

# Final Igloo Exteriors and Revetments RCRA Facility Investigation Sampling Work Plan

Fort Wingate Depot Activity  
McKinley County, New Mexico

July, 2023

*Prepared for:*



Department of the Army  
Office of the Deputy Chief of Staff, G-9  
Army Environmental Division – BRAC Operations Branch  
600 Army Pentagon  
Washington, DC 20310-0600

*Prepared by:*



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**DOCUMENT CERTIFICATION**

**Final Igloo Exteriors and Revetments RCRA Facility Investigation Sampling Work Plan  
Fort Wingate Depot Activity, McKinley County, NM**

**40 CFR 270.11**

**July, 2023**

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*George H. Cushman IV*

---

Mr. George H. Cushman IV  
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DCS G-9, Environmental Division



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BIA- Zuni	Bureau of Indian Affairs – Zuni Representative
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BRAC OPS	(U. S. Army) Base Realignment and Operations Branch
USEPA	United States Environmental Protection Agency, Region 6
ERDC	Engineer Research and Development Center
FWDA BEC	Fort Wingate Depot Activity Base Environmental Coordinator
NM	New Mexico
NMED HWB	New Mexico Environment Department Hazardous Waste Bureau
NN	Navajo Nation
OH	Ohio
Zuni	Zuni Tribe
USACE	U.S. Army Corps of Engineers

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## List of Acronyms

95UCL	95% upper confidence limit
°C	degrees Celsius
ACM	Asbestos Containing Material
AOC	Area of concern
APP	Accident prevention plan
AUF	Area use factor
BAF	Bioaccumulation factor
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure
CBU	Cluster bomb unit
CEC	Cation exchange capacity
COC	Chemical of concern
CoC	Chain of custody
COPC	Chemical of potential concern
COPEC	Chemicals of potential ecological concern
CSM	Conceptual Site Model
DL	Detection limit
DoD	Department of Defense
DOI	Department of Interior
DU	Decision unit
EB	Equipment blank
EC	Exposure Concentration
ECP	Environmental Condition of Property
ELAP	Environmental Laboratory Accreditation Program
EPC	Exposure point concentration
EU	Exposure unit
FWDA	Fort Wingate Depot Activity
GPS	Global positioning system
HASP	Health and safety plan
HMX	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HI	Hazard index
HQ	Hazard quotient
ID	Identification
IDW	Investigation derived waste
ISM	Incremental sampling methodology
ITRC	Interstate Technology Regulatory Council
kg	kilograms



LBP	Lead-based paint
LCS	Laboratory control sample
LOAEL	Lowest observed adverse effects level
LOD	Limit of detection
LOQ	Limit of quantification
mg/kg	milligram per kilogram
MI	Multiple increment
MS	Matrix spike
MSD	Matrix spike duplicate
MQO	Measurement quality objectives
NMED	New Mexico Environment Department
NOAEL	No observed adverse effects level
OB/OD	Open Burn/Open Detonation
PAL	Project action limit
PARCC	Precision, accuracy, representativeness, completeness, and comparability
PCB	Polychlorinated biphenyl
PETN	Pentaerythritol Tetranitrate
PPE	Personal protective equipment
PUF	Plant uptake factor
QA	Quality assurance
QC	Quality control
QSM	Quality Systems Manual
RAG	Risk assessment guidance
RCRA	Resource Conservation and Recovery Act
RDX	Hexahydro-1,3,5-trinitro-1,3,5-triazine
RFI	RCRA Facility Investigation
RSD	Relative standard deviation
RSL	Regional screening level
RSLERA	Refined screening level ecological risk assessment
SLERA	Screening level ecological risk assessment
SLHQ	Screening level hazard quotient
SSL	Soil screening level
SSO	Site safety officer
SOP	Standard operating procedure
SU	Sampling unit
SWMU	Solid waste management unit
Tetryl	Methyl-2,4,6-trinitrophenylnitramine
TNT	2,4,6-Trinitrotoluene
TOC	Total organic carbon
TRT	Target risk thresholds

TRV	Toxicity reference value
UCL	Upper confidence level
USACE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USMDA	U.S. Missile Defense Agency
UXO	Unexploded ordnance
V.1	Volume 1
V.2	Volume 2
WP	Work plan
XRF	X-ray fluorescence

## Executive Summary

### ES 1 Introduction

This Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan (WP) describes investigation activities to be performed at the exteriors of earthen covered magazines (hereafter referred to as “igloos”) and revetments at Fort Wingate Depot Activity (FWDA), New Mexico. This work plan has been prepared for submission to the New Mexico Environment Department – Hazardous Waste Bureau (NMED-HWB), in accordance with the requirements of the FWDA RCRA Permit (Section VII.H.1.a of RCRA Permit (NM6213820974)) for the FWDA (NMED 2015).

### ES 2 Purpose

The purpose of this work plan is to determine the nature and extent of potential contamination at the igloo exteriors and revetments, and to evaluate any potential risk associated with this contamination. The results of this effort will be used as the basis for determining whether additional remedial actions may be necessary at igloo exteriors and revetments, or whether no further action is warranted.

### ES 3 Historical Data Review

To select six (6) igloos and six (6) revetments for further study, historical discrete surficial soil data for site-related chemicals of concern (COCs) under the igloo drains or within the bermed portion of the revetments in igloo blocks within Parcels 6, 9, 16, and 24 were evaluated. This evaluation allowed selection of the locations of the greatest exceedances of NMED residential soil screening levels (SSLs)/ecological screening levels (ESLs), or highest concentrations if no exceedances were present.

The evaluation of historical discrete sampling results from Parcels 6, 9, 16 and 24 are summarized in Section 2.3. This evaluation resulted in the following six igloos being selected for evaluation: K-1545, A-979, A-933, A-946, A-929 and A-939. Additionally, the following six revetments were selected for evaluation: Y-K-1536, Y-B-1013, Y-B-1035, Y-K-1530, Y-K-1539 and Y-A-962.

### ES 4 Approach

The work plan approach integrates the technical components discussed between NMED and Army (Appendix B), as well as operational history and problem formulation, by identifying COCs based on historical data collection from under the igloo drainpipes, fate and transport mechanisms, and exposure pathways to appropriate human and ecological receptors, to produce a site-specific conceptual site model (CSM). This CSM forms the basis for the scope of work and sampling strategy. Each of the steps to developing a site-specific CSM are discussed in Section 3.

Based on this approach, surficial soil samples will be analyzed for RCRA 8 metals and explosives. RCRA 8 metals include arsenic, barium, cadmium, chromium (total), lead, mercury, selenium, and silver. The

explosives COCs are 1,3,5-trinitrobenzene, 1,3 dinitrobenzene, 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2,4/2,6 dinitrotoluene mixture, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, PETN, RDX, nitrobenzene, nitroglycerin, m-nitrotoluene, o-nitrotoluene, p-nitrotoluene, and Teteryl. The medium of concern in the work plan is surficial soil.

Site-specific reasonably anticipated current or future land use for human receptors at both the igloos and revetments is for activities associated with commercial storage of materials. Consequently, the only human receptor considered in the site-specific CSM is the commercial/industrial worker. However, risk for this receptor will be screened using NMED residential standards, as per NMED request (NMED 2022).

The ecological evaluation was also refined to account for site-specific exposures, such as: (1) site-specific ecological receptors, (2) evaluation of each receptor group's home range to determine if the site area comprised >10% of the receptors home range, and (3) calculating Area Use Factor (AUF) using the study areas for the igloos and revetments. These calculations (Table 3-2) show that only the deer mouse needs to be evaluated at the revetments. In general, plants are not evaluated using home ranges or acreages, and no acreage has been specified as a threshold in NMED guidance. However, to be conservatively protective, evaluations will also be conducted on plants for both igloos and revetments.

To evaluate both nature and extent, and exposure, each decision unit (DU)/sampling unit (SU) will be one incremental sampling methodology (ISM) sample taken in triplicate. The DUs are assigned to nature and extent sampling because a decision may be made based upon a concentration term derived from that sampling area. These DUs become SUs for the risk evaluation because the SUs are components of a larger exposure unit (EU) and for risk purposes; decisions will only be made using EU results (Figures 3-2, 3-3, 3-5, and 3-6).

All DU samples will consist of thirty (30) increments and will be collected in triplicate following the systematic grid sampling, as outlined by Interstate Technology Regulatory Council (ITRC) (ITRC 2012). Thirty (30) increments of surface soil of approximately the same weight will be collected within each DU. To collect triplicate samples from each DU, two additional replicate ISM samples will be collected to ensure reliable estimates of the mean concentration within the DU can be calculated.

#### ES 5 Nature and Extent

To define the nature and extent of contaminants, the 95% upper confidence level (95UCL) of the data will be calculated for each soil DU based upon the results of the triplicate samples collected. The calculated 95UCL for each DU will be compared to 95UCLs from other DUs at the igloo or revetment to discern if a past release has occurred and what, if any, spatial patterns from the release may be present. Nature and extent is further discussed in Section 7.

#### ES 6 Risk Assessment Evaluation Approach

The risk screening evaluation will follow the steps below and is discussed in detail in Section 8:

- 1) If no analytes are detected in any SU triplicate analyses, no risk evaluation will be performed since all limits of quantitation (LOQs) are less than the project action limits (PALs).
- 2) If there are detections, the Chebyshev 95UCL will be calculated for each SU and an area weighted exposure point concentration (EPC) average will be calculated for the EU. The area weighted EPC average will be screened against the PAL for each COC.
- 3) If the PAL is not exceeded, risk screening is complete and cumulative risk will be calculated for human health and ecological risk using the concentrations of the detected COCs.
- 4) If the PAL is exceeded, the risk evaluation will proceed to comparing the 95UCL(s) to the SSL(s)/ESL(s) for individual human (i.e., residential, cancer and noncancer) and ecological (i.e., plants and deer mouse, as applicable) receptors.
- 5) If the 95UCL does not exceed the individual receptor SSL(s)/ESL(s), risk screening is complete for that analyte and cumulative risk will be calculated for human health and ecological risk using the detected COCs.
- 6) If the 95UCL exceeds the individual receptor SSL(s)/ESL(s), risk is noted for that analyte and receptor, and refinements to the risk screening prior to calculating cumulative risk will be considered.

## ES 7 Summary

Using the results from this sampling effort and following the assessment of nature and extent and risk, the Army proposes to apply the results using the following approach for the remaining, unsampled igloos and revetments at FWDA:

- a) **IF** all ISM sample results are below NMED residential and ecological soil screening values, **THEN** no further evaluation of igloo and revetments will be required at FWDA.
- b) **IF** ISM sample results exceed NMED residential and/or ecological soil screening values and no significant risk is found for human and/or ecological receptors after risk refinements, **THEN** no further evaluation of igloo and revetments will be required at FWDA.
- c) **IF** ISM sample results exceed NMED residential and/or ecological soil screening values and risk is found for human and/or ecological receptors after risk refinements, **THEN** the ARMY will propose further evaluation of igloo exteriors and revetments at FWDA.

## 1.0 Introduction

The purpose of this study is to complete the evaluation of the igloo exteriors and revetments at Fort Wingate Depot Activity (FWDA), Gallup, NM to determine whether additional remedial actions may be necessary at igloo exteriors and revetments, or whether no further action is warranted, in compliance with the Resource Conservation and Recovery Act (RCRA) Permit (NMED 2015).

Several hundred igloos and revetments have been previously sampled, resulting in a considerable amount of data (Section 2.3). The Army and NMED have discussed a path forward (Section 2.3) that would utilize the information already collected to design a study that would provide sufficient understanding of potential residual contamination at igloo exteriors and revetments. This understanding will allow for a generalized conclusion for the remaining unsampled igloos and revetments.

The remainder of this section provides the objectives of this RCRA Facility Investigation (RFI) work plan (WP), as well as a brief regulatory status for the installation.

