21802082316	24A944-EFR-D-SO	S	EPA 7471B Solid Prep
21802082316	24A944-EFR-D-SO	S	Dry Weight/Percent Moisture
21802082317	24A945-EFL-D-SO	S	EPA 6020A
21802082317	24A945-EFL-D-SO	S	EPA 6020 Solid Prep
21802082317	24A945-EFL-D-SO	S	EPA 7471B
21802082317	24A945-EFL-D-SO	S	EPA 7471B Solid Prep
21802082317	24A945-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082318	24A946-EFL-D-SO	S	EPA 6020A
21802082318	24A946-EFL-D-SO	S	EPA 6020 Solid Prep
21802082318	24A946-EFL-D-SO	S	EPA 7471B
21802082318	24A946-EFL-D-SO	S	EPA 7471B Solid Prep
21802082318	24A946-EFL-D-SO	S	Dry Weight/Percent Moisture
21802082319	24A946-EFR-D-SO	S	EPA 6020A
21802082319	24A946-EFR-D-SO	S	EPA 6020 Solid Prep
21802082319	24A946-EFR-D-SO	S	EPA 7471B
21802082319	24A946-EFR-D-SO	S	EPA 7471B Solid Prep
21802082319	24A946-EFR-D-SO	S	Dry Weight/Percent Moisture
21802082320	24A947-EFR-D-SO	S	EPA 6020A
21802082320	24A947-EFR-D-SO	S	EPA 6020 Solid Prep
21802082320	24A947-EFR-D-SO	S	EPA 7471B
21802082320	24A947-EFR-D-SO	S	EPA 7471B Solid Prep
21802082320	24A947-EFR-D-SO	S	Dry Weight/Percent Moisture



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A965-EFL-D-SO	Collect Date	02/07/2018 11:45	GCAL ID	21802082301
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.19	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	81.0	1.08	2.16	4.33	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.016	0.0051	0.013	0.013	mg/kg

24A964-EFL-D-SO	Collect Date	02/07/2018 11:55	GCAL ID	21802082302
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.89	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	13.9	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.025	0.0050	0.013	0.013	mg/kg

24A964-EFR-D-SO	Collect Date	02/07/2018 11:55	GCAL ID	21802082303
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.72	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	131	1.08	2.17	4.34	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A964-EFR-D-SO	Collect Date	02/07/2018 11:55	GCAL ID	21802082303
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.029	0.0052	0.013	0.013	mg/kg

24A963-EFL-D-SO	Collect Date	02/07/2018 12:00	GCAL ID	21802082304
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.64	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	22.1	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.028	0.0048	0.012	0.012	mg/kg

24A962-EFL-D-SO	Collect Date	02/07/2018 12:15	GCAL ID	21802082305
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.92	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	275	1.10	2.20	4.40	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.027	0.0053	0.013	0.013	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A962-EFR-D-SO	Collect Date	02/07/2018 12:15	GCAL ID	21802082306
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.09	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	33.6	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.023	0.0043	0.011	0.011	mg/kg

24A955-EFL-D-SO	Collect Date	02/07/2018 12:25	GCAL ID	21802082307
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.86	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	457	11.1	22.3	44.6	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.032	0.0053	0.013	0.013	mg/kg

24A955-EFR-D-SO	Collect Date	02/07/2018 12:25	GCAL ID	21802082308
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.72	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	1100	10.6	21.3	42.5	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A955-EFR-D-SO	Collect Date	02/07/2018 12:25	GCAL ID	21802082308
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.030	0.0050	0.013	0.013	mg/kg

24A941-EFL-D-SO	Collect Date	02/07/2018 12:35	GCAL ID	21802082309
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.22	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	40.0	0.11	0.21	0.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.011J	0.0047	0.012	0.012	mg/kg

24A941-EFR-D-SO	Collect Date	02/07/2018 12:35	GCAL ID	21802082310
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	6.55	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	6350	22.2	44.4	88.7	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.028	0.0053	0.013	0.013	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A942-EFL-D-SO	Collect Date	02/07/2018 12:45	GCAL ID	21802082311
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.65	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	66.6	1.13	2.26	4.52	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0051	0.013	0.013	mg/kg

24A942-EFR-D-SO	Collect Date	02/07/2018 12:45	GCAL ID	21802082312
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.24	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	58.7	1.14	2.27	4.54	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0055	0.014	0.014	mg/kg

24A943-EFL-D-SO	Collect Date	02/07/2018 12:55	GCAL ID	21802082313
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.66	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	37.4	0.11	0.23	0.45	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A943-EFL-D-SO	Collect Date	02/07/2018 12:55	GCAL ID	21802082313
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.027	0.0054	0.014	0.014	mg/kg

24A943-EFR-D-SO	Collect Date	02/07/2018 12:55	GCAL ID	21802082314
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.65	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	2540	10.8	21.6	43.1	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0053	0.013	0.013	mg/kg

24A944-EFL-D-SO	Collect Date	02/07/2018 13:00	GCAL ID	21802082315
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.01	0.12	0.23	0.46	mg/kg
7439-92-1	Lead	286	1.16	2.32	4.63	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0052	0.013	0.013	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A944-EFR-D-SO	Collect Date	02/07/2018 13:00	GCAL ID	21802082316
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.73	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	1590	10.7	21.4	42.8	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.028	0.0052	0.013	0.013	mg/kg

24A945-EFL-D-SO	Collect Date	02/07/2018 13:10	GCAL ID	21802082317
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.98	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	291	1.10	2.21	4.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.029	0.0050	0.013	0.013	mg/kg

24A946-EFL-D-SO	Collect Date	02/07/2018 13:15	GCAL ID	21802082318
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.58	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	22.1	0.11	0.21	0.43	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A946-EFL-D-SO	Collect Date	02/07/2018 13:15	GCAL ID	21802082318
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.040	0.0051	0.013	0.013	mg/kg

24A946-EFR-D-SO	Collect Date	02/07/2018 13:15	GCAL ID	21802082319
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.99	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	145	1.07	2.13	4.27	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.038	0.0048	0.012	0.012	mg/kg

24A947-EFR-D-SO	Collect Date	02/07/2018 13:20	GCAL ID	21802082320
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.53	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	150	1.10	2.20	4.39	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.048	0.0053	0.013	0.013	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A965-EFL-D-SO	Collect Date	02/07/2018 11:45	GCAL ID	21802082301
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 15:09	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.19	0.11	0.22	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 15:05	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	81.0	1.08	2.16	4.33	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:28	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.016	0.0051	0.013	0.013	mg/kg

24A964-EFL-D-SO	Collect Date	02/07/2018 11:55	GCAL ID	21802082302
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 15:18	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.89	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	13.9	0.11	0.22	0.44	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A964-EFL-D-SO	Collect Date	02/07/2018 11:55	GCAL ID	21802082302
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:30	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.025	0.0050	0.013	0.013	mg/kg

24A964-EFR-D-SO	Collect Date	02/07/2018 11:55	GCAL ID	21802082303
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 15:26	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.72	0.11	0.22	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 15:22	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	131	1.08	2.17	4.34	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:32	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.029	0.0052	0.013	0.013	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A963-EFL-D-SO	Collect Date	02/07/2018 12:00	GCAL ID	21802082304
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 15:35	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.64	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	22.1	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:34	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.028	0.0048	0.012	0.012	mg/kg

24A962-EFL-D-SO	Collect Date	02/07/2018 12:15	GCAL ID	21802082305
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 15:44	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.92	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 15:40	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	275	1.10	2.20	4.40	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A962-EFL-D-SO	Collect Date	02/07/2018 12:15	GCAL ID	21802082305
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:36	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.027	0.0053	0.013	0.013	mg/kg

24A962-EFR-D-SO	Collect Date	02/07/2018 12:15	GCAL ID	21802082306
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 18:49	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.09	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	33.6	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:38	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.023	0.0043	0.011	0.011	mg/kg

24A955-EFL-D-SO	Collect Date	02/07/2018 12:25	GCAL ID	21802082307
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 16:50	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.86	0.11	0.22	0.45	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A955-EFL-D-SO	Collect Date	02/07/2018 12:25	GCAL ID	21802082307
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	1000	02/13/2018 09:32	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	457	11.1	22.3	44.6	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:48	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.032	0.0053	0.013	0.013	mg/kg

24A955-EFR-D-SO	Collect Date	02/07/2018 12:25	GCAL ID	21802082308
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 16:59	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.72	0.11	0.21	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	1000	02/13/2018 09:37	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	1100	10.6	21.3	42.5	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A955-EFR-D-SO	Collect Date	02/07/2018 12:25	GCAL ID	21802082308
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:49	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.030	0.0050	0.013	0.013	mg/kg

24A941-EFL-D-SO	Collect Date	02/07/2018 12:35	GCAL ID	21802082309
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 19:11	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.22	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	40.0	0.11	0.21	0.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:51	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.011J	0.0047	0.012	0.012	mg/kg

24A941-EFR-D-SO	Collect Date	02/07/2018 12:35	GCAL ID	21802082310
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 17:16	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	6.55	0.11	0.22	0.44	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A941-EFR-D-SO	Collect Date	02/07/2018 12:35	GCAL ID	21802082310
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	2000	02/13/2018 09:41	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	6350	22.2	44.4	88.7	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:53	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.028	0.0053	0.013	0.013	mg/kg

24A942-EFL-D-SO	Collect Date	02/07/2018 12:45	GCAL ID	21802082311
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 19:33	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.65	0.11	0.23	0.45	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 19:29	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	66.6	1.13	2.26	4.52	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A942-EFL-D-SO	Collect Date	02/07/2018 12:45	GCAL ID	21802082311
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:55	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0051	0.013	0.013	mg/kg

24A942-EFR-D-SO	Collect Date	02/07/2018 12:45	GCAL ID	21802082312
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 19:42	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.24	0.11	0.23	0.45	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 19:37	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	58.7	1.14	2.27	4.54	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:57	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0055	0.014	0.014	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A943-EFL-D-SO	Collect Date	02/07/2018 12:55	GCAL ID	21802082313
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 19:51	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.66	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	37.4	0.11	0.23	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 19:59	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.027	0.0054	0.014	0.014	mg/kg

24A943-EFR-D-SO	Collect Date	02/07/2018 12:55	GCAL ID	21802082314
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 19:59	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.65	0.11	0.22	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	1000	02/13/2018 09:45	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	2540	10.8	21.6	43.1	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A943-EFR-D-SO	Collect Date	02/07/2018 12:55	GCAL ID	21802082314
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 20:01	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0053	0.013	0.013	mg/kg

24A944-EFL-D-SO	Collect Date	02/07/2018 13:00	GCAL ID	21802082315
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 20:08	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.01	0.12	0.23	0.46	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 20:04	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	286	1.16	2.32	4.63	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 20:07	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0052	0.013	0.013	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A944-EFR-D-SO	Collect Date	02/07/2018 13:00	GCAL ID	21802082316
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 20:30	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.73	0.11	0.21	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	1000	02/13/2018 09:50	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	1590	10.7	21.4	42.8	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 20:09	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.028	0.0052	0.013	0.013	mg/kg

24A945-EFL-D-SO	Collect Date	02/07/2018 13:10	GCAL ID	21802082317
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 20:39	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.98	0.11	0.22	0.44	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A945-EFL-D-SO	Collect Date	02/07/2018 13:10	GCAL ID	21802082317
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 20:35	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	291	1.10	2.21	4.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 20:11	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.029	0.0050	0.013	0.013	mg/kg

24A946-EFL-D-SO	Collect Date	02/07/2018 13:15	GCAL ID	21802082318
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 20:48	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.58	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	22.1	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 20:13	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.040	0.0051	0.013	0.013	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A946-EFR-D-SO	Collect Date	02/07/2018 13:15	GCAL ID	21802082319
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 20:57	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.99	0.11	0.21	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 20:52	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	145	1.07	2.13	4.27	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 20:14	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.038	0.0048	0.012	0.012	mg/kg

24A947-EFR-D-SO	Collect Date	02/07/2018 13:20	GCAL ID	21802082320
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	10	02/12/2018 21:05	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.53	0.11	0.22	0.44	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A947-EFR-D-SO	Collect Date	02/07/2018 13:20	GCAL ID	21802082320
	Receive Date	02/08/2018 09:30	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/09/2018 13:05	628704	EPA 3050B	100	02/12/2018 21:01	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	150	1.10	2.20	4.39	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/10/2018 08:20	628708	EPA 7471B	1	02/12/2018 20:16	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.048	0.0053	0.013	0.013	mg/kg



Report#: 218020823

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 628923	Client ID GCAL ID	MB628708 1773112	LCS628708 1773113			
Prep Batch 628708	Sample Type Prep Date	MB 02/10/2018 08:20	LCS 02/10/2018 08:20			
Prep Method EPA 7471B	Analysis Date Matrix	02/12/2018 19:24 Solid	02/12/2018 19:26 Solid			
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	0.010U	0.010	0.25	0.24	95 80 - 124

Analytical Batch 628923	Client ID GCAL ID	24A962-EFR-D-SO 21802082306	1772709MS 1773336		1772709MSD 1773337					
Prep Batch 628708	Sample Type Prep Date	SAMPLE 02/10/2018 08:20	MS 02/10/2018 08:20		MSD 02/10/2018 08:20					
Prep Method EPA 7471B	Analysis Date Matrix	02/12/2018 19:38 Solid	02/12/2018 19:44 Solid		02/12/2018 19:46 Solid					
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Mercury	7439-97-6	0.022	0.011	0.25	0.28	103 80 - 124	0.25	0.28	104	1 30

Analytical Batch 628922	Client ID GCAL ID	MB628704 1773098	LCS628704 1773099			
Prep Batch 628704	Sample Type Prep Date	MB 02/09/2018 13:05	LCS 02/09/2018 13:05			
Prep Method EPA 3050B	Analysis Date Matrix	02/12/2018 14:56 Solid	02/12/2018 15:00 Solid			
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result %R	Control Limits%R
Arsenic	7440-38-2	0.020U	0.020	2.00	2.06	103 82 - 118
Lead	7439-92-1	0.020U	0.020	2.00	1.98	99 84 - 118

Analytical Batch 628922	Client ID GCAL ID	24A962-EFR-D-SO 21802082306	1772709MS 1773100		1772709MSD 1773101					
Prep Batch 628704	Sample Type Prep Date	SAMPLE 02/09/2018 13:05	MS 02/09/2018 13:05		MSD 02/09/2018 13:05					
Prep Method EPA 3050B	Analysis Date Matrix	02/12/2018 18:49 Solid	02/12/2018 18:53 Solid		02/12/2018 18:58 Solid					
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Arsenic	7440-38-2	2.08	0.21	2.13	3.60	71* 82 - 118	2.13	3.94	87	9 30
Lead	7439-92-1	33.6	0.21	2.13	40.1	302* 84 - 118	2.13	40.9	340*	2 30