### 1.1 Objectives

The primary objectives of this investigation are:

1. To identify the six (6) igloo exteriors and six (6) revetments with the highest concentrations of site-related chemicals of concern (COCs) from samples taken under the igloo drains or within the bermed portion of the revetments residing in parcels 6, 9, 16 and 24, as determined by analysis of historical pre-remediation discrete surficial soil samples.
2. To sample soil at these locations for RCRA 8 metals and explosives to quantify potential residual COC levels both external to the igloos and within/external to the bermed areas of the revetments.
3. To use these data to determine if a release has occurred, and if so, the nature and extent of this release to determine whether RCRA 8 metals and/or explosives, if detected, are present in quantities that might pose unacceptable risk to site-specific current/future human and ecological receptors.
4. To use these analytical results to develop a generalized site-wide approach for characterizing potential contamination at the remaining, unsampled igloos and revetments at FWDA.

### 1.2 Regulatory Status

The RCRA permit for FWDA was finalized in December 2005 and became effective December 31, 2005. Since the original permit issuance, the FWDA RCRA permit has been revised through NMED modifications issued in 2011, 2014, and 2015 (NMED, 2011; NMED, 2014; and NMED, 2015). The most recent version of the RCRA permit includes the original permit and subsequent modifications (NMED, 2015) and details the requirements of the installation cleanup.

Since the 1980s, numerous investigations within parcels containing igloos and revetments have been completed at FWDA. The following investigation efforts were referenced for data review in preparation for this study:

- P24 RAR, Final Release Assessment Report Parcel 24, Jan 2014
- P6 RFI, Final RCRA Facility Investigation Report Parcel 6, Sept 2012
- P4 RAR, Final Release Assessment Report Parcel 4A, Igloo Block C, Mar 2009
- P22 RFI, Final RCRA Facility Investigation Report Parcel 22 Revision 2, May 2015
- P16 RFI, Final RCRA Facility Investigation Parcel 16, Aug 2013
- RI/FS, Remedial Investigation/Feasibility Study & RCRA Corrective Action Program, 1997
- P22 PIIM, Final Permittee-Initiated Interim Measures Report Parcel 22, Feb 2015
- P6 PIIM, Final Permittee-Initiated Interim Measures Report Parcel 6 AOC 28, 2016
- FWDA, FWDA Historical Data
- P16 PIIM, Final Permittee-Initiated Interim Measures Report Parcel 22, Dec 2017
- P9 IR, Investigation Report, Igloo Block A, Parcel 9, Aug 2018

## 2.0 Background

### 2.1 FWDA Installation Description and Setting

Fort Wingate Depot Activity is located in McKinley County in northwestern New Mexico and originally covered 22,120 acres, approximately 34 square miles (ERM 1997) (Figure 2-1). Initially opened in 1850, the installation was active until 1993 when it was closed as a result of the Defense Authorization Amendments and Base Realignment and Closure Act of 1988. FWDA's historic military mission was to store, ship, and receive material and to dispose of obsolete or deteriorated explosives, ammunition, and ordnance. FWDA served as a storage and supply facility shipping ammunition to supply armies overseas during World War II and the South Vietnam conflict. The installation was placed in reserve status in 1971 until its closure in 1993 (ERM 1997).

#### 2.1.1 Site Conditions

##### 2.1.1.1 Climate

Northwestern New Mexico is characterized by a semiarid continental climate. Most precipitation occurs from May through October. Most of the precipitation occurs as rain or hail in summer thunderstorms, and the remainder results from light winter snow accumulations (Metcalf & Eddy, Inc. [M&E], 1992). Spring and fall droughts characterize the area. Mean annual rainfall for the area ranges between 10 and 16 inches, with the recorded average annual precipitation being 11 inches. Depending on local elevations, mean annual rainfall can fluctuate between eight and 20 inches.

The average seasonal temperatures for the area vary with elevation and topographic features. During winter, daily temperatures fluctuate as much as 50 to 70 degrees Fahrenheit (°F) in a 24-hour period. In summer, daily high temperatures are between 85°F and 95°F (M&E, 1992). Average temperatures in

winter are about 27°F and in summer 70°F, while extreme temperatures are as low as -30°F in winter and as high as 100°F in summer. There are 100 to 150 frost-free days during the year from the middle of May to the middle of October (M&E 1992).

#### *2.1.1.2 Topography*

The elevation of the FWDA ranges from approximately 8,200 feet above mean sea level in the south to 6,660 feet above mean sea level in the north (Figure 2-1). Topographically, the FWDA may be divided into three general areas: 1) the rugged north-to-south trending Nutria Monocline (also known as the Hogback) along the western and the southwestern boundaries; 2) the northern hill slopes of the Zuni Mountains in the southern portion; and 3) the alluvial plains marked by bedrock remnants in the northern portion of the FWDA (Sundance 2016).

Main drainages follow the topography, generally flowing from south to north, and discharge to the South Fork of the Rio Puerco near the northern boundary of the FWDA. However, many tributaries follow the regional trend, flowing from southwest to northeast. Drainages at FWDA are intermittent with flow occurring only during and after heavy rainfall events or during snowmelt. During these events, streams transport sediment to low-lying areas in the northern part of the installation, creating an extensive alluvial deposit among remnants of bedrock (Sundance 2016).

#### *2.1.1.3 Soils*

The soils found on the installation are consistent with those occurring in cool plateau and mountain regions of New Mexico. The major soil types at the FWDA are variants/complexes of sands, loams, clays, and rocks. These soils are relatively thin, and the parent bedrock is either at or near the surface in more than one quarter of the installation (Sundance 2016).

The thickness of these soil types varies widely over the installation, with alluvial accumulations deepest along canyon floors and in the Rio Puerco Valley. Bedrock exposures are common throughout the area. Generally, the soils are loamy or loam/clay mixtures and contain varying amounts of silt, sand, gravel, and rock fragments; all of which are fragile. Wind and water cause extensive soil erosion, especially where vegetative cover is absent (Sundance 2016).

### 2.1.2 Site History and Igloo and Revetment Usage

Conventional munitions (non-nuclear weapons) and explosives were stored at FWDA in earth-covered magazines known as "igloos". Many of the igloos at FWDA were constructed in the early 1940s (ERM, 1993 and 1997). When FWDA's active operations ceased in 1993, munitions and explosives were removed from the storage igloos. In addition to the igloos, revetments or open areas surrounded by earthen berms with one entrance/exit through a break in the berm were constructed during the same time period. The revetments were used for the temporary open-air storage of munitions and explosives.

There are a total 10 groups or blocks of igloos and revetments at FWDA (Igloo Block A, B, C, D, E, F, G, H, J, and K), encompassing over 7,400 acres (approximately 33%) of the total land at FWDA. The 10 igloo blocks contain a total of 732 igloos and 254 revetments (ERM 1993; ERM, 1997). Approximately, 439



igloos (23 of 100 in Block A, 50 of 103 in Block D, and all of Block E, F, G, H, and J) are located within Parcels (2, 9, and 19) that are currently being retained by the U.S. Missile Defense Agency (USMDA). The remaining 293 igloos (77 of 100 in Block A, 53 of 103 in Block D, and all of Block B, C, and K) are being prepared for transfer from the Army to the DOI (Figure 2-2) (DoD 2017a, Appendix A).

The igloos and revetments are named based on the block in which they are located along with a four-digit number system. The revetments have a similar naming convention except contain the letter “Y” at the beginning of each revetment name. Example names are provided below:

- Example Igloo Name for Igloo 1000 in Block A: A-1000
- Example Revetment Name for Revetment 0962 in Igloo Block A: Y-A-0962

The igloos were constructed in 1941 and are windowless concrete domes with earthen cover and one entrance/exit through a steel door. The entrance has a concrete apron for loading and unloading of munitions from transport vehicles. Each igloo interior contains a sloped drainage channel on each side that connect to two drains at the front of the igloo, allowing discharge of material from the interior floor to the exterior of the igloo. These drains discharge to the soil on either side of the concrete apron in front of the igloo. This discharge area is referred to as the apron swales throughout this Work Plan.

The open storage revetments were constructed of compacted earth in 1945 and were for temporary storage of crated munitions when igloo capacity was exceeded. The revetments are located throughout the igloo blocks between the igloos and consist of a central square storage area surrounded by bermed soils with one opening that serves as access. The larger revetments measure 42 feet by 72 feet and the smaller revetments are 34 feet by 64 feet (Sundance 2018).

### 2.1.3 Parcel Descriptions

#### *2.1.3.1 Parcel 6, Area of Concern (AOC) 28, Igloo Block B*

Igloo Block B is located in the southwest portion of Parcel 6 and consists of 100 igloo structures and 55 revetments. Igloo Block B was specifically used to store 8-inch projectiles, propellant charges, and cluster bombs units (CBUs), which were transferred to the igloos after being transported to the site by rail. Bulk explosives or chemical weapons were not stored in Igloo Block B. Munitions were stored in wooden ammunition boxes containing multiple metal containers. A minimum of three protective layers were used for storing munitions components, and extreme caution was used during handling and storage. No specific date was identified for the end of munitions storage in the available historical documents (USGS 2011).

A tenant contractor named TPL, Inc. obtained a facility’s use contract with FWDA in 1994 and continued operations until 2007. TPL, Inc. performed demilitarization of military munitions with an emphasis on resource recovery and reuse. Demilitarization operations ranged from simple mechanical separation of munitions into their components, to chemical processes to further extract reusable materials. For several years, TPL, Inc. was a Large Quantity Generator (NMR00000216) of hazardous wastes consisting of fuses

and fin assemblies (explosives) that were temporarily stored in a less-than-90-day RCRA storage area in Igloo B-1019. TPL, Inc. conducted operations within the AOC 28 area (USGS 2011).

#### *2.1.3.2 Parcel 9, AOC 18, Igloo Block A*

Igloo Block A, containing 100 igloos and 81 revetments, was used to store propellant charges for 8-inch and 155-millimeter (mm) shells, cluster bombs, 2.75-inch and 3.5-inch rocket motors, and 155-mm high explosive (HE) projectiles. A portion of Igloo Block A containing 23 igloos and 10 revetments is in Parcel 9. Munitions were stored at Igloo Block A from 1941 through FWDA closure in 1993 (Sundance 2018).

#### *2.1.3.3 Parcel 16, AOC 41, Igloo Block K*

Igloo Block K was historically referred to as “I” Area but was later renamed K Block. K Block has 27 earth covered igloos 60-feet long and originally covered with two feet of rock and soil. Area K was used to store mines, 155-mm and 8-inch HE projectiles. The stored explosives were containerized. No records were found to indicate that loose powder was ever stored in the Igloo Area or that any of the individual igloos had explosions or releases of explosives to the environment. No information has been found to suggest that other types of hazardous materials were stored in these facilities (Toeroek Associates 2014).

#### *2.1.3.4 Parcel 24, AOC 18, Igloo Block A*

Parcel 24 encompasses approximately 421 acres of this area. Parcel 24 includes most of the Igloo Block A munitions storage area. Igloo Block A is located within an alluvial valley drained by the South Fork of the Puerco River. This area is relatively flat and slopes gently to the north towards the river. Vegetation in this area consists primarily of native grasses, sage brush, and other shrubs. Several smaller drainages also run through Igloo Block A. Igloo Block A is one of several igloo block areas at FWDA previously used for the storage of munitions in the Magazine (Igloo) Area beginning in the early 1940s (USACE SWF 2014).

Figure 2-2 shows the igloos and revetments in the various blocks/parcels/AOCs.

#### *2.1.3.5 Parcel Description Summary*

The descriptions of the parcels under evaluation in this work plan show varied terrain; areas around igloos and revetments could be level or sloped. Given these characteristics, the topography and vegetation characteristics were accounted for in the study design (Section 3).

## 2.2 Historical Data Collection and Review

Section 2.1.3 describe the parcels, AOCs and igloo blocks that provide the historical data used in the selection of igloo and revetment locations. These locations were chosen based upon concentration criteria where the six igloo and six revetment locations with the highest concentrations of RCRA 8 metals and explosives were selected (see Section 2.3). Discrete and composite samples from under the igloo drains were used to select igloo locations (Table 2-1a for RCRA 8 metals and Table 2-2a for explosives). Only multi-increment (MI) samples were used to select revetment locations because these were the only type of data available for revetments (Table 2-1b RCRA 8 metals and Table 2-2b for explosives). All data were used solely for purposes of screening concentration for igloos and revetment location selection (NMED, 2019). Further detail on the selection process is provided in Section 2.3.

### 2.2.1 Parcel 9, AOC 18, Igloo Block A

Sampling at 23 igloos and 10 revetments within Parcel 9, Igloo Block A, was completed in September through December 2008 for explosives by USEPA Method 8330B and RCRA Metals by USEPA Methods 7471 and 6020. Multiple Increment (MI) samples were collected from drainages around the apron at all 23 igloos. Detections of lead ranged from 12.7 mg/kg to 68.3 mg/kg; there were no detections exceeding the NMED residential SSL of 400 mg/kg. None of the explosives constituents were detected above NMED residential SSLs, or, when no NMED SSL was available, above USEPA residential Regional Screening Levels (RSLs). Composite samples were taken at the drains of all 23 igloos. Detections of lead ranged from 72.6 mg/kg to 2,650 mg/kg with fourteen detections over the NMED residential SSL of 400 mg/kg. None of the explosive's constituents were detected above residential standards. In this report, nitroglycerine was determined to be a non-detect in sample A-986 due to the reporting limit being above the screening level, however, by current evaluation practices and in the absence of a Lines-of-Evidence (LOE) evaluation, this would be considered an exceedance of screening criteria. MI samples were collected at all 10 revetments. Detections of lead ranged from 9.9 mg/kg to 16.5 mg/kg; there were no detections of lead exceeding the NMED residential SSL of 400 mg/kg. None of the explosives constituents were detected above NMED residential SSLs or when appropriate, above USEPA residential RSLs (USACE SWF 2018).

After review of the 2012 *Release Assessment Report for Parcel 4A Igloo Block C, Final*, NMED approved the report with direction and required a re-sampling event at any Igloo Block C location where lead was detected at concentrations between 200 and 400 mg/kg. In response to the NMED comments within the Approval with Direction letter dated 22 July 2009, the Army used this same process to re-sample igloos in Igloo Block A within Parcel 9. Of the 23 igloos sampled in Igloo Block A, 19 resulted in concentrations between 200 and 400 mg/kg or above the NMED residential SSL of 400 mg/kg for lead and required re-sampling (USACE SWF 2018).

In October 2010, 38 measurements, one (1) from each drain outfall of the 19 igloos, were analyzed in-situ by x-ray fluorescence (XRF). Of the 38 RCRA metals measurements taken, five measurements exceeded the NMED residential SSL for lead or arsenic. Lead values ranged from non-detect to 504.67 mg/kg at A-983-R (NMED residential SSL = 400 mg/kg). Arsenic exceeded the residential SSL (at the time of 3.9 mg/kg) at that time at one location (A-991-L), with a value of 17.15 mg/kg (USACE SWF 2018).

Eleven laboratory confirmation samples were taken from those measurements in which XRF results were deemed most likely to exceed NMED residential SSLs. Three of the 11 samples (two for lead and one for arsenic) were greater than the NMED residential SSLs. Lead was identified in sample A-986-L at 2,100 mg/kg and in sample A-999-R at 5,200 mg/kg. Arsenic was identified in sample A-999-R at 6.1 mg/kg (USACE SWF 2018).

Based on initial September 2008 data and October 2010 XRF measurements or confirmation sample results that exceeded the NMED residential soil screening criteria for lead and/or arsenic, soil removal under both drains was recommended at the following igloos: A-979, A-980, A-981, A-983, A-986, A-988, A-989, A-992, A-993, A-994, A-996, A-998, A-999, and A-1000 (USACE SWF 2018).

Furthermore, due to an October 2010 XRF measurement/confirmation sample results for lead/arsenic over the NMED residential soil screening criteria, the Army removed soil from the right side of A-987 and the left side of A-991, along with the lead-based paint contaminated drainpipes from each side of all the igloos listed above (USACE SWF 2018).

### 2.2.2 Parcel 16, AOC 41, Igloo Block K

AOC 41 - Igloo Block K contains 27 igloos. Previous sampling activities were conducted at Igloo Block K and COCs, including lead and explosives, were identified in concentrations that exceeded the 2012 NMED residential SSLs or 2012 USEPA residential RSLs at 18 igloo drains. Seventeen samples collected from below drain outfalls in Igloo Block K exceeded the NMED residential SSL for lead of 400 mg/kg. The igloos with exceedances and drain locations (left [L] or right [R]) are as follows: K-1524L; K-1524R; K-1525L; K-1527L; K-1527R; K-1528R; K-1529L; K-1531R; K-1533L; K-1540L; K-1541L; K-1542L; K-1543R; K-1545L; K-1546L; K-1547L; K-1547R; and K-1549R. Sample K-1540S001, collected from the left drain of Igloo K-1540L, was reported with a concentration of 510 mg/kg for 2,4-dinitrotoluene, which exceeded the NMED residential SSL of 15.7 mg/kg. The U.S. Army Corps of Engineers (USACE) removed areas that exceeded NMED residential SSLs and capped the drains, as recommended in the 2013 RFI report (AMEC 2017).

Another sample, 1641K-1542L-SS-D-SO (duplicate), collected from under the left drain of Igloo K-1542, was included in this removal because of a reported concentration of 6.9 mg/kg for RDX (NMED residential SSL of 6.0 mg/kg) (AMEC 2017).

Concentrations of arsenic, 4.0 and 6.1 mg/kg, were identified at two igloos drains, K-1527R and K-1543R, respectively that exceeded the NMED residential SSL of 3.9 mg/kg in effect at the time of the field work. Subsequently, the Army conducted a site-specific assessment of background levels at FWDA. Based on the findings of the background study, NMED determined that the mean background concentration for arsenic at FWDA was 5.6 mg/kg with a range of arsenic concentrations between 0.2 mg/kg and 11.2 mg/kg. After this determination, the concentrations previously identified (4.0 and 6.1 mg/kg) fell within the site-specific range for arsenic and did not constitute an exceedance, negating the need for removal in these areas for arsenic (AMEC 2017).

### 2.2.3 Parcel 24, AOC 18, Igloo Block A

The 2008 release assessment investigation at AOC 18 resulted in 35 exceedances of lead in composite samples collected at the igloo drains. Lead detections that exceeded the NMED residential SSL of 400 mg/kg ranged from 407 mg/kg to 1,790 mg/kg (USACE SWF 2014).

After review of the *Release Assessment Report for Parcel 4A Igloo Block C, Final*, NMED approved the report with direction and required a re-sample event at any Igloo Block C location where lead was detected at concentrations between 200 and 400 mg/kg. In response to the NMED comments within the Approval with Direction letter regarding lead concentrations in these soils from previous sampling events for Igloo Block C, the Army used this same process to re-sample Igloo Block A within Parcels 24 and 9 (USACE SWF 2014).

Based on the 2010 re-sample release assessment investigation results for 8 RCRA metals at AOC 18 within Parcel 24, the following exceedances occurred: 21 XRF results for lead, 5 XRF results for arsenic, 1 XRF result for mercury, 9 confirmation sampling results for lead, and 3 confirmation sampling results for arsenic (USACE SWF 2014).

Lead was detected by XRF at the following concentrations: 1,333 mg/kg on the left side of A-903; 2,691 mg/kg on the right side of A-907; 1,582 mg/kg on the left side of A-909; 497 mg/kg on the left side of A-920; 514 mg/kg on the right side of A-922; 512 mg/kg on the left side of A-927; 5,290 mg/kg on the left side of A-935; 11,540 mg/kg on the right side of A-936; 445 mg/kg on the right side of A-938; 1,021 mg/kg on the right side of A-941; 764 mg/kg on the left side of A-943; 2,142 mg/kg on the right side of A-946; 2,404 mg/kg on the right side of A-947; 995 mg/kg on the right side of A-950; 784 mg/kg on the right side of A-955; 2,327 mg/kg on the left side of A-955; 523 mg/kg on the left side of A-962; 444 mg/kg on the left side of A-965; 491 mg/kg on the right side of A-969; 447 mg/kg on the right side of A-975; and 828 mg/kg on the left side of A-977 which exceeded the NMED residential SSL of 400 mg/kg. Arsenic was detected by XRF at the following concentrations: 45.3 mg/kg on the right side of A-905; 20.2 mg/kg on the left side of A-936; 1,088 mg/kg on the right side of A-936; 43.9 mg/kg on the left side of A-945; and 26.9 mg/kg on the left side of A-963 which exceeded the NMED residential SSL of 3.9 mg/kg. Mercury had a concentration of 17.0 mg/kg on the left side of A-970 which exceeded the NMED residential SSL of 15.6 mg/kg (USACE SWF 2014).

Lead was detected at the following concentrations in the confirmation samples: 440 mg/kg on the left side of A-905; 480 mg/kg on the right side of A-909; 640 mg/kg on the right side of A-914; 1,400 mg/kg on the right side of A-920; 2,300 mg/kg on the right side of A-924; 3,900 mg/kg on the right side of A-929; 430 mg/kg on the left side of A-934; 660 mg/kg on the left side of A-936; and 740 mg/kg on the right side of A-964 which exceeded the NMED residential SSL of 400 mg/kg. Arsenic concentrations were detected at the following concentrations in the confirmation samples: 4.1 mg/kg on the left side of A-905; 4.0 mg/kg on the right side of A-929; and 4.3 mg/kg on the right side of A-948, all of which exceeded the NMED SSL of 3.9 mg/kg in place at the time of sampling (USACE SWF 2014).

The field portable XRF instrument was used as a screening tool only to guide decision making in the field regarding the need for additional soil removal. Confirmation soil samples were taken for 20% of the XRF measurements. Confirmation soil samples were collected from a depth interval of 0 to 3 inches and co-located with XRF readings. Laboratory analyses did not correlate well with XRF reading results. The confirmation samples were homogenized by the laboratory prior to analysis, whereas the in-situ XRF readings are from direct field soil samples. This resulted in large variability between the XRF soil readings and the laboratory confirmation sample results (USACE SWF 2014).

XRF readings taken on drainpipes indicated the presence of lead-based paint with significant lead concentrations which may be the source of lead contamination in the soil. Therefore, removal of the igloo drainpipes was included with soil removal in Parcel 24 (USACE SWF 2014).

The Release Assessment Report recommended removal of all igloo drainpipes 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 using NMED SSLs outlined in the 2019 guidance (Zapata 2019).

Permittee-Initiated Interim Measures were completed within Parcel 24 Igloo Block A on May 24, 2018, for a subset of drain locations where exceedances of NMED residential screening criteria had been found. These interim measures, included drainpipe removal and plugging, soil excavation, confirmation sampling, and waste profile and disposal. Confirmation sample results from the interim measures at Parcel 24, Igloo Block A showed that soil exceeding NMED cleanup standards had been successfully removed (Zapata 2019).

#### 2.2.4 Parcel 6, AOC 28, Igloo Block B

The 1997 “Final Remedial Investigation/Feasibility Study & RCRA Corrective Action Program Document” states during the RI, 24 discrete surface soil samples were collected under the igloo drains and 15 discrete surface soil samples were collected in storage revetments (ERM, 1997). These soil samples were analyzed for explosives and were reported below background levels. The report does not indicate a specific source for the final background values, only a description of a 1992 work plan that outlined the methodology for determination of the background values.

The 2000 “Environmental Baseline Survey for the Transfer of Lands” at FWDA report provides a physical description of Igloo Block B. The buildings were not considered to be potentially hazardous according to the RI/FS Risk Assessment. Environmental issues that would potentially affect the property transfer were not found during this limited investigation (USGS 2019).