CHAIN OF CUSTODY RECO

Client ID: 4857 - Zapata Incorporated

SDG: 218020823

PM: AEC



Report To:				Bill To:				Analytical Requests & Method				Custody Seal:		
Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Pb, Hg, & As (SW846 6010C)				Used: <input type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Temperature: 0.5 EC9 35 CPM		
P.O. Number: R20179-0005				Project Name/Number: FWDA Parcel 21, SWMU 1 and Parcel 24								<input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered		
Sampled By: Katie Stout														
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers							← Preservative / Notes ↓	GCAL ID
S	02/07/18	1145		x	24A965-EFL-D-SO	1	x							1
S	02/07/18	1155		x	24A964-EFL-D-SO	1	x							2
S	02/07/18	1155		x	24A964-EFR-D-SO	1	x							3
S	02/07/18	1200		x	24A963-EFL-D-SO	1	x							4
S	02/07/18	1215		x	24A962-EFL-D-SO	1	x							5
S	02/07/18	1215		x	24A962-EFR-D-SO	1	x							6
S	02/07/18	1225		x	24A955-EFL-D-SO	1	x							7
S	02/07/18	1225		x	24A955-EFR-D-SO	1	x							8
S	02/07/18	1235		x	24A941-EFL-D-SO	1	x							9
S	02/07/18	1235		x	24A941-EFR-D-SO	1	x							10
S	02/07/18	1245		x	24A942-EFL-D-SO	1	x							11
S	02/07/18	1245		x	24A942-EFR-D-SO	1	x							12
S	02/07/18	1255		x	24A943-EFL-D-SO	1	x							13
S	02/07/18	1255		x	24A943-EFR-D-SO	1	x							14
S	02/07/18	1300		x	24A944-EFL-D-SO	1	x							15
S	02/07/18	1300		x	24A944-EFR-D-SO	1	x							16
S	02/07/18	1310		x	24A945-EFL-D-SO	1	x							17
S	02/07/18	1315		x	24A946-EFL-D-SO	1	x							18
S	02/07/18	1315		x	24A946-EFR-D-SO	1	x							19
S	02/07/18	1320		x	24A947-EFR-D-SO	1	x							20
Airbill Number: 424405056563														
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* 3 Days <input type="checkbox"/> Standard (per contract/quote)														
Relinquished by: (Signature) <i>Katie Stout</i>		Date/Time: 2/7/18 1:30		Received by: (Signature)		Date/Time:		Notes:						
Relinquished by: (Signature) <i>FedEx</i>		Date/Time: 2-8-18		Received by: (Signature) <i>T. Myday</i>		Date/Time: 2-8-18								
Relinquished by: (Signature)		Date/Time:		Received by: (Signature)		Date/Time:		COC 02072018B						

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * Requires prior approval. Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218020823			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274613	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 6 - 3 BD Task8 Igloo Drains	Receive Date(s) 02/08/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4244-0505-6563		0.5				
NOTES						

Revision 1.6

Page 1 of 1



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 08/26/2019

GCAL Report 218020925



Project FWDA Parcel21,SWMU1 & Parcel24

<i>Deliver To</i>	<i>Additional Recipients</i>
Emily McRee Zapata Incorporated 6302 Fairview Rd Suite 600 Charlotte, NC 28210	NONE





Report#: 218020925

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218020925



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Case Narrative

Client: Zapata Incorporated Report: 218020925

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

METALS

In the EPA 6020B analysis, a chemical or physical interference necessitated a dilution for all samples. This is reflected in elevated detection limits. Additional dilutions were required to bracket the concentration of target analytes within the calibration range of the instrument.

In the EPA 6020B analysis for prep batch 628794, the MS/MSD recoveries and RPD are not applicable for Lead because the sample concentration is greater than four times the spike concentration.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802092501	24A948-EFL-D-SO	Solid	02/08/2018 09:30	02/09/2018 09:40
21802092502	24A948-EFR-D-SO	Solid	02/08/2018 09:30	02/09/2018 09:40
21802092503	24A950-EFL-D-SO	Solid	02/08/2018 09:40	02/09/2018 09:40
21802092504	24A950-EFR-D-SO	Solid	02/08/2018 09:40	02/09/2018 09:40
21802092505	24A951-EFL-D-SO	Solid	02/08/2018 09:45	02/09/2018 09:40
21802092506	24A951-EFR-D-SO	Solid	02/08/2018 09:45	02/09/2018 09:40
21802092507	24A952-EFL-D-SO	Solid	02/08/2018 09:55	02/09/2018 09:40
21802092508	24A952-EFR-D-SO	Solid	02/08/2018 09:55	02/09/2018 09:40
21802092509	24A939-EFL-D-SO	Solid	02/08/2018 10:10	02/09/2018 09:40
21802092510	24A939-EFR-D-SO	Solid	02/08/2018 10:10	02/09/2018 09:40
21802092511	24A938-EFR-D-SO	Solid	02/08/2018 10:15	02/09/2018 09:40
21802092512	24A936-EFL-D-SO	Solid	02/08/2018 10:20	02/09/2018 09:40
21802092513	24A936-EFR-D-SO	Solid	02/08/2018 10:20	02/09/2018 09:40
21802092514	24A935-EFL-D-SO	Solid	02/08/2018 10:30	02/09/2018 09:40
21802092515	24A935-EFR-D-SO	Solid	02/08/2018 10:30	02/09/2018 09:40
21802092516	24A934-EFL-D-SO	Solid	02/08/2018 10:35	02/09/2018 09:40
21802092517	24A933-EFL-D-SO	Solid	02/08/2018 10:40	02/09/2018 09:40
21802092518	24A933-EFR-D-SO	Solid	02/08/2018 10:40	02/09/2018 09:40
21802092519	24A929-EFL-D-SO	Solid	02/08/2018 10:50	02/09/2018 09:40
21802092520	24A929-EFR-D-SO	Solid	02/08/2018 10:50	02/09/2018 09:40
21802092521	24A920-EFL-D-SO	Solid	02/08/2018 11:00	02/09/2018 09:40
21802092522	24A920-EFR-D-SO	Solid	02/08/2018 11:00	02/09/2018 09:40
21802092523	24A922-EFL-D-SO	Solid	02/08/2018 11:35	02/09/2018 09:40
21802092524	24A922-EFR-D-SO	Solid	02/08/2018 11:35	02/09/2018 09:40
21802092525	24A923-EFL-D-SO	Solid	02/08/2018 11:45	02/09/2018 09:40
21802092526	24A923-EFR-D-SO	Solid	02/08/2018 11:45	02/09/2018 09:40



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802092501	24A948-EFL-D-SO	S	EPA 6020A
21802092501	24A948-EFL-D-SO	S	EPA 6020 Solid Prep
21802092501	24A948-EFL-D-SO	S	EPA 7471B
21802092501	24A948-EFL-D-SO	S	EPA 7471B Solid Prep
21802092501	24A948-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092502	24A948-EFR-D-SO	S	EPA 6020A
21802092502	24A948-EFR-D-SO	S	EPA 6020 Solid Prep
21802092502	24A948-EFR-D-SO	S	EPA 7471B
21802092502	24A948-EFR-D-SO	S	EPA 7471B Solid Prep
21802092502	24A948-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092503	24A950-EFL-D-SO	S	EPA 6020A
21802092503	24A950-EFL-D-SO	S	EPA 6020 Solid Prep
21802092503	24A950-EFL-D-SO	S	EPA 7471B
21802092503	24A950-EFL-D-SO	S	EPA 7471B Solid Prep
21802092503	24A950-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092504	24A950-EFR-D-SO	S	EPA 6020A
21802092504	24A950-EFR-D-SO	S	EPA 6020 Solid Prep
21802092504	24A950-EFR-D-SO	S	EPA 7471B
21802092504	24A950-EFR-D-SO	S	EPA 7471B Solid Prep
21802092504	24A950-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092505	24A951-EFL-D-SO	S	EPA 6020A
21802092505	24A951-EFL-D-SO	S	EPA 6020 Solid Prep
21802092505	24A951-EFL-D-SO	S	EPA 7471B
21802092505	24A951-EFL-D-SO	S	EPA 7471B Solid Prep
21802092505	24A951-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092506	24A951-EFR-D-SO	S	EPA 6020A
21802092506	24A951-EFR-D-SO	S	EPA 6020 Solid Prep
21802092506	24A951-EFR-D-SO	S	EPA 7471B
21802092506	24A951-EFR-D-SO	S	EPA 7471B Solid Prep
21802092506	24A951-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092507	24A952-EFL-D-SO	S	EPA 6020A
21802092507	24A952-EFL-D-SO	S	EPA 6020 Solid Prep
21802092507	24A952-EFL-D-SO	S	EPA 7471B
21802092507	24A952-EFL-D-SO	S	EPA 7471B Solid Prep
21802092507	24A952-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092508	24A952-EFR-D-SO	S	EPA 6020A
21802092508	24A952-EFR-D-SO	S	EPA 6020 Solid Prep
21802092508	24A952-EFR-D-SO	S	EPA 7471B
21802092508	24A952-EFR-D-SO	S	EPA 7471B Solid Prep
21802092508	24A952-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092509	24A939-EFL-D-SO	S	EPA 6020A
21802092509	24A939-EFL-D-SO	S	EPA 6020 Solid Prep
21802092509	24A939-EFL-D-SO	S	EPA 7471B
21802092509	24A939-EFL-D-SO	S	EPA 7471B Solid Prep
21802092509	24A939-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092510	24A939-EFR-D-SO	S	EPA 6020A
21802092510	24A939-EFR-D-SO	S	EPA 6020 Solid Prep
21802092510	24A939-EFR-D-SO	S	EPA 7471B
21802092510	24A939-EFR-D-SO	S	EPA 7471B Solid Prep
21802092510	24A939-EFR-D-SO	S	Dry Weight/Percent Moisture



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary (Continued)

GCAL ID	Client ID	Matrix	Procedure
21802092511	24A938-EFR-D-SO	S	EPA 6020A
21802092511	24A938-EFR-D-SO	S	EPA 6020 Solid Prep
21802092511	24A938-EFR-D-SO	S	EPA 7471B
21802092511	24A938-EFR-D-SO	S	EPA 7471B Solid Prep
21802092511	24A938-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092512	24A936-EFL-D-SO	S	EPA 6020A
21802092512	24A936-EFL-D-SO	S	EPA 6020 Solid Prep
21802092512	24A936-EFL-D-SO	S	EPA 7471B
21802092512	24A936-EFL-D-SO	S	EPA 7471B Solid Prep
21802092512	24A936-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092513	24A936-EFR-D-SO	S	EPA 6020A
21802092513	24A936-EFR-D-SO	S	EPA 6020 Solid Prep
21802092513	24A936-EFR-D-SO	S	EPA 7471B
21802092513	24A936-EFR-D-SO	S	EPA 7471B Solid Prep
21802092513	24A936-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092514	24A935-EFL-D-SO	S	EPA 6020A
21802092514	24A935-EFL-D-SO	S	EPA 6020 Solid Prep
21802092514	24A935-EFL-D-SO	S	EPA 7471B
21802092514	24A935-EFL-D-SO	S	EPA 7471B Solid Prep
21802092514	24A935-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092515	24A935-EFR-D-SO	S	EPA 6020A
21802092515	24A935-EFR-D-SO	S	EPA 6020 Solid Prep
21802092515	24A935-EFR-D-SO	S	EPA 7471B
21802092515	24A935-EFR-D-SO	S	EPA 7471B Solid Prep
21802092515	24A935-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092516	24A934-EFL-D-SO	S	EPA 6020A
21802092516	24A934-EFL-D-SO	S	EPA 6020 Solid Prep
21802092516	24A934-EFL-D-SO	S	EPA 7471B
21802092516	24A934-EFL-D-SO	S	EPA 7471B Solid Prep
21802092516	24A934-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092517	24A933-EFL-D-SO	S	EPA 6020A
21802092517	24A933-EFL-D-SO	S	EPA 6020 Solid Prep
21802092517	24A933-EFL-D-SO	S	EPA 7471B
21802092517	24A933-EFL-D-SO	S	EPA 7471B Solid Prep
21802092517	24A933-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092518	24A933-EFR-D-SO	S	EPA 6020A
21802092518	24A933-EFR-D-SO	S	EPA 6020 Solid Prep
21802092518	24A933-EFR-D-SO	S	EPA 7471B
21802092518	24A933-EFR-D-SO	S	EPA 7471B Solid Prep
21802092518	24A933-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092519	24A929-EFL-D-SO	S	EPA 6020A
21802092519	24A929-EFL-D-SO	S	EPA 6020 Solid Prep
21802092519	24A929-EFL-D-SO	S	EPA 7471B
21802092519	24A929-EFL-D-SO	S	EPA 7471B Solid Prep
21802092519	24A929-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092520	24A929-EFR-D-SO	S	EPA 6020A
21802092520	24A929-EFR-D-SO	S	EPA 6020 Solid Prep
21802092520	24A929-EFR-D-SO	S	EPA 7471B
21802092520	24A929-EFR-D-SO	S	EPA 7471B Solid Prep
21802092520	24A929-EFR-D-SO	S	Dry Weight/Percent Moisture



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary (Continued)

GCAL ID	Client ID	Matrix	Procedure
21802092521	24A920-EFL-D-SO	S	EPA 6020A
21802092521	24A920-EFL-D-SO	S	EPA 6020 Solid Prep
21802092521	24A920-EFL-D-SO	S	EPA 7471B
21802092521	24A920-EFL-D-SO	S	EPA 7471B Solid Prep
21802092521	24A920-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092522	24A920-EFR-D-SO	S	EPA 6020A
21802092522	24A920-EFR-D-SO	S	EPA 6020 Solid Prep
21802092522	24A920-EFR-D-SO	S	EPA 7471B
21802092522	24A920-EFR-D-SO	S	EPA 7471B Solid Prep
21802092522	24A920-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092523	24A922-EFL-D-SO	S	EPA 6020A
21802092523	24A922-EFL-D-SO	S	EPA 6020 Solid Prep
21802092523	24A922-EFL-D-SO	S	EPA 7471B
21802092523	24A922-EFL-D-SO	S	EPA 7471B Solid Prep
21802092523	24A922-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092524	24A922-EFR-D-SO	S	EPA 6020A
21802092524	24A922-EFR-D-SO	S	EPA 6020 Solid Prep
21802092524	24A922-EFR-D-SO	S	EPA 7471B
21802092524	24A922-EFR-D-SO	S	EPA 7471B Solid Prep
21802092524	24A922-EFR-D-SO	S	Dry Weight/Percent Moisture
21802092525	24A923-EFL-D-SO	S	EPA 6020A
21802092525	24A923-EFL-D-SO	S	EPA 6020 Solid Prep
21802092525	24A923-EFL-D-SO	S	EPA 7471B
21802092525	24A923-EFL-D-SO	S	EPA 7471B Solid Prep
21802092525	24A923-EFL-D-SO	S	Dry Weight/Percent Moisture
21802092526	24A923-EFR-D-SO	S	EPA 6020A
21802092526	24A923-EFR-D-SO	S	EPA 6020 Solid Prep
21802092526	24A923-EFR-D-SO	S	EPA 7471B
21802092526	24A923-EFR-D-SO	S	EPA 7471B Solid Prep
21802092526	24A923-EFR-D-SO	S	Dry Weight/Percent Moisture



Report#: 218020925

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A948-EFL-D-SO	Collect Date	02/08/2018 09:30	GCAL ID	21802092501
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.49	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	458	11.2	22.4	44.7	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.032	0.0045	0.011	0.011	mg/kg

24A948-EFR-D-SO	Collect Date	02/08/2018 09:30	GCAL ID	21802092502
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.38	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	12.7	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0051	0.013	0.013	mg/kg

24A950-EFL-D-SO	Collect Date	02/08/2018 09:40	GCAL ID	21802092503
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.13	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	47.7	1.11	2.21	4.42	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A950-EFL-D-SO	Collect Date	02/08/2018 09:40	GCAL ID	21802092503
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0052	0.013	0.013	mg/kg

24A950-EFR-D-SO	Collect Date	02/08/2018 09:40	GCAL ID	21802092504
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.56	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	35.6	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.018	0.0052	0.013	0.013	mg/kg