### 2.3 Evaluation of Historical Sampling Results from Parcels 6, 9, 16 and 24 for Current Work Plan Purposes

Section 2.2 summarized the igloo exterior and revetment sampling history from 2008 to 2013 at FWDA. Of the 732 igloos and 284 revetments at FWDA, 308 igloos and 198 revetments have been sampled and 424 igloos (~58%) and 86 revetments (~30%) have not been sampled. The configuration and historical use of the igloos and revetments on FWDA are similar, allowing them to form two groups with predictable characteristics with limited variability. Since several hundred igloos and revetments have not been sampled and a considerable amount of data have already been collected, the Army and NMED discussed utilizing the information already collected to design a study to generalize a conclusion regarding the remaining unsampled igloos and revetments at FWDA.

In the Army’s presentation to NMED on January 09, 2019, entitled “Fort Wingate Depot Activity Igloo Apron and Revetment Soil Samples” (Appendix B), the Army outlined a statistical evaluation of the existing data for igloos and revetments at FWDA. Based on the evaluation, the Army proposed no further soil sampling at the unsampled igloo apron and revetment sites, due to the lack of screening level exceedances at the sites that had been sampled.

To address remaining uncertainty, NMED proposed that the Army collect additional samples at the six igloos and revetments with the highest concentrations of COCs from data associated with soils under the igloo drains or within the revetment. The data would be collected in such a manner as to allow both nature and extent and human and ecological risk from residual COCs to be evaluated. With this assessment, NMED would consider the development of a path forward utilizing risk refinements and LOE to generalize the residual contamination and risk from igloos/revetments already sampled to the remainder of the unsampled igloos and revetments.

The following sections present the Army's approach to such a study. The work plan incorporates information from both the presentation made to NMED in Jan 2019, and suggestions from NMED via email (Wear to Cushman, Mar 04, 2021, Appendix B). The approach is consistent with the Interstate Technology Regulatory Council (ITRC) Incremental Sampling Methodology Version 2 (ISM-2) standard (ITRC 2022) and protocols and will allow both nature and extent as well as risk to human health and the environment to be assessed at both igloos and revetments at FWDA.

### 2.3.1 Selection of the Six Highest Concentration Igloo Exteriors for Further Study

The six highest concentration igloos were selected after the completion of a data reduction using the existing analytical results. The analytical data for all **detections** at igloos were compiled for RCRA 8 metals and explosives (Appendix C) and screened against project action limits (PALs) (Table 6-1A and 6-1B; Section 8.2.1). These data were then reduced using the following process:

1. Only the discrete sampling data points or drain composite samples (also referred to as igloo exterior composite samples) representative of soil below the igloo drainpipes, prior to remediation, were retained for each analytical category (Table 2-1a and 2-2a).
2. Only samples from the 0-0.5 ft depth, representative of the currently planned apron superficial soils sampling depth, were retained (Table 2-1a and 2-2a).
3. Results were tabulated and screened against the NMED Residential SSLs as well as the selected ecological SSL, which was only for plants, as plants are the only ecological receptor requiring evaluation at igloos (Section 3) (Table 2-1a and 2-2a).
4. To ensure that the screening was not based only upon concentrations and that toxicity was accounted for, an exceedance of the PAL was calculated (Exceedance of PAL = Igloo result (mg/kg) / PAL (mg/kg)) for each COC (Table 2-1a and 2-2a).
5. Exceedances of the PALs were reviewed. Metals showed greater exceedance factors (Table 2-1a) than explosives (Table 2-2a). Only 79 PAL exceedance factors > 1.0 were observed for metals. There were 75 PAL exceedance factors greater than 1.0 for lead, three values for arsenic, and a single value for chromium; the chromium detection was at the same location as the largest lead exceedance.
6. No distinction was made between left drain sampling, right drain sampling, or composite sampling, as long as the depth was no deeper than six inches.
7. The 6 igloo locations with the largest exceedance factors across all analytical categories were selected. These igloo locations were: (1) K-1545 in Parcel 16; (2) A-979 in Parcel 9; (3) A-933 in



Parcel 24; (4) A-946 in Parcel 24; (5) A-929 in Parcel 24 and (6) A-939 in Parcel 24. Table 2-1a shows these locations with green highlights along with their associated analytical results.

8. One of the selected igloo locations (A-979) also had low level explosives detections (exceedance of PAL of 3.02E-05).
9. All 6 of these highest concentration locations exceeded NMED residential SSLs and the selected ecological SSL, making them the highest concentration locations for the work plan. These igloos provide the locations with the highest likelihood that COCs will be detected if transport away from the igloo drains occurs.
10. Since the selection was based upon highest concentration, the locations were not adjusted to accommodate spatial distribution across parcels or AOCs.

Using these selected igloos (i.e., K-1545, A-979, A-933, A-946, A-929, A-939) as igloo sampling locations, a work plan approach (Section 3) was developed. Output from these data reduction steps can be found in Appendix C.

### 2.3.2 Selection of the Six Highest Concentration Revetments for Further Study

The six highest concentration revetments were selected after the completion of a data reduction using the existing analytical results. The analytical data for all **detections** at revetments were compiled for RCRA 8 metals and explosives (Appendix C) and screened against project action limits (PALs) Table 6-1A and 6-1B; Section 8.2.1). These data were then reduced using the following process:

1. Data from both discrete and MI sample results were reviewed; only locations associated with MI data were retained for further evaluation as the MI data showed the largest historical detections (Table 2-1b and 2-2b).
2. Only samples from the 0-0.5 ft depth, representative of the currently planned superficial soils sampling depth, were retained (Table 2-1b and 2-2b).
3. Results were tabulated and screened against the NMED Residential SSLs as well as the selected ecological SSL. For revetments, the two receptors under evaluation are plants and the deer mouse (Section 3) (Table 2-1b and 2-2b).
4. To ensure that the screening was not based only upon concentrations and that toxicity was accounted for, an exceedance of the Project Action Limit (PAL) was calculated (Exceedance of PAL = Revetment result (mg/kg) / PAL Value (mg/kg)) for each COC.
5. Exceedances of the PALs were reviewed. Metals showed greater exceedance factors (Table 2-1b) than explosives (Table 2-2b). Only 6 PAL exceedance factors > 1.0 were observed for metals. There was 1 for barium, 2 for lead, 1 for selenium and 2 for total chromium. There was no overlap in locations between where the metals exceedances were seen and detections for explosives noted.
6. The 6 revetment locations with the largest exceedance factors across all analytical categories were selected. These locations were: (1) Y-K-1536 in Parcel 16; (2) Y-B-1013 in Parcel 6; (3) Y-B-1035 in Parcel 6; (4) Y-K-1530 in Parcel 16; (5) Y-K-1539 in Parcel 16 and (6) Y-A-962 in Parcel 24. Table 2-1b shows these locations with green highlight along with their associated analytical results.



7. All 6 of these highest concentration locations exceeded NMED residential SSLs and the selected ecological SSL, making them the “worst case” locations for the work plan. These revetments provide the locations with the highest likelihood that COCs will be detected if releases to surficial soils from open air storage of munitions has occurred.
8. Since the selection was based upon highest concentration, the locations were not adjusted to accommodate spatial distribution across parcels or AOCs.

Using these selected revetments (i.e., Y-K-1536, Y-B-1013, Y-B-1035, Y-K-1530, Y-K-1539 and Y-A-962) as revetment sampling locations, a work plan approach (Section 3) was developed. Output from these data reduction steps can be found in Appendix C.

## 3.0 Work Plan Approach

Developing the work plan approach through problem formulation identifies COCs, fate and transport mechanism, contaminated media, and exposure pathways to appropriate human and ecological receptors to produce a site-specific conceptual site model (CSM). This CSM forms the basis for the scope of work and sampling strategy. Each of the steps to developing a site-specific CSM are addressed in the following sections.

### 3.1 Problem Formulation and Development of the Site-Specific Conceptual Site Model

The development of a CSM requires knowledge of the igloo and revetment settings, COCs, fate and transport, contaminated media, human/ecological receptors, and potentially complete/complete exposures.

For this study, it has been determined (Section 2.3) that the six highest concentration igloo locations are: (1) K-1545; (2) A-979; (3) A-933; (4) A-949; (5) A-929, and (6) A-939. The six “worst case” revetment locations are: (1) Y-K-1536; (2) Y-B-1013; (3) Y-B-1035; (4) Y-K-1530; (5) Y-K-1539 and (6) Y-A-962. The site-specific conceptual site model includes igloo exteriors and both interior and exterior areas for revetments.

#### 3.1.1 Igloo Exteriors and Revetment Physical Settings

Igloos and revetments are set up as “blocks” within FWDA (Figure 2-2). While some igloos/revetments are smaller than others (Table 3-1), the general layout of igloos and revetments remains consistent across the installation.

##### 3.1.1.1 Igloo Exteriors

A schematic showing key igloo exterior features can be found in Figure 3-1. A road runs in front of each igloo. Each igloo has an apron, typically made of concrete, which lies directly in front of a sole igloo entrance door. Munitions were unloaded on the apron and brought into the interior through the front door. There are external drainpipes on either side of the main door that, if needed, can drain from the

interior of the igloo into an apron swale on either side of the exterior apron. If topography and road elevation allow, additional drainage could occur from the apron swales across the road to the road swale.

The selection of the highest concentration igloo locations was determined from analytical results from surficial soil samples taken under the drains (see Section 2.3).

#### *3.1.1.2 Revetments*

A schematic showing key revetment features can be found in Figure 3-4. A road runs in front of each revetment and there is an earthen access ramp between the road and the interior of the revetment. Munitions were unloaded in front of or on the access ramp and brought into the earthen bermed enclosure for open air munitions storage. If topography and road elevation allow, additional drainage could occur from the revetment ramp across the road to the road swale.

### 3.1.2 Contaminants of Concern

Based on historical investigations and operations (Section 2.2), and consistent with the data reduction conducted as part of the igloo and revetment selection process (Section 2.3), the analytical suites are the same for both igloos and revetments and the COCs for this exterior work plan are RCRA 8 metals and explosives. RCRA 8 metals include arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. The explosives COCs are 1,3,5-trinitrobenzene, 1,3 dinitrobenzene, 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2,4/2,6-dinitrotoluene mixture, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, PETN, RDX, nitrobenzene, nitroglycerin, 1,3-nitrotoluene, 1,2-nitrotoluene, 1,4-nitrotoluene, and Tetryl.

### 3.1.3 Media and Contaminant Fate and Transport

The medium of concern in the work plan is surficial soil. For igloo exteriors, this is supported by an evaluation of contamination as a function of depth for drainpipe removals conducted in igloo blocks A, B, C, D, and K, where confirmation sampling showed that 99% of excavations had COC concentrations below NMED residential SSLs in soil at a depth of 6 inches, and 100% had COC concentrations below NMED residential SSLs at a depth of 12 inches (Army presentation to NMED, 2019; Appendix B). Similarly for revetments, contamination, if introduced, would come from munitions resting on the soil surface making surficial soil the primary soil horizon for evaluation.

Source areas, release mechanisms and fate and transport for igloos and revetments are each discussed below.

#### *3.1.3.1 Igloos*

Historically, igloos were used for the indoor storage of munitions. Consequently, the primary release mechanism would be due to spillage or leakage from these stored munitions, which would migrate to the interior drainage channels and subsequently discharge to the exterior. Soils under exterior igloo drains have been sampled and when COC levels exceeded NMED residential SSLs, excavations were performed

until all COC concentrations were below NMED residential SSLs and cumulative cancer risk and/or non-cancer hazard thresholds were below NMED target risk thresholds (TRTs) of 1E-05 for cancer risk and 1.0 for non-cancer hazard. These excavations addressed the vertical component of transport and confirmed that contamination was primarily in surficial soils.

Based upon the physical setting of the igloos (Section 3.1.1), transport would be expected from the drainpipe along the apron swales towards the road. Transport via natural drainage pathways could include transport from the apron swales over the road to the road swales when road elevation is lower than the igloo aprons (Figure 3-1).

#### *3.1.3.2 Revetments*

Historically, storage of munitions in revetments involved placing munition crates or storage containers directly on the soil within the berm. Therefore, potential releases would be expected to be under a munitions crate or storage container within the bermed area. These releases could potentially migrate laterally, potentially impacting the access ramp.

Typically, the revetments and their associated access ramps are level or near to level surfaces between the road and the igloo, but revetments are sometimes built on the sides/edges of land with changes in elevation. When such a configuration exists, transport may occur from the interior of the revetment, down the access ramp and across the road to the road swale (Figure 3-4).

### 3.1.4 Receptors – Human and Ecological

The development of a CSM includes an evaluation of potential human and ecological receptors that could be exposed to site related COCs (NMED 2022 and 2017, revised). Below, human and ecological receptors are evaluated for inclusion in the site-specific CSM for both igloos and revetments.

#### *3.1.4.1 Human Receptors*

Although NMED guidance allows for evaluation of residential, construction and commercial/industrial workers at a site, at FWDA, site-specific reasonably anticipated current or future use (USEPA 2000) for human receptors at both the igloos and revetments is for activities associated with commercial storage of materials. Consequently, the only human receptor considered in the site-specific CSM is the commercial/industrial worker (NMED 2022) (Figure 3-7). As requested by NMED, risk for this receptor will be screened using NMED residential standards, as discussed further in Section 3.3.1.2.

#### *3.1.4.2 Ecological Receptors*

The igloo and revetment areas under reevaluation are limited in size, therefore, prior to inclusion of a representative receptor category in the ecological CSM, Area Use Factors (AUFs) were calculated for five of the six representative receptors (deer mouse, horned lark, kit fox, red-tailed hawk, prong horned antelope). The AUF calculations used the study areas for the igloos and revetments (Table 3-2) and the home ranges for the receptor to determine if the site area comprised >10% of the receptors home range (NMED 2017, revised). To be conservative and protective the area calculation included both the apron and road swales for igloos and the interior, access ramp and road swale for revetments. These calculations

(Table 3-2) show that only the deer mouse needs to be evaluated, and then, only for revetments. Plants are not evaluated using home ranges or acreages, and no acreage has been specified as a threshold in NMED guidance. However, to be conservatively protective, evaluations will also be conducted on plants for both igloos and revetments. Historically contamination has been found in surficial soils, so the exposure medium for plants will be restricted to only surficial soils, though plant root systems extend below the surficial layer of soil (Figure 3-8).

### 3.1.5 Exposure Route, Exposure Pathway Analysis, and the Site-Specific Conceptual Site Model

The final exposure pathway analyses integrate the information on source areas, release(s), fate and transport, and exposure to arrive at a site-specific CSM.

#### 3.1.5.1 Human Health

The commercial/industrial worker scenario will be evaluated at the selected igloo exterior and revetments (Section 3.4.2). Dermal contact, ingestion, and inhalation pathways (Figure 3-7) to surface soils in the igloo apron swales and revetments are complete (Figures 3-3 and 3-6). This is consistent with workers loading/unloading materials in front of the storage sites, entering and exiting conveyance vehicles, and walking on either side of the vehicle and in and out of the storage area.

The human exposure is incomplete for surface soils in the road swale on the far side of the road that passes in front of the storage area, as this location is not reasonably expected to be contacted during work activities (Figures 3-3 and 3-6).

#### 3.1.5.2 Ecological

For receptors with home ranges (deer mouse, horned lark, red fox, red tailed hawk, prong horned antelope), only the deer mouse will be evaluated based upon the size of the study area and AUFs calculated as a function of receptor home range, and then only for revetments (Section 3.4.2.2). Plants will be evaluated for both igloos and revetments due to direct contact with surface soil, however, exposure to subsurface soil will not be included. These receptor categories are the only receptors requiring evaluation, regardless of whether the road swales are included in the AUF calculations (Tables 3-1 and 3-2, Figure 3-8).

#### 3.1.5.3 Conclusions

Problem Formulation has resulted in the development of a site-specific CSM for both igloo exteriors and revetments that allows both nature and extent, and risk to human and ecological receptors to be evaluated. The commercial/industrial worker is the only receptor that will be evaluated for the human health risk assessment. For ecological receptors, the deer mouse at revetments and plants at igloos and revetments will be assessed.

Each of these evaluations requires a specific sampling design. The following sections describe the development of decision units (DUs), sampling units (SUs) and exposure units (EUs) to address each of the study goals listed in Section 3.2.

## 3.2 Data Collection Goals

The goals of the data collection in this work plan are to collect data of sufficient quality and quantity to:

1. Determine the nature and extent of RCRA 8 metals and explosives if a release to the igloo aprons, and/or within/external to revetments has occurred.
2. Determine whether RCRA 8 metals and explosives are present in quantities that might pose unacceptable risk to site-specific current/future human and ecological receptors.

## 3.3 Incremental Sampling Methodology Design – Sampling Units, Decision Units and Exposure Units

Incremental Sampling Methodology (ISM) has been selected for this study for the purpose of defining nature and extent and evaluating risk to humans and the environment. ISM is a structured composite sampling and processing protocol that reduces data variability and provides a reasonably unbiased estimate of mean contaminant concentrations in a volume of soil targeted for sampling. ISM also provides representative samples of specific soil volumes defined as decision units (DUs) and requires fewer analytical samples than would be required to yield a comparable estimate mean concentration using a discrete sampling approach (ITRC 2020). For these reasons, ISM was selected for sampling igloo exteriors and revetments and applied to the approach for selecting and designing DUs and SUs.

Igloos and revetments have two general zones: 1) a zone proximate to the storage area; and 2) a zone across the access road from the storage area. To evaluate concentration gradient, nature and extent, as well as exposure, each DU/SU will be one ISM sample. DUs are assigned to define concentration gradients and nature and extent because a decision may be made based upon a concentration term derived from that DU. This study design generates representative data that will address the evaluation of releases, hot spots, and distribution of COCs. These same areas become SUs for the risk evaluation because the SUs are components of a larger EU, and for risk purposes, decisions will only be made based upon EU results.

The following sections will show how the areas for the igloos and revetments are divided for sampling purposes.

### 3.3.1 Igloos

#### 3.3.1.1 *Nature and Extent*

Igloos are uniformly 30 feet wide, can be 40, 60, or 80 feet in length and are set anywhere from 25 to 65 feet back from the access road (Google Earth Pro, 2016). For the purposes of delineating potential lateral transport, each apron swale is considered separately and has been divided into two DUs. Division of the apron swale into two DUs will show a concentration gradient with distance from the igloo if a release from the igloo drain has occurred. The road swale has been divided into three DUs. If transport has traversed the entire length of either apron swale and topography supports transport across the road, the three DUs

in the road swale will allow a determination of which apron swale may have transported contamination across the road, as well as any potential concentration gradient across these DUs.

This configuration of DUs is the default standard. If the topography or layout around an igloo indicates a topographic shift, photographic evidence and field sketches will be documented in the study files to show the position of the shift and how the DUs are adjusted. If this shift in drainage constitutes more than a 50% increase in the affected area's size, an additional DU will be added and documented in the study notes. Figure 3-2 shows DU design for the purposes of delineating nature and extent. Figures with final delineations will be provided in the final report. Derivation of the concentration term is described in greater detail in Section 3.4.

#### *3.3.1.2 Exposure and Risk Screening*

Both human and ecological exposures need to be assessed for igloos aprons. These evaluations will utilize the sampling design for nature and extent and adapt it for exposure and risk assessment purposes as outlined below.

##### *3.3.1.2.1 Human Health*

Exposure for the commercial/industrial worker is limited to surface soil in the apron swales and exposure has equal probability of happening with either swale. The areas designated DUs for purposes of nature and extent are now SUs within the EU. The evaluation of risk will use only the concentration term for the human health EU (Figure 3-3). The EU collectively is the concentrations from SUs 1 through 4. Derivation of the concentration term is described in greater detail in Section 3.4.

##### *3.3.1.2.2 Ecological*

Two scenarios present themselves for ecological evaluations. Scenario #1 has the same SUs contributing to the EU as described for the commercial/industrial worker and uses SUs 1 through 4 to yield an EU concentration. For scenario #2, if contamination has migrated across the road, three additional SUs (SUs 5 through 7) will be included in the EU (Figure 3-3). Derivation of the concentration term is described in greater detail in Section 3.4.

### *3.3.2 Revetments*

#### *3.3.2.1 Nature and Extent*

The revetments are located throughout the igloo blocks between the igloos. The larger revetments measure 42 feet by 72 feet and the smaller revetments are 34 feet by 64 feet (Sundance 2018). For the purposes of delineating potential releases and lateral transport, each revetment is divided into four DUs plus an access ramp. The division of the interior of the revetment into four DUs allows for the evaluation of potential releases within the storage area. Assigning a DU to the access ramp allows for evaluation of potential releases as well as potential lateral transport out of the interior of the revetment.

The revetment road swale has also been divided into three DUs. If transport has traversed the access ramp and topography indicates potential transport across the road, three DUs in the road swale will allow a determination of whether the contamination has been transported.

This configuration of DUs is the default standard. If the topography or layout around a revetment indicates a topographic shift, photographic evidence and field sketches will be documented in the study files to show the position of the shift, and how the DUs are adjusted. If this shift in drainage constitutes more than a 50% increase in the affected area size, an additional DU will be added and documented in the study notes.

Figure 3-5 shows DU design for the purposes of delineating nature and extent. Derivation of the concentration term is described in greater detail in Section 3.4.

### 3.3.2.2 *Exposure and Risk Assessment*

Both human and ecological exposures need to be assessed for revetments. These evaluations will utilize the sampling design for nature and extent and adapt it for exposure and risk assessment purposes as outlined below.

#### 3.3.2.2.1 Human health

Exposure for the commercial/industrial worker is limited to surface soil within the bermed area and the access ramp. Exposure has equal probability of happening in any of the 5 SUs associated with these areas. The areas designated DUs for purposes of nature and extent are now SUs within the EU. The evaluation of risk for the commercial/industrial worker will use only the concentration term for the human health EU (Figure 3-6). The EU is collectively the concentrations from SUs 1 through 5 combined as an area weighted average of the SU means. Derivation of the concentration term is described in greater detail in Section 3.4.

#### 3.3.2.2.2 Ecological

Two scenarios present themselves for ecological evaluations. Scenario #1 has the same SUs contributing to the EU as was described for the commercial/industrial worker and uses SUs 1 through 5 to yield an EU concentration (Figure 3-6). For scenario #2, if contamination has migrated across the road, three additional SUs (SUs 6 through 8) will be included in the EU (Figure 3-6). Derivation of the concentration term is described in greater detail in Section 3.4.

## 3.4 Development of the Concentration Term and Risk Screening

All ISM concentrations in this study will be derived from triplicate sampling of each SU or DU and the use of the ITRC calculator (ITRC 2020). The calculator takes the triplicate results and calculates a 95% upper confidence limit (95UCL) for each SU/DU using the central tendency Chebyshev calculation. The details of the calculation can be found in Section 6.4. The sections below outline how the SUs/DUs will be used in the nature and extent, and exposure calculations.

### 3.4.1 Nature and Extent (Decision Units)

For both igloos and revetments, each DU will be sampled in triplicate and a 95UCL calculated using Chebyshev (Section 6.4.3). Figure 3-2 shows the DUs for igloos, and Figure 3-5 shows the DUs for revetments.

### 3.4.2 Risk Screening (Exposure Units)

Exposure units combine SUs so that the exposure area of any given receptor is represented. If the SUs are not all equal in size, area weighted averages may need to be calculated to reflect the distribution of the SU concentrations within the EU. Each SU will be sampled in triplicate and a 95UCL calculated using Chebyshev with the ISM-2 calculator (Section 6.4.3).