24A951-EFL-D-SO	Collect Date	02/08/2018 09:45	GCAL ID	21802092505
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.96	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	104	1.09	2.19	4.38	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.018	0.0048	0.012	0.012	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A951-EFR-D-SO	Collect Date	02/08/2018 09:45	GCAL ID	21802092506
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.47	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	1470	11.1	22.1	44.3	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.017	0.0053	0.013	0.013	mg/kg

24A952-EFL-D-SO	Collect Date	02/08/2018 09:55	GCAL ID	21802092507
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.32	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	113	1.09	2.18	4.35	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0052	0.013	0.013	mg/kg

24A952-EFR-D-SO	Collect Date	02/08/2018 09:55	GCAL ID	21802092508
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.82	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	223	1.06	2.12	4.24	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A952-EFR-D-SO	Collect Date	02/08/2018 09:55	GCAL ID	21802092508
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.016	0.0051	0.013	0.013	mg/kg

24A939-EFL-D-SO	Collect Date	02/08/2018 10:10	GCAL ID	21802092509
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.76	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	258	1.09	2.19	4.37	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.027	0.0052	0.013	0.013	mg/kg

24A939-EFR-D-SO	Collect Date	02/08/2018 10:10	GCAL ID	21802092510
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.42	0.10	0.21	0.41	mg/kg
7439-92-1	Lead	180	1.03	2.06	4.11	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.020	0.0050	0.012	0.012	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A938-EFR-D-SO	Collect Date	02/08/2018 10:15	GCAL ID	21802092511
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.37	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	365	1.11	2.21	4.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0053	0.013	0.013	mg/kg

24A936-EFL-D-SO	Collect Date	02/08/2018 10:20	GCAL ID	21802092512
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.99	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	196	1.05	2.11	4.22	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0052	0.013	0.013	mg/kg

24A936-EFR-D-SO	Collect Date	02/08/2018 10:20	GCAL ID	21802092513
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.41	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	151	1.05	2.10	4.21	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A936-EFR-D-SO	Collect Date	02/08/2018 10:20	GCAL ID	21802092513
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0049	0.012	0.012	mg/kg

24A935-EFL-D-SO	Collect Date	02/08/2018 10:30	GCAL ID	21802092514
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.29	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	162	1.10	2.20	4.41	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0048	0.012	0.012	mg/kg

24A935-EFR-D-SO	Collect Date	02/08/2018 10:30	GCAL ID	21802092515
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.99	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	47.2	1.07	2.13	4.26	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.042	0.0051	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A934-EFL-D-SO	Collect Date	02/08/2018 10:35	GCAL ID	21802092516
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.98	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	144	1.08	2.15	4.31	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0052	0.013	0.013	mg/kg

24A933-EFL-D-SO	Collect Date	02/08/2018 10:40	GCAL ID	21802092517
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.81	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	10.0	0.11	0.21	0.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.020	0.0049	0.012	0.012	mg/kg

24A933-EFR-D-SO	Collect Date	02/08/2018 10:40	GCAL ID	21802092518
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.95	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	61.2	1.08	2.16	4.32	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A933-EFR-D-SO	Collect Date	02/08/2018 10:40	GCAL ID	21802092518
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0047	0.012	0.012	mg/kg

24A929-EFL-D-SO	Collect Date	02/08/2018 10:50	GCAL ID	21802092519
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.10	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	1010	10.6	21.2	42.5	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0049	0.012	0.012	mg/kg

24A929-EFR-D-SO	Collect Date	02/08/2018 10:50	GCAL ID	21802092520
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.13	0.10	0.21	0.41	mg/kg
7439-92-1	Lead	170	1.03	2.06	4.13	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.032	0.0051	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A920-EFL-D-SO	Collect Date	02/08/2018 11:00	GCAL ID	21802092521
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.73	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	829	10.9	21.9	43.7	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.026	0.0052	0.013	0.013	mg/kg

24A920-EFR-D-SO	Collect Date	02/08/2018 11:00	GCAL ID	21802092522
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.69	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	58.5	1.06	2.12	4.23	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0048	0.012	0.012	mg/kg

24A922-EFL-D-SO	Collect Date	02/08/2018 11:35	GCAL ID	21802092523
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.33	0.11	0.23	0.46	mg/kg
7439-92-1	Lead	353	1.15	2.30	4.59	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A922-EFL-D-SO	Collect Date	02/08/2018 11:35	GCAL ID	21802092523
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.039	0.0056	0.014	0.014	mg/kg

24A922-EFR-D-SO	Collect Date	02/08/2018 11:35	GCAL ID	21802092524
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.51	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	644	10.8	21.6	43.2	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0051	0.013	0.013	mg/kg

24A923-EFL-D-SO	Collect Date	02/08/2018 11:45	GCAL ID	21802092525
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.14	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	79.0	1.13	2.25	4.51	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0050	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A923-EFR-D-SO	Collect Date	02/08/2018 11:45	GCAL ID	21802092526
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.95	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	478	10.7	21.3	42.7	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0052	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A948-EFL-D-SO	Collect Date	02/08/2018 09:30	GCAL ID	21802092501
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 16:16	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.49	0.11	0.22	0.45	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	1000	02/14/2018 09:43	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	458	11.2	22.4	44.7	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 17:49	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.032	0.0045	0.011	0.011	mg/kg

24A948-EFR-D-SO	Collect Date	02/08/2018 09:30	GCAL ID	21802092502
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 16:42	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.38	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	12.7	0.11	0.22	0.43	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A948-EFR-D-SO	Collect Date	02/08/2018 09:30	GCAL ID	21802092502
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 17:55	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0051	0.013	0.013	mg/kg

24A950-EFL-D-SO	Collect Date	02/08/2018 09:40	GCAL ID	21802092503
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 16:51	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.13	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 16:47	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	47.7	1.11	2.21	4.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 17:57	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0052	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A950-EFR-D-SO	Collect Date	02/08/2018 09:40	GCAL ID	21802092504
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 17:00	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.56	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	35.6	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 17:58	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.018	0.0052	0.013	0.013	mg/kg

24A951-EFL-D-SO	Collect Date	02/08/2018 09:45	GCAL ID	21802092505
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 17:09	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.96	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 17:04	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	104	1.09	2.19	4.38	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A951-EFL-D-SO	Collect Date	02/08/2018 09:45	GCAL ID	21802092505
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:00	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.018	0.0048	0.012	0.012	mg/kg

24A951-EFR-D-SO	Collect Date	02/08/2018 09:45	GCAL ID	21802092506
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 17:31	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.47	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	1000	02/14/2018 10:05	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	1470	11.1	22.1	44.3	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:02	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.017	0.0053	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A952-EFL-D-SO	Collect Date	02/08/2018 09:55	GCAL ID	21802092507
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 17:40	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.32	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 17:35	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	113	1.09	2.18	4.35	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:08	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0052	0.013	0.013	mg/kg

24A952-EFR-D-SO	Collect Date	02/08/2018 09:55	GCAL ID	21802092508
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 17:49	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.82	0.11	0.21	0.42	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A952-EFR-D-SO	Collect Date	02/08/2018 09:55	GCAL ID	21802092508
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 17:44	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	223	1.06	2.12	4.24	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:10	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.016	0.0051	0.013	0.013	mg/kg

24A939-EFL-D-SO	Collect Date	02/08/2018 10:10	GCAL ID	21802092509
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 17:57	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.76	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 17:53	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	258	1.09	2.19	4.37	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A939-EFL-D-SO	Collect Date	02/08/2018 10:10	GCAL ID	21802092509
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:12	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.027	0.0052	0.013	0.013	mg/kg

24A939-EFR-D-SO	Collect Date	02/08/2018 10:10	GCAL ID	21802092510
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 18:06	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.42	0.10	0.21	0.41	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 18:02	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	180	1.03	2.06	4.11	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:14	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.020	0.0050	0.012	0.012	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A938-EFR-D-SO	Collect Date	02/08/2018 10:15	GCAL ID	21802092511
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 18:28	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.37	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 18:24	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	365	1.11	2.21	4.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:16	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0053	0.013	0.013	mg/kg

24A936-EFL-D-SO	Collect Date	02/08/2018 10:20	GCAL ID	21802092512
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 18:37	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.99	0.11	0.21	0.42	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A936-EFL-D-SO	Collect Date	02/08/2018 10:20	GCAL ID	21802092512
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 18:33	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	196	1.05	2.11	4.22	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:18	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0052	0.013	0.013	mg/kg

24A936-EFR-D-SO	Collect Date	02/08/2018 10:20	GCAL ID	21802092513
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 18:46	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.41	0.11	0.21	0.42	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 18:41	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	151	1.05	2.10	4.21	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A936-EFR-D-SO	Collect Date	02/08/2018 10:20	GCAL ID	21802092513
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:20	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0049	0.012	0.012	mg/kg

24A935-EFL-D-SO	Collect Date	02/08/2018 10:30	GCAL ID	21802092514
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 18:55	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.29	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 18:50	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	162	1.10	2.20	4.41	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:22	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0048	0.012	0.012	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A935-EFR-D-SO	Collect Date	02/08/2018 10:30	GCAL ID	21802092515
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 19:03	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.99	0.11	0.21	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 18:59	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	47.2	1.07	2.13	4.26	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:23	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.042	0.0051	0.013	0.013	mg/kg

24A934-EFL-D-SO	Collect Date	02/08/2018 10:35	GCAL ID	21802092516
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 19:25	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.98	0.11	0.22	0.43	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A934-EFL-D-SO	Collect Date	02/08/2018 10:35	GCAL ID	21802092516
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 19:21	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	144	1.08	2.15	4.31	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:25	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0052	0.013	0.013	mg/kg

24A933-EFL-D-SO	Collect Date	02/08/2018 10:40	GCAL ID	21802092517
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 19:34	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.81	0.11	0.21	0.42	mg/kg
7439-92-1	Lead	10.0	0.11	0.21	0.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:31	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.020	0.0049	0.012	0.012	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A933-EFR-D-SO	Collect Date	02/08/2018 10:40	GCAL ID	21802092518
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 19:43	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.95	0.11	0.22	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 19:39	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	61.2	1.08	2.16	4.32	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:33	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0047	0.012	0.012	mg/kg

24A929-EFL-D-SO	Collect Date	02/08/2018 10:50	GCAL ID	21802092519
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 19:52	AWG	629043
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.10	0.11	0.21	0.42	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A929-EFL-D-SO	Collect Date	02/08/2018 10:50	GCAL ID	21802092519
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	1000	02/14/2018 10:09	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	1010	10.6	21.2	42.5	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:35	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0049	0.012	0.012	mg/kg

24A929-EFR-D-SO	Collect Date	02/08/2018 10:50	GCAL ID	21802092520
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	10	02/13/2018 20:01	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.13	0.10	0.21	0.41	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:00	628794	EPA 3050B	100	02/13/2018 19:56	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	170	1.03	2.06	4.13	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A929-EFR-D-SO	Collect Date	02/08/2018 10:50	GCAL ID	21802092520
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/12/2018 09:50	628842	EPA 7471B	1	02/12/2018 18:37	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.032	0.0051	0.013	0.013	mg/kg

24A920-EFL-D-SO	Collect Date	02/08/2018 11:00	GCAL ID	21802092521
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	10	02/13/2018 10:33	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.73	0.11	0.22	0.44	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	1000	02/13/2018 20:19	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	829	10.9	21.9	43.7	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:10	628853	EPA 7471B	1	02/13/2018 08:59	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.026	0.0052	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A920-EFR-D-SO	Collect Date	02/08/2018 11:00	GCAL ID	21802092522
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	10	02/13/2018 10:42	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.69	0.11	0.21	0.42	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	100	02/13/2018 10:37	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	58.5	1.06	2.12	4.23	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:10	628853	EPA 7471B	1	02/13/2018 09:01	LWZ	628923
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0048	0.012	0.012	mg/kg

24A922-EFL-D-SO	Collect Date	02/08/2018 11:35	GCAL ID	21802092523
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	10	02/13/2018 10:50	AWG	628922
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.33	0.11	0.23	0.46	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A922-EFL-D-SO	Collect Date	02/08/2018 11:35	GCAL ID	21802092523
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	100	02/13/2018 10:46	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	353	1.15	2.30	4.59	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:10	628853	EPA 7471B	1	02/13/2018 09:03	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.039	0.0056	0.014	0.014	mg/kg

24A922-EFR-D-SO	Collect Date	02/08/2018 11:35	GCAL ID	21802092524
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	10	02/13/2018 10:59	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.51	0.11	0.22	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	1000	02/13/2018 20:23	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	644	10.8	21.6	43.2	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A922-EFR-D-SO	Collect Date	02/08/2018 11:35	GCAL ID	21802092524
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:10	628853	EPA 7471B	1	02/13/2018 09:13	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0051	0.013	0.013	mg/kg

24A923-EFL-D-SO	Collect Date	02/08/2018 11:45	GCAL ID	21802092525
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	10	02/13/2018 11:08	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.14	0.11	0.23	0.45	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	100	02/13/2018 11:04	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	79.0	1.13	2.25	4.51	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:10	628853	EPA 7471B	1	02/13/2018 09:15	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0050	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A923-EFR-D-SO	Collect Date	02/08/2018 11:45	GCAL ID	21802092526
	Receive Date	02/09/2018 09:40	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	10	02/13/2018 11:30	AWG	628922

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.95	0.11	0.21	0.43	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:00	628843	EPA 3050B	1000	02/13/2018 20:27	AWG	629043

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	478	10.7	21.3	42.7	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/11/2018 12:10	628853	EPA 7471B	1	02/13/2018 09:17	LWZ	628923

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0052	0.013	0.013	mg/kg



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 628923	Client ID GCAL ID	MB628842 1773867	LCS628842 1773868				
Prep Batch 628842	Sample Type Prep Date	MB 02/12/2018 09:50	LCS 02/12/2018 09:50				
Prep Method EPA 7471B	Analysis Date Matrix	02/12/2018 17:45 Solid	02/12/2018 17:47 Solid				
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	0.010U	0.010	0.25	0.23	93	80 - 124

Analytical Batch 628923	Client ID GCAL ID	24A948-EFL-D-SO 21802092501	1773438MS 1773869					1773438MSD 1773870				
Prep Batch 628842	Sample Type Prep Date	SAMPLE 02/12/2018 09:50	MS 02/12/2018 09:50					MSD 02/12/2018 09:50				
Prep Method EPA 7471B	Analysis Date Matrix	02/12/2018 17:49 Solid	02/12/2018 17:51 Solid					02/12/2018 17:53 Solid				
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Mercury	7439-97-6	0.029	0.011	0.25	0.28	101	80 - 124	0.25	0.29	103	2	30

Analytical Batch 628923	Client ID GCAL ID	MB628853 1773904	LCS628853 1773905				
Prep Batch 628853	Sample Type Prep Date	MB 02/11/2018 12:10	LCS 02/11/2018 12:10				
Prep Method EPA 7471B	Analysis Date Matrix	02/13/2018 08:55 Solid	02/13/2018 08:57 Solid				
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	0.010U	0.010	0.25	0.26	103	80 - 124

Analytical Batch 629043	Client ID GCAL ID	MB628794 1773542	LCS628794 1773543				
Prep Batch 628794	Sample Type Prep Date	MB 02/12/2018 09:00	LCS 02/12/2018 09:00				
Prep Method EPA 3050B	Analysis Date Matrix	02/13/2018 15:42 Solid	02/13/2018 15:49 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.020U	0.020	2.00	2.02	101	82 - 118
Lead	7439-92-1	0.020U	0.020	2.00	2.02	101	84 - 118