#### 3.4.2.1 Exposure Concentration for Human Health

For igloos, each human health EU is composed of the area encompassed by all four apron swale SUs (Figure 3-3). The human health EU concentration will be calculated as the mean of the 95UCLs from the four apron swale SUs. If the apron swale SUs are not all the same size, an area weighted mean of the 95UCLs will be calculated so that exposure is weighted to reflect the spatial distribution of the SUs areas.

A similar approach will also be taken for the revetments. The four interior SUs and access ramp SU will each have a 95UCL calculated from the triplicate sampling and then a mean of the 95UCLs calculated using all five SUs (Figure 3-6). If the five SUs are not all the same size, an area weighted mean of the 95UCLs will be calculated so that exposure is weighted to reflect distribution of the SUs areas.

#### 3.4.2.2 Exposure Concentration for Ecological Receptors

For igloos, each ecological EU is composed of the area encompassed by all four apron swale SUs plus all three road swale SUs (Figure 3-3) if transport across the road is deemed possible. The ecological EU concentration will be calculated as the mean of the 95UCLs from all four (or seven as appropriate) of these SUs. If the swale SUs are not all the same size, an area weighted mean of the 95UCLs will be calculated so that exposure is weighted to reflect the spatial distribution of the SUs areas.

A similar approach will also be taken for the revetments. The four interior SUs, the single access ramp SU and the three road swale SUs (if transport across the road is deemed possible) will each have a 95UCL calculated from the triplicate sampling and then a mean of the 95UCLs calculated using all 5 (or eight as appropriate) SUs (Figure 3-6). If the SUs are not all the same size, an area weighted mean of the 95UCLs will be calculated so that exposure is weighted to reflect distribution of the SUs areas.

#### 3.4.2.3 Risk Screening

The EU concentration terms developed in Section 3.4.2.1 and 3.4.2.2 will be screened against the of NMED's Risk Assessment Guidance for Site Investigations and Remediation, Volumes 1 (Human Health Risk Assessment, NMED 2022) and 2 (Ecological Risk Assessment, NMED 2017, revised), or latest version.

At NMED's request, the residential screening values will be used for screening human health. The deer mouse will be screened against Tier 1 screening level and Tier 2 Toxicity Reference Value (TRV) values, and plants will be screened against Tier 1 and 2 exposure concentrations (ECs), as needed.

## 4.0 Deliverables, Schedule & Required Coordination

The following steps show the deliverables, schedule, and coordination for this work:



- 1) Army delivery of Work Plan NMED: March 2023
- 2) NMED review of Work Plan: 60 days
- 3) Army Field Mob Preparation: 30 – 90 days from NMED approval (weather permitting)
- 4) Army Field Work: 30 – 60 days from arrival on-site
- 5) Army Sample Analyses and Validation: 60 – 90 days
- 6) Army preparation and submission of Final Report to NMED: 180 days from completion of data validation

## 5.0 Field Sampling Approach

ISM DUs and SUs/EUs have been assigned to each of the six igloos and six revetments so that both nature and extent (Section 7.0) and exposure to human and ecological receptors (Section 8.0) can be evaluated with the analytical data generated. The data generated from this sampling event will allow an evaluation of both nature and extent and risk to human health and the environment and will be consistent with Attachment 7 of the RCRA Permit (USEPA Identification (ID) NM 6213820974 for the FWDA 17 Permit, dated December 2005 (Revised February 2015)). The details of this ISM sampling approach are provided in the following sections.

### 5.1 Site and Safety Plan

The FWDA Site and Safety Plan (SSP) (Appendix D) defines the roles and responsibilities of site personnel, establishes proper levels of personal protective equipment (PPE), and describes emergency response and contingency procedures. The SSP will be maintained at FWDA for inspection during field activities.

All work will be completed by a supervisor, operators, and technicians that have successfully completed 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training in accordance with 29 U.S. Code of Federal Regulations (CFR) 1910.120 and maintained their mandatory annual 8-hour HAZWOPER refresher certification. A dedicated USACE Site Safety Officer (SSO) will be on site during all site activities associated with this Work Plan.

The required PPE for this field work will include long pants, disposable gloves, safety glasses, safety vest and work boots. A handwashing station will be made available for field staff.

### 5.2 Materials and Methods

Required materials and procedures for sample collection, required volume, handling, preservation and storage, decontamination, and shipment are outlined in the following sections and follow the standard operating procedure (SOP) for ISM sampling included as Appendix E. Sampling will occur from areas of expected lowest concentrations to areas of highest concentrations. Additional details are provided in Section 5.2.4.

### 5.2.1 Equipment and Materials

The following equipment and materials, at a minimum, may be required:

- Pin flags or rope to mark either grid corners or outline the sampling grid
- Incremental sampling tool (e.g., flighted auger or coring tool)
- Clean resealable bags (e.g., Ziplock), 5-gallon plastic containers, or other appropriate large container for consolidating the increments; the size of the container should be adequate to hold the entire ISM sample volume, which is approximately 1-2 kilograms (kg)
- Cooler and ice for cold storage of samples after collection
- Field logbook and pen with waterproof black ink for field documentation
- Camera for photographs
- Global Positioning System (GPS) instrument to submeter accuracy measurements (or less if possible) or other survey equipment to document locations of DUs
- PPE to be worn during sample collection as required by the Health and Safety Plan (Section 5.1)

### 5.2.2 ISM Procedure

The general ISM procedure is described below and aligns with the Interstate Technology Regulatory Council (ITRC) Incremental Sampling Methodology Version 2 (ISM-2) standard (ITRC 2022). Thirty (30) increments of surface soil of approximately the same weight, as determined by the consistent sample volume, will be collected within each cell of the DU. For surface soil sampling, an incremental sampling tool will be used to facilitate the rapid collection of uniform, representative increments from a consistent depth interval (i.e., 0" to 6"). This way, equal volumes are collected for each increment and equal mass is obtained, working under the assumption that the density of the sampled medium is uniform/will average across the DU. The size of the coring tool will be selected based on the volume of the increments, which is in turn calculated based on number and depth of the increments. This will be calculated prior to field mobilization. An adequate total sample mass is typically 1-2 kg dry weight, which helps to overcome effects of compositional heterogeneity due to the inherent particulate nature of soil. It is not necessary to determine the location of every increment collected using a GPS instrument, provided the areal extent of the DU has been properly identified.

The following procedure will be followed within each DU:

- 1) Personal protective equipment (PPE) (Section 5.1) will be donned prior to ISM sampling activities.
- 2) The areal extent of the DU will be demarcated in the field using pin flags or rope and fixed with a GPS instrument. Increments will be selected as defined below in Section 5.2.2.1.
- 3) The surface will be cleared by cutting/chopping vegetation to ground level as needed. Surficial objects (e.g., vegetation, rocks, debris, etc.) will be removed in a manner that will ensure the ground is not disturbed where sampling is to occur.
- 4) Immediately adjacent to the first DU, an increment will be collected and weighed to ensure the mass collected is 1/30<sup>th</sup> of the total sample mass required, as specified by the laboratory. The

sampling diameter will be adjusted so that each increment contributes approximately 1/30<sup>th</sup> of the required mass.

- 5) Increments will then be collected from the depth interval specified (0" to 6") using a coring tool or other method that ensures equal volume is collected for each increment. The stainless-steel sampler will be pushed into the soil until the sampler is full or will not penetrate further, whichever comes first. The sampler will be carefully removed from the ground and the soil pushed out of the sampler using the lever on the side of the instrument directly into a 2-gallon sealable bag. Within the sample:
  - a. Vegetation and oversized material will be manually removed with tweezers or spatulas. The excluded materials will be documented via photographs and field notebook.
  - b. If adequate sample amount cannot be collected from the assigned sample location due to resistance, obstruction, etc., the sample location will be shifted as minimally as possible within the increment cell and fully documented in the field notes and photographically if possible. Any adjustment to the sample location will be thoroughly documented in the field notebook and photographed.
- 6) The bag containing the whole ISM sample (mass from 30 increments) will be labeled with indelible ink. Rock, gravel, and debris greater than approximately 0.5-inch diameter will not be included in the samples unless they are consistent with and part of the overall soil matrix.
- 7) Triplicate samples will be collected from each DU. The specific relative location of the triplicate increments will be established within each DU cell in a random manner to eliminate potential bias as detailed in Sections 5.2.2.1, 5.2.2.2, and 5.2.2.3.
- 8) Holes left by sampling will be filled using surrounding soil or, if necessary, a sand will be brought in to bring the subsurface sampling areas back to original grade.
- 9) The sample(s) will be double bagged, taped for shipping and placed on ice in coolers for transport under chain-of-custody protocol (Section 5.2.11) to the analytical laboratory. Copies of the chain-of-custody forms and shipping documents will be retained in the project file. Field activities will be documented according to logbook procedures.
- 10) All sample collection data will be documented on site in field logbooks at the time of collection.
- 11) Equipment will be decontaminated at the igloo or revetment under investigation as outlined in Section 5.2.3.

#### *5.2.2.1 Decision Unit Grid Design*

Each DU will be rectangular in shape as portrayed in Figures 3-2 and 3-5. The DU will first be subdivided or gridded-off into uniform cells, or subareas, based on the necessary minimum 30 increments (i.e., the number of cells is equivalent to the number of increments). This sampling effort will be executed in a systematic random sampling method (also known as systematic grid sampling) where a random sampling location is identified within the first grid cell, and then samples are obtained from adjacent cells sequentially in a serpentine pattern using the same relative location within each cell, as demonstrated in Figure 5-1 (ITRC, 2012). The process is repeated for replicate samples. A GPS device will be used to delineate the corners of DUs, and coordinates will be recorded in the field records.

To assist with visual delineation of lanes, grids, and collection points, the cells or subareas markers will be placed at the corners and edges of the DU boundary, as well as within using pin-flags.

If the drainage patterns deviate from the schematic layout in Figures 3-2 and 3-5, the delineation of DUs/SUs will be adjusted, recorded in field notes, and documented photographically as described in Section 3.3.1.

#### *5.2.2.2 Initial ISM Sample*

Once the DU boundaries have been outlined, grids marked, and systematic sample locations determined, a minimum two-person field team will collect the increments. One team member will collect the increment using a flighted auger or coring tool, and the other will hold the sample container and record the necessary field notes. Increments will be collected from 0" to 6" following the systematic grid sampling method (ITRC 2012) as illustrated in Figure 5-1. Each increment collected will be approximately the same weight (Section 5.2.2). As increments are collected within a DU, they will be placed in a 2-gallon sealable bag. Once all increments have been collected, the incremental sample or ISM sample will be labeled and double bagged in double Ziplock bags to represent the DU analytical ISM surface soil sample. The total ISM sample weight should be 1 – 2 kg. In this WP, the first ISM sample collected from a DU will be referred to as the initial ISM sample.

#### *5.2.2.3 Replicate ISM Samples*

To collect triplicate samples for each DU, two additional replicate ISM samples will be collected. The replicates will also be collected following the systematic grid sampling within the DU's grid locations, but the location will be different from that used for the initial ISM sample as illustrated in Figure 5-2. The two replicate samples will each be made up of the same number of increments (i.e., 30) and collected using the same sampling pattern from within the same DU as the initial ISM sample. The replicate samples will be prepared and analyzed in the same manner as the initial sample.

### 5.2.3 Decontamination Procedures

Sampling equipment will be decontaminated, as outlined in the steps above in Section 5.2.2. Decontamination will be performed on 6 mil poly sheeting in an area of the site outside of the igloo/revetment sampling area that is considered to be free from site-related contamination. Sampling equipment will be decontaminated prior to sampling, using the following procedure:

- remove solid particles from core/auger tools with nylon brush,
- rinse with tap water,
- soak and wash with laboratory soap solution (Liquinox or Alconox),
- rinse thoroughly with tap water,
- rinse thoroughly with analyte-free water,
- air dry equipment by placing on large paper towels laid in back of SUV/truck, cover equipment with paper towels and a weight to ensure equipment remains free from dust particles; and
- wrap equipment in aluminum foil if the equipment is to be transported.