Analytical Batch 629043	Client ID GCAL ID	24A948-EFL-D-SO 21802092501	1773438MS 1773544					1773438MSD 1773545				
Prep Batch 628794	Sample Type Prep Date	SAMPLE 02/12/2018 09:00	MS 02/12/2018 09:00					MSD 02/12/2018 09:00				
Prep Method EPA 3050B	Analysis Date Matrix	02/13/2018 16:16 Solid	02/13/2018 16:20 Solid					02/13/2018 16:25 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Arsenic	7440-38-2	3.49	0.22	2.24	5.74	101	82 - 118	2.24	6.14	118	7	30

Analytical Batch 629043	Client ID GCAL ID	24A948-EFL-D-SO 21802092501	1773438MS 1773544					1773438MSD 1773545				
Prep Batch 628794	Sample Type Prep Date	SAMPLE 02/12/2018 09:00	MS 02/12/2018 09:00					MSD 02/12/2018 09:00				
Prep Method EPA 3050B	Analysis Date Matrix	02/14/2018 09:43 Solid	02/14/2018 09:48 Solid					02/14/2018 09:52 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Lead	7439-92-1	458	22.4	2.24	838	17000*	84 - 118	2.24	180	-12500*	129*	30



Report#: 218020925

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 628922	Client ID GCAL ID	MB628843 1773871	LCS628843 1773872				
Prep Batch 628843	Sample Type Prep Date	MB 02/11/2018 12:00	LCS 02/11/2018 12:00				
Prep Method EPA 3050B	Analysis Date Matrix	02/13/2018 10:20 Solid	02/13/2018 10:24 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.020U	0.020	2.00	1.89	94	82 - 118
Lead	7439-92-1	0.020U	0.020	2.00	1.87	94	84 - 118



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218020925
 PM: AEC



Report To:				Bill To:				Analytical Requests & Method				Custody Seal:	
Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Pb, Hg, & As (SW846 6010C or 6020B & 7470)				Used: <input type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Temperature: 1.5E29 12CAM	
P.O. Number R20179-0005				Project Name/Number FWDA Parcel 21, SWMU 1 and Parcel 24								<input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered	
Sampled By: Katie Stout													
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers							GCAL ID
S	02/08/18	930		x	24A948-EFL-D-SO	1	x						-1
S	02/08/18	930		x	24A948-EFR-D-SO	1	x						-2
S	02/08/18	940		x	24A950-EFL-D-SO	1	x						-3
S	02/08/18	940		x	24A950-EFR-D-SO	1	x						-4
S	02/08/18	945		x	24A951-EFL-D-SO	1	x						-5
S	02/08/18	945		x	24A951-EFR-D-SO	1	x						-6
S	02/08/18	955		x	24A952-EFL-D-SO	1	x						-7
S	02/08/18	955		x	24A952-EFR-D-SO	1	x						-8
S	02/08/18	1010		x	24A939-EFL-D-SO	1	x						-9
S	02/08/18	1010		x	24A939-EFR-D-SO	1	x						-10
S	02/08/18	1015		x	24A938-EFR-D-SO	1	x						-11
S	02/08/18	1020		x	24A936-EFL-D-SO	1	x						-12
S	02/08/18	1020		x	24A936-EFR-D-SO	1	x						-13
S	02/08/18	1030		x	24A935-EFL-D-SO	1	x						-14
S	02/08/18	1030		x	24A935-EFR-D-SO	1	x						-15
S	02/08/18	1035		x	24A934-EFL-D-SO	1	x						-16
S	02/08/18	1040		x	24A933-EFL-D-SO	1	x						-17
S	02/08/18	1040		x	24A933-EFR-D-SO	1	x						-18
S	02/08/18	1050		x	24A929-EFL-D-SO	1	x						-19
S	02/08/18	1050		x	24A929-EFR-D-SO	1	x						-20
S	02/08/18	1100		x	24A920-EFL-D-SO	1	x						-21
S	02/08/18	1100		x	24A920-EFR-D-SO	1	x						-22
S	02/08/18	1135		x	24A922-EFL-D-SO	1	x						-23
S	02/08/18	1135		x	24A922-EFR-D-SO	1	x						-24
S	02/08/18	1145		x	24A923-EFL-D-SO	1	x						-25
S	02/08/18	1145		x	24A923-EFR-D-SO	1	x						-26
Airbill Number: 424405056574													
Turn Around Time(Business Days):						<input checked="" type="checkbox"/> RUSH* _3_ Days <input type="checkbox"/> Standard (per contract/quote)							
Relinquished by (Signature): <i>Katie Stout</i>		Date/Time: 2/8/18 1400		Received by (Signature): <i>[Signature]</i>		Date/Time:		Notes:					
Relinquished by (Signature): <i>FEDEX</i>		Date/Time: 2/9/18		Received by (Signature): <i>[Signature]</i>		Date/Time: 2/9/18 0940							
Relinquished by (Signature):		Date/Time:		Received by (Signature):		Date/Time:							
COC 02082018													

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

*. Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218020925			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274613	Received By Reese, Sean M		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 6 - 3 BD Task8 Igloo Drains	Receive Date(s) 02/09/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill 4244 0505 6574	Thermometer ID: E29	Temp °C 1.5	None	None		
NOTES						

Revision 1.6

Page 1 of 1



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC

7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 08/26/2019

GCAL Report 218021729



Project FWDA Parcel21,SWMU1 & Parcel24

<i>Deliver To</i>	<i>Additional Recipients</i>
Emily McRee Zapata Incorporated 6302 Fairview Rd Suite 600 Charlotte, NC 28210	NONE





Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218021729



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Case Narrative

Client: Zapata Incorporated **Report:** 218021729

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21802172901	24A924-EFR-D-SO	Solid	02/15/2018 08:55	02/17/2018 10:20
21802172902	24A925-EFR-D-SO	Solid	02/15/2018 09:00	02/17/2018 10:20
21802172903	24A925-EFL-D-SO	Solid	02/15/2018 09:02	02/17/2018 10:20
21802172904	24A926-EFR-D-SO	Solid	02/15/2018 09:10	02/17/2018 10:20
21802172905	24A926-EFL-D-SO	Solid	02/15/2018 09:12	02/17/2018 10:20
21802172906	24A927-EFL-D-SO	Solid	02/15/2018 09:15	02/17/2018 10:20
21802172907	24A918-EFR-D-SO	Solid	02/15/2018 09:20	02/17/2018 10:20
21802172908	24A918-EFL-D-SO	Solid	02/15/2018 09:23	02/17/2018 10:20



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21802172901	24A924-EFR-D-SO	S	EPA 6020A
21802172901	24A924-EFR-D-SO	S	EPA 6020 Solid Prep
21802172901	24A924-EFR-D-SO	S	EPA 7471B
21802172901	24A924-EFR-D-SO	S	EPA 7471B Solid Prep
21802172901	24A924-EFR-D-SO	S	Dry Weight/Percent Moisture
21802172902	24A925-EFR-D-SO	S	EPA 6020A
21802172902	24A925-EFR-D-SO	S	EPA 6020 Solid Prep
21802172902	24A925-EFR-D-SO	S	EPA 7471B
21802172902	24A925-EFR-D-SO	S	EPA 7471B Solid Prep
21802172902	24A925-EFR-D-SO	S	Dry Weight/Percent Moisture
21802172903	24A925-EFL-D-SO	S	EPA 6020A
21802172903	24A925-EFL-D-SO	S	EPA 6020 Solid Prep
21802172903	24A925-EFL-D-SO	S	EPA 7471B
21802172903	24A925-EFL-D-SO	S	EPA 7471B Solid Prep
21802172903	24A925-EFL-D-SO	S	Dry Weight/Percent Moisture
21802172904	24A926-EFR-D-SO	S	EPA 6020A
21802172904	24A926-EFR-D-SO	S	EPA 6020 Solid Prep
21802172904	24A926-EFR-D-SO	S	EPA 7471B
21802172904	24A926-EFR-D-SO	S	EPA 7471B Solid Prep
21802172904	24A926-EFR-D-SO	S	Dry Weight/Percent Moisture
21802172905	24A926-EFL-D-SO	S	EPA 6020A
21802172905	24A926-EFL-D-SO	S	EPA 6020 Solid Prep
21802172905	24A926-EFL-D-SO	S	EPA 7471B
21802172905	24A926-EFL-D-SO	S	EPA 7471B Solid Prep
21802172905	24A926-EFL-D-SO	S	Dry Weight/Percent Moisture
21802172906	24A927-EFL-D-SO	S	EPA 6020A
21802172906	24A927-EFL-D-SO	S	EPA 6020 Solid Prep
21802172906	24A927-EFL-D-SO	S	EPA 7471B
21802172906	24A927-EFL-D-SO	S	EPA 7471B Solid Prep
21802172906	24A927-EFL-D-SO	S	Dry Weight/Percent Moisture
21802172907	24A918-EFR-D-SO	S	EPA 6020A
21802172907	24A918-EFR-D-SO	S	EPA 6020 Solid Prep
21802172907	24A918-EFR-D-SO	S	EPA 7471B
21802172907	24A918-EFR-D-SO	S	EPA 7471B Solid Prep
21802172907	24A918-EFR-D-SO	S	Dry Weight/Percent Moisture
21802172908	24A918-EFL-D-SO	S	EPA 6020A
21802172908	24A918-EFL-D-SO	S	EPA 6020 Solid Prep
21802172908	24A918-EFL-D-SO	S	EPA 7471B
21802172908	24A918-EFL-D-SO	S	EPA 7471B Solid Prep
21802172908	24A918-EFL-D-SO	S	Dry Weight/Percent Moisture



Report#: 218021729

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A924-EFR-D-SO	Collect Date	02/15/2018 08:55	GCAL ID	21802172901
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.17	0.13	0.26	0.53	mg/kg
7439-92-1	Lead	214	1.32	2.64	5.29	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.058	0.0062	0.016	0.016	mg/kg

24A925-EFR-D-SO	Collect Date	02/15/2018 09:00	GCAL ID	21802172902
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.02	0.12	0.24	0.48	mg/kg
7439-92-1	Lead	270	1.21	2.42	4.85	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.024	0.0053	0.013	0.013	mg/kg

24A925-EFL-D-SO	Collect Date	02/15/2018 09:02	GCAL ID	21802172903
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.52	0.12	0.25	0.50	mg/kg
7439-92-1	Lead	104	1.25	2.50	5.00	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A925-EFL-D-SO	Collect Date	02/15/2018 09:02	GCAL ID	21802172903
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0057	0.014	0.014	mg/kg

24A926-EFR-D-SO	Collect Date	02/15/2018 09:10	GCAL ID	21802172904
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.39	0.14	0.28	0.55	mg/kg
7439-92-1	Lead	126	1.38	2.77	5.53	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0061	0.015	0.015	mg/kg

24A926-EFL-D-SO	Collect Date	02/15/2018 09:12	GCAL ID	21802172905
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.48	0.12	0.24	0.49	mg/kg
7439-92-1	Lead	1490	12.2	24.4	48.9	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.037	0.0056	0.014	0.014	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A927-EFL-D-SO	Collect Date	02/15/2018 09:15	GCAL ID	21802172906
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.35	0.12	0.24	0.49	mg/kg
7439-92-1	Lead	127	1.22	2.44	4.87	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.039	0.0059	0.015	0.015	mg/kg

24A918-EFR-D-SO	Collect Date	02/15/2018 09:20	GCAL ID	21802172907
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.25	0.13	0.26	0.52	mg/kg
7439-92-1	Lead	2870	13.0	26.0	51.9	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0061	0.015	0.015	mg/kg

24A918-EFL-D-SO	Collect Date	02/15/2018 09:23	GCAL ID	21802172908
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.89	0.13	0.27	0.53	mg/kg
7439-92-1	Lead	217	1.33	2.65	5.30	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A918-EFL-D-SO	Collect Date	02/15/2018 09:23	GCAL ID	21802172908
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.043	0.0062	0.016	0.016	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A924-EFR-D-SO	Collect Date	02/15/2018 08:55	GCAL ID	21802172901
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	10	02/19/2018 23:48	AWG	629463
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.17	0.13	0.26	0.53	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	100	02/19/2018 23:44	AWG	629463
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	214	1.32	2.64	5.29	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 13:25	629319	EPA 7471B	1	02/20/2018 11:17	LWZ	629490
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.058	0.0062	0.016	0.016	mg/kg

24A925-EFR-D-SO	Collect Date	02/15/2018 09:00	GCAL ID	21802172902
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	10	02/20/2018 00:02	AWG	629463
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.02	0.12	0.24	0.48	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A925-EFR-D-SO	Collect Date	02/15/2018 09:00	GCAL ID	21802172902
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	100	02/19/2018 23:57	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	270	1.21	2.42	4.85	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 13:25	629319	EPA 7471B	1	02/20/2018 11:19	LWZ	629490

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.024	0.0053	0.013	0.013	mg/kg

24A925-EFL-D-SO	Collect Date	02/15/2018 09:02	GCAL ID	21802172903
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	10	02/20/2018 00:15	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.52	0.12	0.25	0.50	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	100	02/20/2018 00:10	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	104	1.25	2.50	5.00	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A925-EFL-D-SO	Collect Date	02/15/2018 09:02	GCAL ID	21802172903
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 13:25	629319	EPA 7471B	1	02/20/2018 11:21	LWZ	629490

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0057	0.014	0.014	mg/kg

24A926-EFR-D-SO	Collect Date	02/15/2018 09:10	GCAL ID	21802172904
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	10	02/20/2018 00:50	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.39	0.14	0.28	0.55	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	100	02/20/2018 00:46	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	126	1.38	2.77	5.53	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 13:25	629319	EPA 7471B	1	02/20/2018 11:22	LWZ	629490

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.035	0.0061	0.015	0.015	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A926-EFL-D-SO	Collect Date	02/15/2018 09:12	GCAL ID	21802172905
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	10	02/20/2018 01:03	AWG	629463
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.48	0.12	0.24	0.49	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	1000	02/20/2018 10:31	AWG	629463
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	1490	12.2	24.4	48.9	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 13:25	629319	EPA 7471B	1	02/20/2018 11:24	LWZ	629490
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.037	0.0056	0.014	0.014	mg/kg

24A927-EFL-D-SO	Collect Date	02/15/2018 09:15	GCAL ID	21802172906
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	10	02/20/2018 01:16	AWG	629463
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.35	0.12	0.24	0.49	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A927-EFL-D-SO	Collect Date	02/15/2018 09:15	GCAL ID	21802172906
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	100	02/20/2018 01:12	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	127	1.22	2.44	4.87	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 13:25	629319	EPA 7471B	1	02/20/2018 11:27	LWZ	629490

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.039	0.0059	0.015	0.015	mg/kg

24A918-EFR-D-SO	Collect Date	02/15/2018 09:20	GCAL ID	21802172907
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	10	02/20/2018 01:30	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.25	0.13	0.26	0.52	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	1000	02/20/2018 10:36	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	2870	13.0	26.0	51.9	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A918-EFR-D-SO	Collect Date	02/15/2018 09:20	GCAL ID	21802172907
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 13:25	629319	EPA 7471B	1	02/20/2018 11:33	LWZ	629490

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0061	0.015	0.015	mg/kg

24A918-EFL-D-SO	Collect Date	02/15/2018 09:23	GCAL ID	21802172908
	Receive Date	02/17/2018 10:20	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	10	02/20/2018 01:43	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.89	0.13	0.27	0.53	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 10:00	629316	EPA 3050B	100	02/20/2018 01:38	AWG	629463

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	217	1.33	2.65	5.30	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
02/19/2018 13:25	629319	EPA 7471B	1	02/20/2018 11:35	LWZ	629490

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.043	0.0062	0.016	0.016	mg/kg



Report#: 218021729

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 629490	Client ID GCAL ID	MB629319 1776276	LCS629319 1776277				
Prep Batch 629319	Sample Type Prep Date	MB 02/19/2018 13:25	LCS 02/19/2018 13:25				
Prep Method EPA 7471B	Analysis Date Matrix	02/20/2018 10:50 Solid	02/20/2018 10:52 Solid				
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	0.010U	0.010	0.25	0.25	102	80 - 124

Analytical Batch 629463	Client ID GCAL ID	MB629316 1776268	LCS629316 1776269				
Prep Batch 629316	Sample Type Prep Date	MB 02/19/2018 10:00	LCS 02/19/2018 10:00				
Prep Method EPA 3050B	Analysis Date Matrix	02/19/2018 23:35 Solid	02/19/2018 23:40 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.020U	0.020	2.00	2.03	101	82 - 118
Lead	7439-92-1	0.020U	0.020	2.00	2.12	106	84 - 118



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218021729
 PM: AEC



Report To:				Bill To:				Analytical Requests & Method				Custody Seal: Used: <input type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Temperature: <u>1.1</u> 24°C PM <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered			
Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Pb, Hg, & As (SW846 6010C)							
P.O. Number R20179-0005		Project Name/Number FWDA Parcel 21, SWMU 1 and Parcel 24													
Sampled By: Emma Baghel															
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers								← Preservative / Notes ↓	GCAL ID
S	2/15/2018	855		x	24A924-EFR-D-SO	1	X								-1
S	2/15/2018	900		x	24A925-EFR-D-SO	1	X								-2
S	2/15/2018	902		x	24A925-EFL-D-SO	1	X								-3
S	2/15/2018	910		x	24A926-EFR-D-SO	1	X								-4
S	2/15/2018	912		x	24A926-EFL-D-SO	1	X								-5
S	2/15/2018	915		x	24A927-EFL-D-SO	1	X								-6
S	2/15/2018	920		x	24A918-EFR-D-SO	1	X								-7
S	2/15/2018	923		x	24A918-EFL-D-SO	1	X								-8
Airbill Number: <u>7715-0590-1260</u>															
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* _5_ Days <input type="checkbox"/> Standard (per contract/quote)															
Relinquished by: (Signature)			Date/Time:		Received by: (Signature)			Date/Time:		Notes:					
FedEx			02-17-18		Tiffany Dwyer			02-17-18							
Relinquished by: (Signature)			Date/Time:		Received by: (Signature)			Date/Time:							
COC 02142018															

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *. Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218021729			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274613	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 6 - 3 BD Task8 Igloo Drains	Receive Date(s) 02/17/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: e29	Temp °C	None	None		
7715-0590-1260		1.1				
NOTES						

Revision 1.6

Page 1 of 1



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 08/26/2019

GCAL Report 218031317



Project FWDA Parcel21,SWMU1 & Parcel24

<i>Deliver To</i>	<i>Additional Recipients</i>
Emily McRee Zapata Incorporated 6302 Fairview Rd Suite 600 Charlotte, NC 28210	NONE





Report#: 218031317

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218031317



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Case Narrative

Client: Zapata Incorporated Report: 218031317

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

PROJECT MANAGER COMMENTS

Samples logged in per revised COC received on 3/13/18 from Emily McRee. (Amanda Cobb 03/13/2018 12:34)

METALS

In the EPA 6020B analysis for prep batch 631044, the MS and/or MSD recovery is outside the control limits for Arsenic. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference or the element is non-homogeneous in the sample. A post-digestion spike was performed.

In the EPA 6020B analysis for prep batch 631044, the MS/MSD recoveries and RPD are not applicable for Lead because the sample concentration is greater than four times the spike concentration.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21803131701	24A917-EFR-D-SO	Solid	03/12/2018 14:00	03/13/2018 10:10
21803131702	24A917-EFL-D-SO	Solid	03/12/2018 14:00	03/13/2018 10:10
21803131703	24A916-EFR-D-SO	Solid	03/12/2018 13:54	03/13/2018 10:10
21803131704	24A916-EFL-D-SO	Solid	03/12/2018 13:54	03/13/2018 10:10
21803131705	24A915-EFR-D-SO	Solid	03/12/2018 13:48	03/13/2018 10:10
21803131706	24A915-EFL-D-SO	Solid	03/12/2018 13:48	03/13/2018 10:10
21803131707	24A914-EFR-D-SO	Solid	03/12/2018 13:42	03/13/2018 10:10
21803131708	24A914-EFL-D-SO	Solid	03/12/2018 13:42	03/13/2018 10:10
21803131709	24A913-EFR-D-SO	Solid	03/12/2018 13:37	03/13/2018 10:10
21803131710	24A913-EFL-D-SO	Solid	03/12/2018 13:37	03/13/2018 10:10
21803131711	24A912-EFR-D-SO	Solid	03/12/2018 13:27	03/13/2018 10:10
21803131712	24A912-EFL-D-SO	Solid	03/12/2018 13:27	03/13/2018 10:10
21803131713	24A909-EFR-D-SO	Solid	03/12/2018 13:32	03/13/2018 10:10
21803131714	24A909-EFL-D-SO	Solid	03/12/2018 13:32	03/13/2018 10:10
21803131715	24A907-EFR-D-SO	Solid	03/12/2018 13:23	03/13/2018 10:10
21803131716	24A905-EFR-D-SO	Solid	03/12/2018 13:18	03/13/2018 10:10
21803131717	24A905-EFL-D-SO	Solid	03/12/2018 13:18	03/13/2018 10:10
21803131718	24A903-EFR-D-SO	Solid	03/12/2018 13:07	03/13/2018 10:10
21803131719	24A903-EFL-D-SO	Solid	03/12/2018 13:07	03/13/2018 10:10
21803131720	24A-EF-D-SO-DUP01	Solid	03/12/2018 00:01	03/13/2018 10:10
21803131721	24A-EF-D-SO-DUP02	Solid	03/12/2018 00:01	03/13/2018 10:10
21803131722	24A-EF-D-SO-DUP03	Solid	03/12/2018 00:01	03/13/2018 10:10
21803131723	24A-EF-D-SO-DUP04	Solid	03/12/2018 00:01	03/13/2018 10:10



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21803131701	24A917-EFR-D-SO	S	EPA 6020A
21803131701	24A917-EFR-D-SO	S	EPA 6020 Solid Prep
21803131701	24A917-EFR-D-SO	S	EPA 7471B
21803131701	24A917-EFR-D-SO	S	EPA 7471B Solid Prep
21803131701	24A917-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131702	24A917-EFL-D-SO	S	EPA 6020A
21803131702	24A917-EFL-D-SO	S	EPA 6020 Solid Prep
21803131702	24A917-EFL-D-SO	S	EPA 7471B
21803131702	24A917-EFL-D-SO	S	EPA 7471B Solid Prep
21803131702	24A917-EFL-D-SO	S	Dry Weight/Percent Moisture
21803131703	24A916-EFR-D-SO	S	EPA 6020A
21803131703	24A916-EFR-D-SO	S	EPA 6020 Solid Prep
21803131703	24A916-EFR-D-SO	S	EPA 7471B
21803131703	24A916-EFR-D-SO	S	EPA 7471B Solid Prep
21803131703	24A916-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131704	24A916-EFL-D-SO	S	EPA 6020A
21803131704	24A916-EFL-D-SO	S	EPA 6020 Solid Prep
21803131704	24A916-EFL-D-SO	S	EPA 7471B
21803131704	24A916-EFL-D-SO	S	EPA 7471B Solid Prep
21803131704	24A916-EFL-D-SO	S	Dry Weight/Percent Moisture
21803131705	24A915-EFR-D-SO	S	EPA 6020A
21803131705	24A915-EFR-D-SO	S	EPA 6020 Solid Prep
21803131705	24A915-EFR-D-SO	S	EPA 7471B
21803131705	24A915-EFR-D-SO	S	EPA 7471B Solid Prep
21803131705	24A915-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131706	24A915-EFL-D-SO	S	EPA 6020A
21803131706	24A915-EFL-D-SO	S	EPA 6020 Solid Prep
21803131706	24A915-EFL-D-SO	S	EPA 7471B
21803131706	24A915-EFL-D-SO	S	EPA 7471B Solid Prep
21803131706	24A915-EFL-D-SO	S	Dry Weight/Percent Moisture
21803131707	24A914-EFR-D-SO	S	EPA 6020A
21803131707	24A914-EFR-D-SO	S	EPA 6020 Solid Prep
21803131707	24A914-EFR-D-SO	S	EPA 7471B
21803131707	24A914-EFR-D-SO	S	EPA 7471B Solid Prep
21803131707	24A914-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131708	24A914-EFL-D-SO	S	EPA 6020A
21803131708	24A914-EFL-D-SO	S	EPA 6020 Solid Prep
21803131708	24A914-EFL-D-SO	S	EPA 7471B
21803131708	24A914-EFL-D-SO	S	EPA 7471B Solid Prep
21803131708	24A914-EFL-D-SO	S	Dry Weight/Percent Moisture
21803131709	24A913-EFR-D-SO	S	EPA 6020A
21803131709	24A913-EFR-D-SO	S	EPA 6020 Solid Prep
21803131709	24A913-EFR-D-SO	S	EPA 7471B
21803131709	24A913-EFR-D-SO	S	EPA 7471B Solid Prep
21803131709	24A913-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131710	24A913-EFL-D-SO	S	EPA 6020A
21803131710	24A913-EFL-D-SO	S	EPA 6020 Solid Prep
21803131710	24A913-EFL-D-SO	S	EPA 7471B
21803131710	24A913-EFL-D-SO	S	EPA 7471B Solid Prep
21803131710	24A913-EFL-D-SO	S	Dry Weight/Percent Moisture



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary (Continued)

GCAL ID	Client ID	Matrix	Procedure
21803131711	24A912-EFR-D-SO	S	EPA 6020A
21803131711	24A912-EFR-D-SO	S	EPA 6020 Solid Prep
21803131711	24A912-EFR-D-SO	S	EPA 7471B
21803131711	24A912-EFR-D-SO	S	EPA 7471B Solid Prep
21803131711	24A912-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131712	24A912-EFL-D-SO	S	EPA 6020A
21803131712	24A912-EFL-D-SO	S	EPA 6020 Solid Prep
21803131712	24A912-EFL-D-SO	S	EPA 7471B
21803131712	24A912-EFL-D-SO	S	EPA 7471B Solid Prep
21803131712	24A912-EFL-D-SO	S	Dry Weight/Percent Moisture
21803131713	24A909-EFR-D-SO	S	EPA 6020A
21803131713	24A909-EFR-D-SO	S	EPA 6020 Solid Prep
21803131713	24A909-EFR-D-SO	S	EPA 7471B
21803131713	24A909-EFR-D-SO	S	EPA 7471B Solid Prep
21803131713	24A909-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131714	24A909-EFL-D-SO	S	EPA 6020A
21803131714	24A909-EFL-D-SO	S	EPA 6020 Solid Prep
21803131714	24A909-EFL-D-SO	S	EPA 7471B
21803131714	24A909-EFL-D-SO	S	EPA 7471B Solid Prep
21803131714	24A909-EFL-D-SO	S	Dry Weight/Percent Moisture
21803131715	24A907-EFR-D-SO	S	EPA 6020A
21803131715	24A907-EFR-D-SO	S	EPA 6020 Solid Prep
21803131715	24A907-EFR-D-SO	S	EPA 7471B
21803131715	24A907-EFR-D-SO	S	EPA 7471B Solid Prep
21803131715	24A907-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131716	24A905-EFR-D-SO	S	EPA 6020A
21803131716	24A905-EFR-D-SO	S	EPA 6020 Solid Prep
21803131716	24A905-EFR-D-SO	S	EPA 7471B
21803131716	24A905-EFR-D-SO	S	EPA 7471B Solid Prep
21803131716	24A905-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131717	24A905-EFL-D-SO	S	EPA 6020A
21803131717	24A905-EFL-D-SO	S	EPA 6020 Solid Prep
21803131717	24A905-EFL-D-SO	S	EPA 7471B
21803131717	24A905-EFL-D-SO	S	EPA 7471B Solid Prep
21803131717	24A905-EFL-D-SO	S	Dry Weight/Percent Moisture
21803131718	24A903-EFR-D-SO	S	EPA 6020A
21803131718	24A903-EFR-D-SO	S	EPA 6020 Solid Prep
21803131718	24A903-EFR-D-SO	S	EPA 7471B
21803131718	24A903-EFR-D-SO	S	EPA 7471B Solid Prep
21803131718	24A903-EFR-D-SO	S	Dry Weight/Percent Moisture
21803131719	24A903-EFL-D-SO	S	EPA 6020A
21803131719	24A903-EFL-D-SO	S	EPA 6020 Solid Prep
21803131719	24A903-EFL-D-SO	S	EPA 7471B
21803131719	24A903-EFL-D-SO	S	EPA 7471B Solid Prep
21803131719	24A903-EFL-D-SO	S	Dry Weight/Percent Moisture
21803131720	24A-EF-D-SO-DUP01	S	EPA 6020A
21803131720	24A-EF-D-SO-DUP01	S	EPA 6020 Solid Prep
21803131720	24A-EF-D-SO-DUP01	S	EPA 7471B
21803131720	24A-EF-D-SO-DUP01	S	EPA 7471B Solid Prep
21803131720	24A-EF-D-SO-DUP01	S	Dry Weight/Percent Moisture



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary (Continued)

GCAL ID	Client ID	Matrix	Procedure
21803131721	24A-EF-D-SO-DUP02	S	EPA 6020A
21803131721	24A-EF-D-SO-DUP02	S	EPA 6020 Solid Prep
21803131721	24A-EF-D-SO-DUP02	S	EPA 7471B
21803131721	24A-EF-D-SO-DUP02	S	EPA 7471B Solid Prep
21803131721	24A-EF-D-SO-DUP02	S	Dry Weight/Percent Moisture
21803131722	24A-EF-D-SO-DUP03	S	EPA 6020A
21803131722	24A-EF-D-SO-DUP03	S	EPA 6020 Solid Prep
21803131722	24A-EF-D-SO-DUP03	S	EPA 7471B
21803131722	24A-EF-D-SO-DUP03	S	EPA 7471B Solid Prep
21803131722	24A-EF-D-SO-DUP03	S	Dry Weight/Percent Moisture
21803131723	24A-EF-D-SO-DUP04	S	EPA 6020A
21803131723	24A-EF-D-SO-DUP04	S	EPA 6020 Solid Prep
21803131723	24A-EF-D-SO-DUP04	S	EPA 7471B
21803131723	24A-EF-D-SO-DUP04	S	EPA 7471B Solid Prep
21803131723	24A-EF-D-SO-DUP04	S	Dry Weight/Percent Moisture



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A917-EFR-D-SO	Collect Date	03/12/2018 14:00	GCAL ID	21803131701
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.09	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	62.7	1.12	2.23	4.46	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0052	0.013	0.013	mg/kg

24A917-EFL-D-SO	Collect Date	03/12/2018 14:00	GCAL ID	21803131702
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.75	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	30.5	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.025	0.0054	0.014	0.014	mg/kg

24A916-EFR-D-SO	Collect Date	03/12/2018 13:54	GCAL ID	21803131703
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.12	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	29.8	0.11	0.22	0.44	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A916-EFR-D-SO	Collect Date	03/12/2018 13:54	GCAL ID	21803131703
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0051	0.013	0.013	mg/kg