Sampling personnel will avoid contacting sampling equipment with the surrounding soils or unprotected hands. Decontaminated sampling equipment will be wiped free of potential dust using a dedicated Kimwipe™ (Kimtech Science™) prior to additional sampling. The laboratory will supply new/clean sample containers for each analysis sample. At a minimum, sample personnel will don new, laboratory-quality disposable gloves following decontamination of sampling equipment and prior to additional sample collection. New gloves may also be exchanged for current or donned at any time during sampling at the discretion of the sampler or other project staff.

#### 5.2.4 ISM Sample Collection at Igloo Exteriors

As discussed in Section 2.3, the exterior of six igloos were selected for further investigation: (1) K-1545; (2) A-979; (3) A-933; (4) A-946; (5) A-929 and (6) A-939. The two swales, one on each side of the igloo apron, will be divided into two DUs for a total for four DUs. If it is determined in the field at the time of sampling that transport across the road is possible (i.e., road is at a lower elevation than the swales), the road swale will be divided into three DUs for an overall maximum total of seven possible DUs at the igloo exterior (see Figure 3-2). Each DU sample will consist of 30 increments each. Increments of soil will be collected within the DU by systematic random sampling method, as demonstrated in Figure 5-1 and described in Section 5.2.2 and combined into a single ISM sample. Each DU will be sampled in triplicate for a total of three ISM samples per DU.

Sampling in triplicate will allow enough data points to calculate a 95UCL using Chebyshev and allow risk-based decisions to be made. This conservative approach, with a small sample size (i.e.,  $N = 3$ ), has a high probability that the 95UCL will exceed the maximum concentration. Section 6.0 discusses this possibility as well as other details of the data and statistical evaluations and how they will be handled.

Since the primary source/release area of contamination is the igloo drainpipes, the DUs furthest away from the igloo will be sampled first as they are presumed to have the lowest probable soil contamination levels. Sampling will begin with the road swale DUs if topography requires and will proceed to the apron swales. Since each of the two igloo drainpipes are considered a possible source/release point for COCs, two sets of sampling equipment will be used: one set of equipment for sampling the left side and one for the right of the igloo apron. Sampling for the apron swales will be in parallel. The two swale DUs closest to the road will be sampled first and then the two DUs closest to the igloo will be sampled. Furthermore, the DUs from the drainage swales will follow the drainage pattern, which may not coincide with being immediately adjacent to the igloo apron. If the change in drainage pattern results in a large swale area, other DUs will be added (Section 3.3.1).

Sample collection at the igloo exterior will follow the steps in the order below. If it is determined that the road swale needs to be sampled, sampling will begin with Step 1. If the road swale is not to be sampled, sampling will begin with Step 3.

- 1) Sampling will begin at the center DU (DU6) within the road swale (see Figure 3-2) and sampled in triplicate. Sampling equipment will be decontaminated. Proceed to Step 2.

- 2) Using two sets of sampling equipment will be used as the remaining two road swale DUs (i.e., drainage areas corresponding to the left and right apron swales; DU5 and DU7) are sampled in parallel. From this step on, sampling equipment will be dedicated to sampling the left or right side of the igloo apron. Each DU will be sampled in triplicate. Proceed to Step 3.
- 3) Using two sets of sampling equipment, one set dedicated for the left and one for the right side of the igloo apron, the swale DUs closest to the road (i.e., DU2 and DU4) will be sampled in parallel. Each DU will be sampled in triplicate. Proceed to Step 4.
- 4) Parallel sampling will continue to the two DUs closest to the igloo (i.e., DU1 and DU3) using the sampling equipment dedicated for the appropriate side of the igloo apron. Each DU will be sampled in triplicate. Proceed to Step 5.
- 5) Sampling equipment will be decontaminated prior to moving to the next igloo for sampling.

Steps 1-5 assume a swale configuration as presented in Figure 3-2. The topography and gradations of the site will be observed in the field prior to sampling and if topography warrants, sampling DUs will be adjusted. All adjustments, rationale and observations will be recorded in the field books, along with photographic evidence for the field logs.

#### 5.2.5 ISM Sample Collection at Revetments

As discussed in Section 2.3, six revetments were selected for further investigation: (1) Y-K-1536; (2) Y-B-1013; (3) Y-B-1035; (4) Y-K-1530; (5) Y-K-1539 and (6) Y-A-962. The revetment interior will be divided into four DUs. The revetment access ramp will be an additional DU for a total of five DUs. If it is determined in the field at the time of sampling that transport across the road is possible (i.e., road is at a lower elevation than the access ramp), the road swale will be divided into three DUs for an overall maximum total of eight possible DUs at the revetment (see Figure 3-5). Each DU sample will consist of 30 increments each. Increments of soil will be collected within the DU by systematic random sampling method, as demonstrated in Figure 5-1 and described in Section 5.2.2 and combined into a single ISM sample. Each DU will be sampled in triplicate for a total of three ISM samples per DU.

Sampling in triplicate will allow enough data points to calculate a 95UCL using Chebyshev and allow risk-based decisions to be made. This conservative approach, with a small sample size (i.e.,  $N = 3$ ), has a high probability that the 95UCL will exceed the maximum concentration. Section 6.0 discusses this possibility as well as other details of the data and statistical evaluations and how they will be handled.

Sample collection at the revetment exterior and then the revetment interior will follow the steps in the order below. If it is determined that the road swale needs to be sampled, sampling will begin with Step 1. If the road swale is not to be sampled, sampling will begin with Step 4.

- 1) Sampling will begin at the center DU (DU7) within the road swale (see Figure 3-5). Each DU will be sampled in triplicate. The sampling equipment will be decontaminated. Proceed to Step 2.
- 2) Sample DU8. Each DU will be sampled in triplicate. Proceed to Step 3.

- 3) Sample DU6. Each DU will be sampled in triplicate. Proceed to Step 4.
- 4) Sampling the revetment interior will begin at DU1. Each DU will be sampled in triplicate. Proceed to Step 5.
- 5) Sample DU 2. Each DU will be sampled in triplicate. Proceed to Step 6.
- 6) Sample DU 3. Each DU will be sampled in triplicate. Proceed to Step 7.
- 7) Sample DU 4. Each DU will be sampled in triplicate. Proceed to Step 8.
- 8) Sample DU 5. Each DU will be sampled in triplicate. Proceed to Step 9.
- 9) Sampling equipment will be decontaminated prior to moving to the next revetment for sampling.

Steps 1-3 assume a swale configuration as presented in Figure 3-5. The topography and gradations of the site will be observed in the field prior to sampling and if topography warrants, sampling DUs will be adjusted. All adjustments, rationale and observations will be recorded in the field books, along with photographic evidence for the field logs.

#### 5.2.6 Unmilled Quality Control Samples

As stated by Clausen et al. (2013), most commercial crushing or grinding mills/equipment possess working surfaces composed of metal alloys that can introduce metals contamination into a milled sample. This contamination may be significant when the milling equipment contains the same metals as the contaminants of interest in the environmental samples. This issue can be overcome by using non-metallic equipment (Clausen 2013), however, at the time of development of this work plan, there were no ELAP certified labs that perform ISM sample grinding/milling with an ELAP certified non-metallic grinding apparatus. To address potential introduction of metals into the ISM samples from grinding with a mill with metallic components, a QC sample will be collected by the lab from each replicate of the selected site characterization samples prior to milling. To avoid potential bias in the field, a systematic random approach will be used to assign a DU at each igloo and revetment to generate a QC sample, as outlined below.

The systematic random approach will assign DU1 at the first igloo sampled as the QC DU; DU2 will be the QC DU at the second igloo sampled, and so forth, so that the QC sample DUs simply reflect the location sampling order and are not assigned to a specific igloo or revetment. The following DUs have been assigned for the unmilled QC sample at each igloo and revetment:

- Igloo 1- DU1
- Igloo 2- DU2
- Igloo 3- DU3
- Igloo 4- DU4
- Igloo 5- DU5 (if collected) or DU1
- Igloo 6- DU6 (if collected) or DU2
- Revetment 1- DU1
- Revetment 2- DU2



- Revetment 3- DU3
- Revetment 4- DU4
- Revetment 5- DU5
- Revetment 6- DU6 (if collected) or DU1

ISM sample homogenization and subsampling will be conducted at, and by, the laboratory.

#### 5.2.7 Sample Homogenization and Subsampling

To avoid segregation, settling or other sample matrix effects that can arise from manual field homogenization (ITRC, 2012, 2020), samples will be collected and shipped to the laboratory for processing. Sufficient sample volume for supplemental analyses will be removed prior to the start of the ISM sample processing. The laboratory will then prepare and process samples in accordance with Method 8330 and the ITRC guidance (2012, 2020), with the exception that unmilled samples will be collected immediately prior to the bulk of the sample being subjected to milling for analyses.

This sequence allows for supplemental parameters to be collected from samples more representative of the matrix under field conditions, but also isolates the milling component of the process for the chemical analysis.

It is expected that 2 kg of material will need to be collected to allow for chemical and physical characterization, but this sample volume will be confirmed with the laboratory prior to field mobilization.

#### 5.2.8 Field Quality Control Sample Collection

To obtain analytical data of sufficient quality to allow for meaningful decisions to be made regarding project objectives, specific procedures will be followed for the evaluation of data quality. These procedures and requirements for their evaluation are described in this section.

Evaluation of ISM field sampling procedures accuracy and precision will be completed through the collection and evaluation of field QC samples. Table 5-1 provides a summarized description of the planned QC samples for this project. To aid in the evaluation of quality and usability of collected analytical data, field QC samples will be collected during the field work. Types of samples and collection frequencies for QC samples are discussed in the following subsections.

##### 5.2.8.1 Equipment Blank

Equipment blanks are samples consisting of analyte-free water collected from a final rinse of sampling equipment after the decontamination procedures have been performed. The purpose of equipment blanks is to measure the effectiveness of the decontamination process and materials storage/handling protocols. By analyzing equipment blanks, the potential for cross-contamination of samples by the sampling equipment may be evaluated. Equipment blanks will be collected at one sample per igloo and revetment, based on the professional judgment of the field team leader and conditions observed in the field. Personnel will collect equipment blanks by pouring laboratory-grade deionized water over the



decontaminated sampling equipment into laboratory-provided sampling containers. If disposable equipment is used, no equipment blanks will be collected.

#### 5.2.8.2 Field Blank

A field blank is a sample of the water used for equipment blanks (described above). This water will be obtained from the analytical laboratory and will consist of HPLC-grade laboratory blank water. Analytical data concerning this source water will be obtained and provided prior to the commencement of fieldwork. One field blank sample will be collected from each batch of laboratory blank water at the time of first use.

#### 5.2.8.3 Field Duplicate

A standard field duplicate sample will not be collected for field QC as is typically collected when discrete sampling is done. Instead, ISM samples will be collected in triplicate from each DU as discussed in Section 5.2.2.3 to quantify the field precision of samples from the same DU (ITRC 2020).

### 5.2.9 Sample Documentation

All sample information and field sampling will be recorded and logged in bound field notebooks. The record of sampling information will include sample name, sample number, sample location, date/time, sampler's name, the type of sample, the sampling method, and observations pertinent to sampling.