24A916-EFL-D-SO	Collect Date	03/12/2018 13:54	GCAL ID	21803131704
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.75	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	15.7	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.019	0.0052	0.013	0.013	mg/kg

24A915-EFR-D-SO	Collect Date	03/12/2018 13:48	GCAL ID	21803131705
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.28	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	44.2	1.09	2.17	4.35	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.016	0.0050	0.012	0.012	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A915-EFL-D-SO	Collect Date	03/12/2018 13:48	GCAL ID	21803131706
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.02	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	23.8	0.11	0.22	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.018	0.0050	0.013	0.013	mg/kg

24A914-EFR-D-SO	Collect Date	03/12/2018 13:42	GCAL ID	21803131707
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.68	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	28.6	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.014	0.0051	0.013	0.013	mg/kg

24A914-EFL-D-SO	Collect Date	03/12/2018 13:42	GCAL ID	21803131708
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.33	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	18.9	0.11	0.22	0.44	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A914-EFL-D-SO	Collect Date	03/12/2018 13:42	GCAL ID	21803131708
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0072J	0.0044	0.011	0.011	mg/kg

24A913-EFR-D-SO	Collect Date	03/12/2018 13:37	GCAL ID	21803131709
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.77	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	41.9	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.010J	0.0052	0.013	0.013	mg/kg

24A913-EFL-D-SO	Collect Date	03/12/2018 13:37	GCAL ID	21803131710
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.86	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	18.7	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0055J	0.0051	0.013	0.013	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A912-EFR-D-SO	Collect Date	03/12/2018 13:27	GCAL ID	21803131711
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.08	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	39.5	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.019	0.0052	0.013	0.013	mg/kg

24A912-EFL-D-SO	Collect Date	03/12/2018 13:27	GCAL ID	21803131712
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.19	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	39.2	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0091J	0.0051	0.013	0.013	mg/kg

24A909-EFR-D-SO	Collect Date	03/12/2018 13:32	GCAL ID	21803131713
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.11	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	25.3	0.11	0.22	0.44	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A909-EFR-D-SO	Collect Date	03/12/2018 13:32	GCAL ID	21803131713
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.019	0.0052	0.013	0.013	mg/kg

24A909-EFL-D-SO	Collect Date	03/12/2018 13:32	GCAL ID	21803131714
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.30	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	164	1.09	2.18	4.36	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.010J	0.0049	0.012	0.012	mg/kg

24A907-EFR-D-SO	Collect Date	03/12/2018 13:23	GCAL ID	21803131715
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.70	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	57.9	1.09	2.17	4.34	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.011J	0.0049	0.012	0.012	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A905-EFR-D-SO	Collect Date	03/12/2018 13:18	GCAL ID	21803131716
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.50	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	96.8	1.13	2.26	4.51	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.025	0.0050	0.013	0.013	mg/kg

24A905-EFL-D-SO	Collect Date	03/12/2018 13:18	GCAL ID	21803131717
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.09	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	55.0	1.09	2.18	4.36	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.016	0.0051	0.013	0.013	mg/kg

24A903-EFR-D-SO	Collect Date	03/12/2018 13:07	GCAL ID	21803131718
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.33	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	47.1	1.07	2.14	4.28	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A903-EFR-D-SO	Collect Date	03/12/2018 13:07	GCAL ID	21803131718
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0072J	0.0046	0.012	0.012	mg/kg

24A903-EFL-D-SO	Collect Date	03/12/2018 13:07	GCAL ID	21803131719
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.09	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	61.7	1.13	2.26	4.52	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.029	0.0048	0.012	0.012	mg/kg

24A-EF-D-SO-DUP01	Collect Date	03/12/2018 00:01	GCAL ID	21803131720
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.68	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	48.7	1.08	2.17	4.33	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.032	0.0052	0.013	0.013	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A-EF-D-SO-DUP02	Collect Date	03/12/2018 00:01	GCAL ID	21803131721
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.78	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	31.0	1.12	2.24	4.49	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0054	0.013	0.013	mg/kg

24A-EF-D-SO-DUP03	Collect Date	03/12/2018 00:01	GCAL ID	21803131722
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.27	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	170	1.10	2.20	4.39	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.031	0.0052	0.013	0.013	mg/kg

24A-EF-D-SO-DUP04	Collect Date	03/12/2018 00:01	GCAL ID	21803131723
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.10	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	60.5	1.12	2.25	4.49	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A-EF-D-SO-DUP04	Collect Date	03/12/2018 00:01	GCAL ID	21803131723
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0049	0.012	0.012	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A917-EFR-D-SO	Collect Date	03/12/2018 14:00	GCAL ID	21803131701
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	100	03/15/2018 19:02	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	62.7	1.12	2.23	4.46	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:06	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.09	0.11	0.22	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:14	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.022	0.0052	0.013	0.013	mg/kg

24A917-EFL-D-SO	Collect Date	03/12/2018 14:00	GCAL ID	21803131702
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:10	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.75	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	30.5	0.11	0.22	0.44	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A917-EFL-D-SO	Collect Date	03/12/2018 14:00	GCAL ID	21803131702
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:18	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.025	0.0054	0.014	0.014	mg/kg

24A916-EFR-D-SO	Collect Date	03/12/2018 13:54	GCAL ID	21803131703
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:14	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.12	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	29.8	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:20	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.021	0.0051	0.013	0.013	mg/kg

24A916-EFL-D-SO	Collect Date	03/12/2018 13:54	GCAL ID	21803131704
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:18	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.75	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	15.7	0.11	0.22	0.44	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A916-EFL-D-SO	Collect Date	03/12/2018 13:54	GCAL ID	21803131704
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:23	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.019	0.0052	0.013	0.013	mg/kg

24A915-EFR-D-SO	Collect Date	03/12/2018 13:48	GCAL ID	21803131705
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	100	03/15/2018 19:15	AWG	631257

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	44.2	1.09	2.17	4.35	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:22	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.28	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:25	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.016	0.0050	0.012	0.012	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A915-EFL-D-SO	Collect Date	03/12/2018 13:48	GCAL ID	21803131706
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:25	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.02	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	23.8	0.11	0.22	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:27	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.018	0.0050	0.013	0.013	mg/kg

24A914-EFR-D-SO	Collect Date	03/12/2018 13:42	GCAL ID	21803131707
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:29	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.68	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	28.6	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:29	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.014	0.0051	0.013	0.013	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A914-EFL-D-SO	Collect Date	03/12/2018 13:42	GCAL ID	21803131708
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:33	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.33	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	18.9	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:31	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0072J	0.0044	0.011	0.011	mg/kg

24A913-EFR-D-SO	Collect Date	03/12/2018 13:37	GCAL ID	21803131709
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:52	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.77	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	41.9	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:41	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.010J	0.0052	0.013	0.013	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A913-EFL-D-SO	Collect Date	03/12/2018 13:37	GCAL ID	21803131710
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 13:56	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.86	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	18.7	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:42	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0055J	0.0051	0.013	0.013	mg/kg

24A912-EFR-D-SO	Collect Date	03/12/2018 13:27	GCAL ID	21803131711
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:11	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.08	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	39.5	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:44	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.019	0.0052	0.013	0.013	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A912-EFL-D-SO	Collect Date	03/12/2018 13:27	GCAL ID	21803131712
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:15	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.19	0.11	0.22	0.43	mg/kg
7439-92-1	Lead	39.2	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:46	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0091J	0.0051	0.013	0.013	mg/kg

24A909-EFR-D-SO	Collect Date	03/12/2018 13:32	GCAL ID	21803131713
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:19	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.11	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	25.3	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:48	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.019	0.0052	0.013	0.013	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A909-EFL-D-SO	Collect Date	03/12/2018 13:32	GCAL ID	21803131714
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	100	03/15/2018 20:17	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	164	1.09	2.18	4.36	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:23	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.30	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:50	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.010J	0.0049	0.012	0.012	mg/kg

24A907-EFR-D-SO	Collect Date	03/12/2018 13:23	GCAL ID	21803131715
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	100	03/15/2018 20:20	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	57.9	1.09	2.17	4.34	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A907-EFR-D-SO	Collect Date	03/12/2018 13:23	GCAL ID	21803131715
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:26	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.70	0.11	0.22	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:52	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.011J	0.0049	0.012	0.012	mg/kg

24A905-EFR-D-SO	Collect Date	03/12/2018 13:18	GCAL ID	21803131716
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	100	03/15/2018 20:24	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	96.8	1.13	2.26	4.51	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:30	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.50	0.11	0.23	0.45	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A905-EFR-D-SO	Collect Date	03/12/2018 13:18	GCAL ID	21803131716
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 13:54	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.025	0.0050	0.013	0.013	mg/kg

24A905-EFL-D-SO	Collect Date	03/12/2018 13:18	GCAL ID	21803131717
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	100	03/15/2018 20:27	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	55.0	1.09	2.18	4.36	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:34	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.09	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 14:00	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.016	0.0051	0.013	0.013	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A903-EFR-D-SO	Collect Date	03/12/2018 13:07	GCAL ID	21803131718
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	100	03/15/2018 20:31	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	47.1	1.07	2.14	4.28	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:38	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.33	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 14:02	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0072J	0.0046	0.012	0.012	mg/kg

24A903-EFL-D-SO	Collect Date	03/12/2018 13:07	GCAL ID	21803131719
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	100	03/15/2018 20:34	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	61.7	1.13	2.26	4.52	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A903-EFL-D-SO	Collect Date	03/12/2018 13:07	GCAL ID	21803131719
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 12:45	631044	EPA 3050B	10	03/16/2018 14:42	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.09	0.11	0.23	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 14:04	AWG	631344
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.029	0.0048	0.012	0.012	mg/kg

24A-EF-D-SO-DUP01	Collect Date	03/12/2018 00:01	GCAL ID	21803131720
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:10	631046	EPA 3050B	100	03/15/2018 20:44	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	48.7	1.08	2.17	4.33	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:10	631046	EPA 3050B	10	03/16/2018 14:45	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.68	0.11	0.22	0.43	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A-EF-D-SO-DUP01	Collect Date	03/12/2018 00:01	GCAL ID	21803131720
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:35	631047	EPA 7471B	1	03/16/2018 14:06	AWG	631344

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.032	0.0052	0.013	0.013	mg/kg

24A-EF-D-SO-DUP02	Collect Date	03/12/2018 00:01	GCAL ID	21803131721
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:10	631046	EPA 3050B	100	03/15/2018 20:58	AWG	631257

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	31.0	1.12	2.24	4.49	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:10	631046	EPA 3050B	10	03/16/2018 15:01	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.78	0.11	0.22	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/14/2018 09:30	631048	EPA 7471B	1	03/15/2018 16:01	LWZ	631248

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.033	0.0054	0.013	0.013	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A-EF-D-SO-DUP03	Collect Date	03/12/2018 00:01	GCAL ID	21803131722
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:10	631046	EPA 3050B	100	03/15/2018 21:02	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	170	1.10	2.20	4.39	mg/kg

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:10	631046	EPA 3050B	10	03/16/2018 15:04	AWG	631340
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.27	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/14/2018 09:30	631048	EPA 7471B	1	03/15/2018 16:03	LWZ	631248
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.031	0.0052	0.013	0.013	mg/kg

24A-EF-D-SO-DUP04	Collect Date	03/12/2018 00:01	GCAL ID	21803131723
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:10	631046	EPA 3050B	100	03/15/2018 21:05	AWG	631257
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-92-1	Lead	60.5	1.12	2.25	4.49	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A-EF-D-SO-DUP04	Collect Date	03/12/2018 00:01	GCAL ID	21803131723
	Receive Date	03/13/2018 10:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/13/2018 16:10	631046	EPA 3050B	10	03/16/2018 15:08	AWG	631340

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.10	0.11	0.22	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/14/2018 09:30	631048	EPA 7471B	1	03/15/2018 16:05	LWZ	631248

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0049	0.012	0.012	mg/kg



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 631344	Client ID GCAL ID	MB631047 1785403	LCS631047 1785404			
Prep Batch 631047	Sample Type Prep Date	MB 03/13/2018 16:35	LCS 03/13/2018 16:35			
Prep Method EPA 7471B	Analysis Date Matrix	03/16/2018 13:11 Solid	03/16/2018 13:13 Solid			
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	0.010U	0.010	0.25	0.21	83 80 - 124

Analytical Batch 631344	Client ID GCAL ID	24A914-EFL-D-SO 21803131708	1785334MS 1785405		1785334MSD 1785406					
Prep Batch 631047	Sample Type Prep Date	SAMPLE 03/13/2018 16:35	MS 03/13/2018 16:35		MSD 03/13/2018 16:35					
Prep Method EPA 7471B	Analysis Date Matrix	03/16/2018 13:31 Solid	03/16/2018 13:37 Solid		03/16/2018 13:39 Solid					
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Mercury	7439-97-6	0.0066	0.011	0.25	0.24	95 80 - 124	0.25	0.23	91	4 30

Analytical Batch 631248	Client ID GCAL ID	MB631048 1785410	LCS631048 1785412			
Prep Batch 631048	Sample Type Prep Date	MB 03/14/2018 09:30	LCS 03/14/2018 09:30			
Prep Method EPA 7471B	Analysis Date Matrix	03/15/2018 15:57 Solid	03/15/2018 15:59 Solid			
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	0.0048J	0.010	0.25	0.27	106 80 - 124

Analytical Batch 631340	Client ID GCAL ID	24A914-EFL-D-SO 21803131708	1785334MS 1785394		1785334MSD 1785395					
Prep Batch 631044	Sample Type Prep Date	SAMPLE 03/13/2018 12:45	MS 03/13/2018 12:45		MSD 03/13/2018 12:45					
Prep Method EPA 3050B	Analysis Date Matrix	03/16/2018 13:33 Solid	03/16/2018 13:37 Solid		03/16/2018 13:41 Solid					
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Arsenic	7440-38-2	1.34	0.22	2.19	4.49	144*	2.19	3.83	114	16 30
Lead	7439-92-1	18.9	0.22	2.19	17.4	-66*	2.19	20.2	58*	14 30

Analytical Batch 631257	Client ID GCAL ID	MB631046 1785399			
Prep Batch 631046	Sample Type Prep Date	MB 03/13/2018 16:10			
Prep Method EPA 3050B	Analysis Date Matrix	03/15/2018 20:38 Solid			
EPA 6020B		Units Result	mg/kg LOD		
Arsenic	7440-38-2	0.020U	0.020		
Lead	7439-92-1	0.020U	0.020		



Report#: 218031317

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 631257	Client ID GCAL ID	LCS631046 1785401			
Prep Batch 631046	Sample Type Prep Date	LCS 03/13/2018 16:10			
Prep Method EPA 3050B	Analysis Date Matrix	03/15/2018 20:41 Solid			
EPA 6020B		Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	2.00	2.03	102	82 - 118
Lead	7439-92-1	2.00	1.92	96	84 - 118



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218031317
 PM: AEC



Report To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Bill To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Analytical Requests & Method Pb, Hg, & As (SW846 6010C or 6020B & 7470)				Custody Seal: Used: <input type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Temperature: 2.0 °C 7:16 PM <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered	
P.O. Number R20179-0017		Project Name/Number FWDA Parcel 21, SWMU 1 and Parcel 24											
Sampled By: Kayla Quinter													
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers					← Preservative / Notes ↓	GCAL ID	
S	03/12/18	1400		x	24A917-EFR-D-SO	1	x					1	
S	03/12/18	1400		x	24A917-EFL-D-SO	1	x					2	
S	03/12/18	1354		x	24A916-EFR-D-SO	1	x					3	
S	03/12/18	1354		x	24A916-EFL-D-SO	1	x					4	
S	03/12/18	1348		x	24A915-EFR-D-SO	1	x					5	
S	03/12/18	1348		x	24A915-EFL-D-SO	1	x					6	
S	03/12/18	1342		x	24A914-EFR-D-SO	1	x					7	
S	03/12/18	1342		x	24A914-EFL-D-SO	1	x					8	
S	03/12/18	1337		x	24A913-EFR-D-SO	1	x					9	
S	03/12/18	1337		x	24A913-EFL-D-SO	1	x					10	
S	03/12/18	1327		x	24A912-EFR-D-SO	1	x					11	
S	03/12/18	1327		x	24A912-EFL-D-SO	1	x					12	
S	03/12/18	1332		x	24A909-EFR-D-SO	1	x					13	
S	03/12/18	1332		x	24A909-EFL-D-SO	1	x					14	
S	03/12/18	1323		x	24A907-EFR-D-SO	1	x					15	
S	03/12/18	1318		x	24A905-EFR-D-SO	1	x					16	
S	03/12/18	1318		x	24A905-EFL-D-SO	1	x					17	
S	03/12/18	1307		x	24A903-EFR-D-SO	1	x					18	
S	03/12/18	1307		x	24A903-EFL-D-SO	1	x					19	
S	03/12/18	0000		x	24A-EF-D-SO-DUP01	1	x					20	
S	03/12/18	0000		x	24A-EF-D-SO-DUP02	1	x					21	
S	03/12/18	0000		x	24A-EF-D-SO-DUP03	1	x					22	
S	03/12/18	0000		x	24A-EF-D-SO-DUP04	1	x					23	
Airbill Number: 424405058452													
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* 3 Day <input type="checkbox"/> Standard (per contract/quote)													
Relinquished by: (Signature)			Date/Time:			Received by: (Signature)			Date/Time:			Notes:	
FedEx			3-13-18			T. Quinter			3-13-18				
COC 03122018B													

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218031317
 PM: AEC

Report To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Bill To: Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Analytical Requests & Method Pb, Hg, & As (SW846 6010C or 6020B & 7470)				Custody Seal: Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temperature: 2.0 ^{EQ} 21 CPM <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered	
P.O. Number R20179-0005		Project Name/Number FWDA Parcel 21, SWMU 1 and Parcel 24											
Sampled By: Kayla Quinter													
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers					← Preservative / Notes ↓	GCAL ID	
S	03/12/18	1400		x	24A917-EFR-D-SO	1	x						
S	03/12/18	1400		x	24A917-EFL-D-SO	1	x						
S	03/12/18	1354		x	24A916-EFR-D-SO	1	x						
S	03/12/18	1354		x	24A916-EFL-D-SO	1	x						
S	03/12/18	1348		x	24A915-EFR-D-SO	1	x						
S	03/12/18	1348		x	24A915-EFL-D-SO	1	x						
S	03/12/18	1342		x	24A914-EFR-D-SO	1	x						
S	03/12/18	1342		x	24A914-EFL-D-SO	1	x						
S	03/12/18	1337		x	24A913-EFR-D-SO	1	x						
S	03/12/18	1337		x	24A913-EFL-D-SO	1	x						
S	03/12/18	1327		x	24A912-EFR-D-SO	1	x						
S	03/12/18	1327		x	24A912-EFL-D-SO	1	x						
S	03/12/18	1332		x	24A909-EFR-D-SO	1	x						
S	03/12/18	1332		x	24A909-EFL-D-SO	1	x						
S	03/12/18	1323		x	24A907-EFL-D-SO	1	x						
S	03/12/18	1318		x	24A905-EFR-D-SO	1	x						
S	03/12/18	1318		x	24A905-EFL-D-SO	1	x						
S	03/12/18	1307		x	24A903-EFR-D-SO	1	x						
S	03/12/18	1307		x	24A903-EFL-D-SO	1	x						
S	03/12/18	0000		x	24A-EF-D-SO-DUP01	1	x						
S	03/12/18	0000		x	24A-EF-D-SO-DUP02	1	x						
S	03/12/18	0000		x	24A-EF-D-SO-DUP03	1	x						
S	03/12/18	0000		x	24A-EF-D-SO-DUP04	1	x						
Airbill Number: 424405058452													
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* _3_ Days <input type="checkbox"/> Standard (per contract/quote)													
Relinquished by: (Signature) <i>Kayla Quinter</i>		Date/Time: 3/12/18 1600		Received by: (Signature) <i>FED EX</i>		Date/Time: 3/12/18 1600		Notes:					
Relinquished by: (Signature) <i>FedEx</i>		Date/Time: 3/13/18 10:10		Received by: (Signature) <i>Tiffany J...</i>		Date/Time: 3/13/18 10:00							
COC 03122018B													

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * - Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218031317			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274613	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 6 - 3 BD Task8 Igloo Drains	Receive Date(s) 03/13/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4244-0505-8452		2.0				
NOTES						

Revision 1.6

Page 1 of 1



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC

7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 08/26/2019

GCAL Report 218040309



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To	Additional Recipients
Emily McRee Zapata Incorporated 6302 Fairview Rd Suite 600 Charlotte, NC 28210	NONE





Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218040309



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Case Narrative

Client: Zapata Incorporated **Report:** 218040309

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

METALS

In the EPA 6020B analysis for prep batch 632535, the MS/MSD recoveries and RPD are not applicable for Lead because the sample concentration is greater than four times the spike concentration.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21804030901	24A977-EFR-D-SO2	Solid	03/29/2018 09:45	04/03/2018 09:44
21804030902	24A976-EFR-D-SO2	Solid	03/29/2018 10:15	04/03/2018 09:44
21804030903	24A969-EFL-D-SO2	Solid	03/29/2018 10:45	04/03/2018 09:44
21804030904	24A955-EFR-D-SO2	Solid	03/29/2018 11:15	04/03/2018 09:44
21804030905	24A955-EFL-D-SO2	Solid	03/29/2018 11:20	04/03/2018 09:44
21804030906	24A941-EFR-D-SO2	Solid	03/29/2018 11:50	04/03/2018 09:44
21804030907	24A943-EFR-D-SO2	Solid	03/29/2018 12:10	04/03/2018 09:44
21804030908	24A944-EFR-D-SO2	Solid	03/29/2018 12:25	04/03/2018 09:44
21804030909	24A948-EFL-D-SO2	Solid	03/29/2018 12:40	04/03/2018 09:44
21804030910	24A951-EFR-D-SO2	Solid	03/29/2018 13:05	04/03/2018 09:44
21804030911	24A926-EFL-D-SO2	Solid	03/29/2018 13:35	04/03/2018 09:44
21804030912	24A923-EFR-D-SO2	Solid	03/29/2018 14:00	04/03/2018 09:44
21804030913	24A922-EFR-D-SO2	Solid	03/29/2018 14:40	04/03/2018 09:44
21804030914	24A920-EFL-D-SO2	Solid	03/29/2018 14:50	04/03/2018 09:44
21804030915	24A929-EFL-D-SO2	Solid	03/29/2018 15:30	04/03/2018 09:44
21804030916	24A918-EFR-D-SO2	Solid	03/29/2018 15:55	04/03/2018 09:44



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21804030901	24A977-EFR-D-SO2	S	EPA 6020A
21804030901	24A977-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030901	24A977-EFR-D-SO2	S	EPA 7471B
21804030901	24A977-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030901	24A977-EFR-D-SO2	S	Dry Weight/Percent Moisture
21804030902	24A976-EFR-D-SO2	S	EPA 6020A
21804030902	24A976-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030902	24A976-EFR-D-SO2	S	EPA 7471B
21804030902	24A976-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030902	24A976-EFR-D-SO2	S	Dry Weight/Percent Moisture
21804030903	24A969-EFL-D-SO2	S	EPA 6020A
21804030903	24A969-EFL-D-SO2	S	EPA 6020 Solid Prep
21804030903	24A969-EFL-D-SO2	S	EPA 7471B
21804030903	24A969-EFL-D-SO2	S	EPA 7471B Solid Prep
21804030903	24A969-EFL-D-SO2	S	Dry Weight/Percent Moisture
21804030904	24A955-EFR-D-SO2	S	EPA 6020A
21804030904	24A955-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030904	24A955-EFR-D-SO2	S	EPA 7471B
21804030904	24A955-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030904	24A955-EFR-D-SO2	S	Dry Weight/Percent Moisture
21804030905	24A955-EFL-D-SO2	S	EPA 6020A
21804030905	24A955-EFL-D-SO2	S	EPA 6020 Solid Prep
21804030905	24A955-EFL-D-SO2	S	EPA 7471B
21804030905	24A955-EFL-D-SO2	S	EPA 7471B Solid Prep
21804030905	24A955-EFL-D-SO2	S	Dry Weight/Percent Moisture
21804030906	24A941-EFR-D-SO2	S	EPA 6020A
21804030906	24A941-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030906	24A941-EFR-D-SO2	S	EPA 7471B
21804030906	24A941-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030906	24A941-EFR-D-SO2	S	Dry Weight/Percent Moisture
21804030907	24A943-EFR-D-SO2	S	EPA 6020A
21804030907	24A943-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030907	24A943-EFR-D-SO2	S	EPA 7471B
21804030907	24A943-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030907	24A943-EFR-D-SO2	S	Dry Weight/Percent Moisture
21804030908	24A944-EFR-D-SO2	S	EPA 6020A
21804030908	24A944-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030908	24A944-EFR-D-SO2	S	EPA 7471B
21804030908	24A944-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030908	24A944-EFR-D-SO2	S	Dry Weight/Percent Moisture
21804030909	24A948-EFL-D-SO2	S	EPA 6020A
21804030909	24A948-EFL-D-SO2	S	EPA 6020 Solid Prep
21804030909	24A948-EFL-D-SO2	S	EPA 7471B
21804030909	24A948-EFL-D-SO2	S	EPA 7471B Solid Prep
21804030909	24A948-EFL-D-SO2	S	Dry Weight/Percent Moisture
21804030910	24A951-EFR-D-SO2	S	EPA 6020A
21804030910	24A951-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030910	24A951-EFR-D-SO2	S	EPA 7471B
21804030910	24A951-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030910	24A951-EFR-D-SO2	S	Dry Weight/Percent Moisture



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary (Continued)

GCAL ID	Client ID	Matrix	Procedure
21804030911	24A926-EFL-D-SO2	S	EPA 6020A
21804030911	24A926-EFL-D-SO2	S	EPA 6020 Solid Prep
21804030911	24A926-EFL-D-SO2	S	EPA 7471B
21804030911	24A926-EFL-D-SO2	S	EPA 7471B Solid Prep
21804030911	24A926-EFL-D-SO2	S	Dry Weight/Percent Moisture
21804030912	24A923-EFR-D-SO2	S	EPA 6020A
21804030912	24A923-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030912	24A923-EFR-D-SO2	S	EPA 7471B
21804030912	24A923-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030912	24A923-EFR-D-SO2	S	Dry Weight/Percent Moisture
21804030913	24A922-EFR-D-SO2	S	EPA 6020A
21804030913	24A922-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030913	24A922-EFR-D-SO2	S	EPA 7471B
21804030913	24A922-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030913	24A922-EFR-D-SO2	S	Dry Weight/Percent Moisture
21804030914	24A920-EFL-D-SO2	S	EPA 6020A
21804030914	24A920-EFL-D-SO2	S	EPA 6020 Solid Prep
21804030914	24A920-EFL-D-SO2	S	EPA 7471B
21804030914	24A920-EFL-D-SO2	S	EPA 7471B Solid Prep
21804030914	24A920-EFL-D-SO2	S	Dry Weight/Percent Moisture
21804030915	24A929-EFL-D-SO2	S	EPA 6020A
21804030915	24A929-EFL-D-SO2	S	EPA 6020 Solid Prep
21804030915	24A929-EFL-D-SO2	S	EPA 7471B
21804030915	24A929-EFL-D-SO2	S	EPA 7471B Solid Prep
21804030915	24A929-EFL-D-SO2	S	Dry Weight/Percent Moisture
21804030916	24A918-EFR-D-SO2	S	EPA 6020A
21804030916	24A918-EFR-D-SO2	S	EPA 6020 Solid Prep
21804030916	24A918-EFR-D-SO2	S	EPA 7471B
21804030916	24A918-EFR-D-SO2	S	EPA 7471B Solid Prep
21804030916	24A918-EFR-D-SO2	S	Dry Weight/Percent Moisture



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A977-EFR-D-SO2	Collect Date	03/29/2018 09:45	GCAL ID	21804030901
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.58	0.13	0.26	0.52	mg/kg
7439-92-1	Lead	275	0.13	0.26	0.52	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0086J	0.0060	0.015	0.015	mg/kg

24A976-EFR-D-SO2	Collect Date	03/29/2018 10:15	GCAL ID	21804030902
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.20	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	12.7	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.017	0.0053	0.013	0.013	mg/kg

24A969-EFL-D-SO2	Collect Date	03/29/2018 10:45	GCAL ID	21804030903
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.46	0.12	0.24	0.47	mg/kg
7439-92-1	Lead	16.3	0.12	0.24	0.47	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A969-EFL-D-SO2	Collect Date	03/29/2018 10:45	GCAL ID	21804030903
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0053	0.013	0.013	mg/kg

24A955-EFR-D-SO2	Collect Date	03/29/2018 11:15	GCAL ID	21804030904
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.53	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	22.6	0.11	0.23	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.026	0.0051	0.013	0.013	mg/kg

24A955-EFL-D-SO2	Collect Date	03/29/2018 11:20	GCAL ID	21804030905
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.64	0.12	0.23	0.46	mg/kg
7439-92-1	Lead	591	0.12	0.23	0.46	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.026	0.0053	0.013	0.013	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A941-EFR-D-SO2	Collect Date	03/29/2018 11:50	GCAL ID	21804030906
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.79	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	15.3	0.11	0.23	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.042	0.0055	0.014	0.014	mg/kg

24A943-EFR-D-SO2	Collect Date	03/29/2018 12:10	GCAL ID	21804030907
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.55	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	18.0	0.11	0.23	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.045	0.0051	0.013	0.013	mg/kg

24A944-EFR-D-SO2	Collect Date	03/29/2018 12:25	GCAL ID	21804030908
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.03	0.12	0.23	0.46	mg/kg
7439-92-1	Lead	15.9	0.12	0.23	0.46	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A944-EFR-D-SO2	Collect Date	03/29/2018 12:25	GCAL ID	21804030908
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.028	0.0046	0.012	0.012	mg/kg

24A948-EFL-D-SO2	Collect Date	03/29/2018 12:40	GCAL ID	21804030909
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.26	0.14	0.28	0.56	mg/kg
7439-92-1	Lead	23.8	0.14	0.28	0.56	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.046	0.0066	0.016	0.016	mg/kg

24A951-EFR-D-SO2	Collect Date	03/29/2018 13:05	GCAL ID	21804030910
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.76	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	10.8	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.015	0.0050	0.012	0.012	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A926-EFL-D-SO2	Collect Date	03/29/2018 13:35	GCAL ID	21804030911
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.52	0.11	0.23	0.46	mg/kg
7439-92-1	Lead	16.2	0.11	0.23	0.46	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.027	0.0055	0.014	0.014	mg/kg

24A923-EFR-D-SO2	Collect Date	03/29/2018 14:00	GCAL ID	21804030912
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.51	0.10	0.21	0.42	mg/kg
7439-92-1	Lead	12.7	0.10	0.21	0.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.014	0.0047	0.012	0.012	mg/kg

24A922-EFR-D-SO2	Collect Date	03/29/2018 14:40	GCAL ID	21804030913
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	5.02	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	18.7	0.11	0.22	0.45	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A922-EFR-D-SO2	Collect Date	03/29/2018 14:40	GCAL ID	21804030913
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.060	0.0051	0.013	0.013	mg/kg

24A920-EFL-D-SO2	Collect Date	03/29/2018 14:50	GCAL ID	21804030914
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.99	0.12	0.24	0.48	mg/kg
7439-92-1	Lead	14.5	0.12	0.24	0.48	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.044	0.0058	0.015	0.015	mg/kg

24A929-EFL-D-SO2	Collect Date	03/29/2018 15:30	GCAL ID	21804030915
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.72	0.12	0.24	0.47	mg/kg
7439-92-1	Lead	14.3	0.12	0.24	0.47	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0052	0.013	0.013	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A918-EFR-D-SO2	Collect Date	03/29/2018 15:55	GCAL ID	21804030916
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.40	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	15.7	0.11	0.22	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.023	0.0053	0.013	0.013	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A977-EFR-D-SO2	Collect Date	03/29/2018 09:45	GCAL ID	21804030901
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 18:39	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	1.58	0.13	0.26	0.52	mg/kg
7439-92-1	Lead	275	0.13	0.26	0.52	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 11:36	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.0086J	0.0060	0.015	0.015	mg/kg

24A976-EFR-D-SO2	Collect Date	03/29/2018 10:15	GCAL ID	21804030902
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 18:42	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.20	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	12.7	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 11:39	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.017	0.0053	0.013	0.013	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A969-EFL-D-SO2	Collect Date	03/29/2018 10:45	GCAL ID	21804030903
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 18:46	AWG	632747
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.46	0.12	0.24	0.47	mg/kg
7439-92-1	Lead	16.3	0.12	0.24	0.47	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 11:42	AWG	632565
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0053	0.013	0.013	mg/kg

24A955-EFR-D-SO2	Collect Date	03/29/2018 11:15	GCAL ID	21804030904
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 18:50	AWG	632747
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.53	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	22.6	0.11	0.23	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 11:44	AWG	632565
CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.026	0.0051	0.013	0.013	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A955-EFL-D-SO2	Collect Date	03/29/2018 11:20	GCAL ID	21804030905
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 18:54	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.64	0.12	0.23	0.46	mg/kg
7439-92-1	Lead	591	0.12	0.23	0.46	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 11:50	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.026	0.0053	0.013	0.013	mg/kg

24A941-EFR-D-SO2	Collect Date	03/29/2018 11:50	GCAL ID	21804030906
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 18:58	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.79	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	15.3	0.11	0.23	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 11:55	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.042	0.0055	0.014	0.014	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A943-EFR-D-SO2	Collect Date	03/29/2018 12:10	GCAL ID	21804030907
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:01	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.55	0.11	0.23	0.45	mg/kg
7439-92-1	Lead	18.0	0.11	0.23	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 11:57	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.045	0.0051	0.013	0.013	mg/kg

24A944-EFR-D-SO2	Collect Date	03/29/2018 12:25	GCAL ID	21804030908
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:05	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.03	0.12	0.23	0.46	mg/kg
7439-92-1	Lead	15.9	0.12	0.23	0.46	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 11:58	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.028	0.0046	0.012	0.012	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A948-EFL-D-SO2	Collect Date	03/29/2018 12:40	GCAL ID	21804030909
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:36	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.26	0.14	0.28	0.56	mg/kg
7439-92-1	Lead	23.8	0.14	0.28	0.56	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 12:07	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.046	0.0066	0.016	0.016	mg/kg

24A951-EFR-D-SO2	Collect Date	03/29/2018 13:05	GCAL ID	21804030910
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:40	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	2.76	0.11	0.22	0.44	mg/kg
7439-92-1	Lead	10.8	0.11	0.22	0.44	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 12:09	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.015	0.0050	0.012	0.012	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A926-EFL-D-SO2	Collect Date	03/29/2018 13:35	GCAL ID	21804030911
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:43	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.52	0.11	0.23	0.46	mg/kg
7439-92-1	Lead	16.2	0.11	0.23	0.46	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 12:18	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.027	0.0055	0.014	0.014	mg/kg

24A923-EFR-D-SO2	Collect Date	03/29/2018 14:00	GCAL ID	21804030912
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:47	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.51	0.10	0.21	0.42	mg/kg
7439-92-1	Lead	12.7	0.10	0.21	0.42	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 12:20	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.014	0.0047	0.012	0.012	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A922-EFR-D-SO2	Collect Date	03/29/2018 14:40	GCAL ID	21804030913
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:51	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	5.02	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	18.7	0.11	0.22	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 12:41	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.060	0.0051	0.013	0.013	mg/kg

24A920-EFL-D-SO2	Collect Date	03/29/2018 14:50	GCAL ID	21804030914
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:55	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	4.99	0.12	0.24	0.48	mg/kg
7439-92-1	Lead	14.5	0.12	0.24	0.48	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 12:43	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.044	0.0058	0.015	0.015	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A929-EFL-D-SO2	Collect Date	03/29/2018 15:30	GCAL ID	21804030915
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 19:59	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.72	0.12	0.24	0.47	mg/kg
7439-92-1	Lead	14.3	0.12	0.24	0.47	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 12:53	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.034	0.0052	0.013	0.013	mg/kg

24A918-EFR-D-SO2	Collect Date	03/29/2018 15:55	GCAL ID	21804030916
	Receive Date	04/03/2018 09:44	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/04/2018 10:40	632535	EPA 3050B	10	04/05/2018 20:02	AWG	632747

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.40	0.11	0.22	0.45	mg/kg
7439-92-1	Lead	15.7	0.11	0.22	0.45	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/03/2018 17:10	632536	EPA 7471B	1	04/04/2018 12:56	AWG	632565

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.023	0.0053	0.013	0.013	mg/kg



Report#: 218040309

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 632565	Client ID GCAL ID	MB632536 1792499	LCS632536 1792500				
Prep Batch 632536	Sample Type Prep Date	MB 04/03/2018 17:10	LCS 04/03/2018 17:10				
Prep Method EPA 7471B	Analysis Date Matrix	04/04/2018 11:33 Solid	04/04/2018 11:35 Solid				
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	0.010U	0.010	0.25	0.23	91	80 - 124

Analytical Batch 632565	Client ID GCAL ID	24A944-EFR-D-SO2 21804030908	1792480MS 1792501		1792480MSD 1792502							
Prep Batch 632536	Sample Type Prep Date	SAMPLE 04/03/2018 17:10	MS 04/03/2018 17:10		MSD 04/03/2018 17:10							
Prep Method EPA 7471B	Analysis Date Matrix	04/04/2018 11:58 Solid	04/04/2018 12:00 Solid		04/04/2018 12:05 Solid							
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Mercury	7439-97-6	0.024	0.012	0.25	0.26	94	80 - 124	0.25	0.27	97	3	30

Analytical Batch 632747	Client ID GCAL ID	MB632535 1792495	LCS632535 1792496				
Prep Batch 632535	Sample Type Prep Date	MB 04/04/2018 10:40	LCS 04/04/2018 10:40				
Prep Method EPA 3050B	Analysis Date Matrix	04/05/2018 18:31 Solid	04/05/2018 18:35 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.020U	0.020	2.00	1.97	99	82 - 118
Lead	7439-92-1	0.020U	0.020	2.00	1.98	99	84 - 118

Analytical Batch 632747	Client ID GCAL ID	24A944-EFR-D-SO2 21804030908	1792480MS 1792497		1792480MSD 1792498							
Prep Batch 632535	Sample Type Prep Date	SAMPLE 04/04/2018 10:40	MS 04/04/2018 10:40		MSD 04/04/2018 10:40							
Prep Method EPA 3050B	Analysis Date Matrix	04/05/2018 19:05 Solid	04/05/2018 19:09 Solid		04/05/2018 19:13 Solid							
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Arsenic	7440-38-2	4.03	0.23	2.32	6.32	99	82 - 118	2.32	6.34	100	0	30
Lead	7439-92-1	15.9	0.23	2.32	19.3	148*	84 - 118	2.32	18.6	123*	3	30



CHAIN OF CUSTODY RECORD

Client ID: 4857 - Zapata Incorporated
 SDG: 218040309
 PM: AEC

Report To:				Bill To:				Analytical Requests & Method				Custody Seal:		
Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Client: ZAPATA Address: 6302 Fairview Road Suite 600 Contact: Emily McRee Phone: 803-270-0141 Email: emcree@zapatainc.com				Pb, Hg, & As (SW846 6010C or 6020B & 7470)				Used: <input type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		
P.O. Number: R20179-0017				Project Name/Number: FWDA Parcel 21, SWMU 1 and Parcel 24								Temperature: 0.5EJ9 47C/10V		<input type="checkbox"/> Dissolved Analysis Requested
Sampled By: Katie Stout												<input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab Filtered		
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers								GCAL ID
S	03/29/18	945		x	24A977-EFR-D-SO2	1	x							-1
S	03/29/18	1015		x	24A976-EFR-D-SO2	1	x							-2
S	03/29/18	1045		x	24A969-EFL-D-SO2	1	x							-3
S	03/29/18	1115		x	24A955-EFR-D-SO2	1	x							-4
S	03/29/18	1120		x	24A955-EFL-D-SO2	1	x							-5
S	03/29/18	1150		x	24A941-EFR-D-SO2	1	x							-6
S	03/29/18	1210		x	24A943-EFR-D-SO2	1	x							-7
S	03/29/18	1225		x	24A944-EFR-D-SO2	1	x							-8
S	03/29/18	1240		x	24A948-EFL-D-SO2	1	x							-9
S	03/29/18	1305		x	24A951-EFR-D-SO2	1	x							-10
S	03/29/18	1335		x	24A926-EFL-D-SO2	1	x							-11
S	03/29/18	1400		x	24A923-EFR-D-SO2	1	x							-12
S	03/29/18	1440		x	24A922-EFR-D-SO2	1	x							-13
S	03/29/18	1450		x	24A920-EFL-D-SO2	1	x							-14
S	03/29/18	1530		x	24A929-EFL-D-SO2	1	x							-15
S	03/29/18	1555		x	24A918-EFR-D-SO2	1	x							-16
Airbill Number: 424405058463														
Turn Around Time(Business Days): <input checked="" type="checkbox"/> RUSH* __3__ Days <input type="checkbox"/> Standard (per contract/quote)														
Relinquished by: (Signature) <i>Katie Stout</i>		Date/Time: 4/2/18		Received by: (Signature) <i>[Signature]</i>		Date/Time:		Notes:						
Relinquished by: (Signature) <i>FedEx</i>		Date/Time: 4-3-18		Received by: (Signature) <i>[Signature]</i>		Date/Time: 4-3-18 0944								
Relinquished by: (Signature)		Date/Time:		Received by: (Signature)		Date/Time:		COC 04022018A						

¹Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

SAMPLE DELIVERY GROUP 218040309			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274613	Received By Reese, Sean M		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 6 - 3 BD Task8 Igloo Drains	Receive Date(s) 04/03/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill 4244 0505 8463	Thermometer ID: E29	Temp °C 0.5	None	None		
NOTES						

Revision 1.6

Page 1 of 1



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC

7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 08/26/2019

GCAL Report 218041405



Project FWDA Parcel21,SWMU1 & Parcel24

Deliver To	Additional Recipients
Emily McRee Zapata Incorporated 6302 Fairview Rd Suite 600 Charlotte, NC 28210	NONE





Report#: 218041405

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 218041405



Report#: 218041405

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 218041405

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Case Narrative

Client: Zapata Incorporated **Report:** 218041405

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

MISCELLANEOUS

This report was completed in accordance with DOD QSM 5.0 as specified in the contract.



Report#: 218041405

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Q Flag Summary

NO Q FLAGS FOR THIS WORKORDER



Report#: 218041405

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21804140501	24A955-EFL-D-SO3	Solid	04/12/2018 09:00	04/14/2018 11:10



Report#: 218041405

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Test Summary

GCAL ID	Client ID	Matrix	Procedure
21804140501	24A955-EFL-D-SO3	S	EPA 6020A
21804140501	24A955-EFL-D-SO3	S	EPA 6020 Solid Prep
21804140501	24A955-EFL-D-SO3	S	EPA 7471B
21804140501	24A955-EFL-D-SO3	S	EPA 7471B Solid Prep
21804140501	24A955-EFL-D-SO3	S	Dry Weight/Percent Moisture



Report#: 218041405

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Manual Integrations

Manual Integrations for LC and IC (if performed) are documented in the raw data.
No other manual integrations were performed by GCAL.



Report#: 218041405

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Summary of Compounds Detected

24A955-EFL-D-SO3	Collect Date	04/12/2018 09:00	GCAL ID	21804140501
	Receive Date	04/14/2018 11:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.42	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	18.0	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.031	0.0049	0.012	0.012	mg/kg



Report#: 218041405

Project ID: FWDA Parcel21, SWMU1 & Parcel24

Report Date: 08/26/2019

Sample Results

24A955-EFL-D-SO3	Collect Date	04/12/2018 09:00	GCAL ID	21804140501
	Receive Date	04/14/2018 11:10	Matrix	Solid

EPA 6020B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/16/2018 10:20	633351	EPA 3050B	10	04/17/2018 20:50	AWG	633612

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7440-38-2	Arsenic	3.42	0.11	0.21	0.43	mg/kg
7439-92-1	Lead	18.0	0.11	0.21	0.43	mg/kg

EPA 7471B *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
04/16/2018 15:25	633352	EPA 7471B	1	04/17/2018 16:41	AWG	633609

CAS#	Parameter	Result	DL	LOD	LOQ	Units
7439-97-6	Mercury	0.031	0.0049	0.012	0.012	mg/kg



Report#: 218041405

Project ID: FWDA Parcel21,SWMU1 & Parcel24

Report Date: 08/26/2019

Inorganics QC Summary

Analytical Batch 633609	Client ID GCAL ID	MB63352 1797118	LCS633352 1797119				
Prep Batch 633352	Sample Type Prep Date	MB 04/16/2018 15:25	LCS 04/16/2018 15:25				
Prep Method EPA 7471B	Analysis Date Matrix	04/17/2018 16:18 Solid	04/17/2018 16:20 Solid				
EPA 7471B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	0.010U	0.010	0.25	0.21	83	80 - 124

Analytical Batch 633612	Client ID GCAL ID	MB63351 1797116	LCS633351 1797117				
Prep Batch 633351	Sample Type Prep Date	MB 04/16/2018 10:20	LCS 04/16/2018 10:20				
Prep Method EPA 3050B	Analysis Date Matrix	04/17/2018 20:37 Solid	04/17/2018 20:41 Solid				
EPA 6020B		Units Result	mg/kg LOD	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.020U	0.020	2.00	1.95	97	82 - 118
Lead	7439-92-1	0.020U	0.020	2.00	1.93	96	84 - 118

SAMPLE DELIVERY GROUP 218041405			CHECKLIST		YES	NO
Client PM AEC 4857 - Zapata Incorporated	Transport Method FEDEX		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 274613	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 6 - 3 BD Task8 Igloo Drains	Receive Date(s) 04/14/18		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E29	Temp °C	None	None		
4343-2414-3787		0.6				
NOTES						

Revision 1.6

Page 1 of 1