To be consistent with past FWDA sampling efforts and FWDA protocol, each discrete sample identification (ID) number will consist of a combination of:

- Parcel number
- AOC/SWMU number
- Site identifier(s)
- Source of sample
- Depth of sample
- Type of sample
- Decision unit number (1 of 4 to 7 decision units for igloos, 1 of 5 to 8 decision units for revetments)
- Replicate number (1 of 3)
- Milled (M) or Unmilled (UM)

#### Example:

Parcel	25
AOC	18
Site identifier	A-959 or Y-A-959 (Igloo Block A number 959; Revetment in Igloo Block A, number 959)
Source of sample	SS (surface soil)
Depth of sample	0"-6"
Type of sample	IS (incremental sample)
Decision unit number	01
Replicate number	R1

Milled

M

Incremental soil sample example: 25-18-A-959-SS0-6IS-01R1-M

For quality assurance/quality control (QA/QC) samples, the sample matrix portion of the ID will be changed. Acceptable QA/QC sample matrices are EB for equipment blank, and MSMSD for matrix spike/matrix spike duplicate (MS/MSD). The sample ID may also be shortened if it is not associated with a specific soil sample. Examples are provided below.

Incremental soil QC sample – equipment blank example: 25-18-A-959-SS0-6IS-01R3-30-EB

Incremental soil QC sample – unmilled example: 25-18-A-959-SS0-6IS-01R1-UM

A summary of all ISM samples to be collected, including sample ID and analyses, can be found in Tables 5-2A – 5-2F for igloos and Tables 5-3A – 5-3F for revetments.

#### 5.2.10 Sample Collection and Storage

The collected increments of soil will be combined in a 2-gallon sealable bag in the field. A double layer of large Ziploc® plastic bags (since they are shipped in coolers with ice) is suitable for this mixed soil. Immediately upon collection, the sample container will be labelled with indelible waterproof ink, placed into a cooler with ice and cooled to less than or equal to 6 degrees centigrade (°C) prior to shipping the sample overnight to the analytical laboratory (Agriculture & Priority Pollutants Labs (APPL), 908 N. Temperance Ave, Clovis, CA 93611). The samples will be analyzed for RCRA 8 metals by USEPA Method 6020A and explosives by USEPA Method 8330B (Table 5-4) on a standard turnaround basis by a DoD Environmental Laboratory Accreditation Program (ELAP) certified analytical laboratory that is certified in these methods for the soil matrix.

#### 5.2.11 Sample Transport and Chain-of-Custody

All samples will be shipped overnight to the laboratory. Discussion with the laboratory, including applicable holding times will determine the exact shipping schedule. If needed, samples can be shipped at the conclusion of each workday at the local shipping facility in Gallup, New Mexico (7 miles west of FWDA). Soil samples will be stored in a cooler on ice. Prior to and during shipment, samples will be stored according to the appropriate USEPA method. Samples will be treated as environmental samples, shipped in heavy duty coolers, packed to prevent breakage of materials, and ice to preserve samples. Each shipment will also contain the corresponding replicates, field blanks, and equipment blanks, held to the same standards.

Chains of Custody (CoCs) will be used to track the sample from the site to the laboratory. At all times, completed CoC forms will accompany each cooler of samples. Information provided on the CoC will include:

- Sample ID (as described in Section 5.2.9)

- Date/time of collection
- Sample type
- Location of collection
- Collection personnel
- Requested analyses
- Shipment date
- Signatures of those in possession of the sample.

CoC forms will be sealed in bags, secured inside of the cooler, and accompany all samples shipped to the analytical laboratory to provide sample possession and receipt information. A separate copy of the CoCs will be retained at the project field office to be included in the project files. In addition to the CoCs, the sample IDs, date and time collected, collection location, and analysis requested will also be documented in the field logbooks.

#### 5.2.12 Investigation Derived Waste

Investigation derived waste (IDW) may include PPE, solid waste, and decontamination water. Non-hazardous IDW such as decontamination fluids from the washing and rinsing of sampling equipment will be drummed, transported, and disposed of properly. It is expected that solid IDW (e.g., PPE, paper towels and other disposable waste generated) will be collected separately in trash bags and disposed of as municipal solid waste. The work conducted in this Work Plan is not expected to generate hazardous waste based on previous site knowledge and knowledge of similar type of work at other locations.

### 5.3 Deviations from Work Plan

All deviations from the procedures outlined in the main body of this Work Plan or its appendices will be documented. The effect the deviation is expected to have on the data, if any, will also be documented. If amenable to photographic documentation, deviations, will be documented photographically as well as in writing in the field notes. Such deviations and the evaluation of them will be included in the final report.

## 6.0 Laboratory Approach

The most recently published versions of SW-846 methods with FWDA project-specific reporting limits will be used to provide quantitative analytical data to meet the FWDA RCRA permit requirements (NMED 2005, revised 2015). The laboratory performing sample analyses will follow the current version of the U.S. Department of Defense (DoD) Environmental Field Sampling Handbook, Revision 1.0 (DoD 2013) and the current version of the QSM (DoD/DOE 2021). All laboratory analysis will be performed by independent analytical laboratories with DoD Environmental Laboratory Accreditation Program (ELAP) accreditation. In addition to DoD ELAP accreditation, the laboratory must hold current accreditation for all testing needed for this study in New Mexico. The independent analytical laboratory must have documentation of current accreditation/certification (Appendix F) prior to the field work portion of the study commencing

and sample acceptance. The analytical results will be validated in accordance with the most recent version of the QSM at the time of validation.

## 6.1 Laboratory Quality Control

To obtain analytical data of sufficient quality to allow for meaningful decisions to be made regarding project objectives, specific procedures will be followed for the evaluation of data quality. These procedures and requirements for their evaluation are described in this section.

Evaluation of laboratory equipment accuracy and precision will be completed through the collection and evaluation of analytical laboratory QC samples. Summarized below is a description of the planned laboratory QC samples for this project. The following laboratory QC program must include, but not be limited to:

- a) Method Blanks: Shall be performed at a frequency of one per batch of samples, per matrix type, per sample extraction or preparation method
- b) Laboratory Control Samples: Shall be analyzed at a minimum of one per batch of 20 or less samples per matrix type, per sample extraction or preparation method, except for analytes for which spiking solutions are not available
- c) Matrix Spikes (MS)/Matrix Spike Duplicates (MSDs): Will be performed ON PROJECT MATERIAL AND NOT LABORATORY SAMPLES UNRELATED TO THE SITE at a frequency of one per batch of 20 or less samples per matrix type, per sample extraction or preparation method, except for analytes for which spiking solutions are not available. The spike concentration shall be no greater than 25% to 50% of the maximum concentration along the linear segment of the instrument calibration curve for any analyte
- d) Surrogates: Surrogate compounds must be added to all samples, standards, and blanks for all organic chromatography methods except when the matrix precludes its use or when a surrogate is not available
- e) Field Equipment Blanks: Analysis shall be performed at a frequency of one per igloo and revetment
- f) Instrument Performance: Calibration of instrumentation and performance of periodic instrument checks according to the manufacturer and USEPA recommendations, and appropriate laboratory SOPs
- g) Laboratory Performance Evaluation: Participation in performance evaluation and method studies available from USEPA is required for the laboratory. Performance evaluation under such a program is to be conducted, at least, on a semiannual basis
- h) Laboratory Contamination: Each new shipment or lot of solvent, reagent or adsorbent will be evaluated for purity in accordance with appropriate SOPs
- i) Laboratory Standards: Laboratory standards will be prepared and verified in accordance with appropriate laboratory SOPs
- j) QC Limits: Calculation of QC limits and preparation of control charts will be performed in accordance with appropriate laboratory SOPs

- k) Deviations: Out of control events, dilutions, or outlier data, will be noted and corrective action will be taken in accordance with appropriate laboratory SOPs. The laboratory will communicate any deviations to the sponsor within 48 hours so that corrective actions can be evaluated and initiated if appropriate.

Documentation of all quality control activities performed specifically in conjunction with this project will be furnished along with sample results. Copies of all raw data, lab notes, chromatograms, standard curves, etc., shall be furnished upon request. The laboratory will provide a case narrative of the analyses and any deviations or out of specification events that took place during the analyses for each sample delivery group.

## 6.2 Data Quality Assessment and Usability Evaluation

Field QA/QC samples and laboratory QA/QC samples are collected and analyzed to assess the data's quality and usability. The parameters that will be used to specify data quality requirements and to evaluate the analytical system performance are precision, accuracy, representativeness, completeness, and comparability (PARCC). These parameters are defined below:

- Precision - a measure of the reproducibility of measurements under a given set of conditions.
- Accuracy - a measure of the bias that exists in a measurement system.
- Representativeness - the degree to which sample data accurately and precisely represent selected characteristics.
- Completeness - a measure of the amount of valid data obtained from the measurement system compared to the amount that is required.
- Comparability - a measure of confidence with which one data set can be compared with another.

Each of these will be evaluated on a project specific basis in the final report. In addition to PARCC, the following subsections discuss sensitivity and data validation and usability to fully assess the data quality.

### 6.2.1 Sensitivity

Sensitivity is the ability of the method or instrument to detect the contaminant of concern and other target compounds at the level of interest. Appropriate sampling and analytical methods were selected that have QC acceptance limits that support the achievement of established performance criteria. Assessment of analytical sensitivity will require thorough data validation. A comparison of the PALs for igloos and revetments to laboratory reporting limits are provided in Tables 6-1A and 6-1B, respectively.

Detection and quantitation limits are laboratory specific. To document measurement uncertainty for low concentration data (DoD 2017b), the laboratory must provide:

- Project-specific RLs, including precision and bias, for each analyte and matrix, as well as its detection limit (DL), limit of detection (LOD), and limit of quantitation (LOQ), as defined below,

with associated precision and bias for each target analyte in each matrix of concern (e.g., reagent water, clean sand, etc.) and verify that these values meet project-specific RLs.

- Laboratory SOPs for establishing the DL and for establishing and verifying the LOD and LOQ.
- Verification of the LOD by processing an LOD verification check sample with each batch of samples (i.e., a quality control sample that is spiked at a concentration at or slightly above the LOD to evaluate whether the analyte of interest is in fact “detectable” in the matrix of interest).
- Set the reporting for non-detects to the LOD with a “U” flag, to accurately report non-detects.
- Verify the LOQ in the project-specific matrix by analyzing a minimum of four replicate samples with known concentrations at the LOQ when the project involves the collection of unusual or difficult matrices, or if the project-specific RL is near the LOQ.
- Review low concentration raw data (e.g., chromatograms). If a result is reported above the DL, make sure that the signal-to-noise ratio is at least 3.
- Compare sample result with blank results. If sample results (including chromatograms) cannot be distinguished from blank results, the data may not be useable for decision.

The following definitions for DL, LOD, and LOQ are taken the DoD Environmental Data Quality Workgroup Factsheet (2017):

- The DL is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration with 99% confidence.
- The LOD is defined as the lowest concentration for reliable reporting of a non-detect of a specific analyte in a specific matrix with a specific method at 99% confidence.
- The LOQ is the smallest concentration that produces a quantitative result with known and recorded precision and bias.

Quantitative results, with a known degree of precision and bias, can only be achieved at or above the LOQ. Detections between the DL and the LOQ assure the presence of the analyte. Their numeric values are estimates and therefore will be indicated as such in test reports (DoD 2017b).

For more complete descriptions of the above information, the DoD factsheet is provided online (DoD 2017b).

## 6.2.2 Data Validation and Useability Determination

### 6.2.1 Data Validation

Personnel involved in data validation will be independent of any data generation effort. The project chemist will be responsible for the oversight of data validation following the hierarchy listed below or the current guidance at the time of completion of field work.

- 1) Latest version of *DoD-QSM* (DoD/DOE 2021)
- 2) *EDQW General Data Validation Guidelines* (DoD 2019)
- 3) *USACE’s Guidance for Evaluating Performance-Based Chemical Data* (USACE 2005)

Data validation will be performed when the data packages are received from the laboratory. All (100%) of the data from field samples will undergo Stage 2b data validation with an additional 10% reviewed manually back to Stage 3 and/or 4 data validation, depending on the analytical method. The following items will be addressed in the data validation report:

- A review of the data set narrative to identify any issues that the lab reported in the data deliverable.
- A check of sample integrity (sample collection, preservation, and holding times).
- An evaluation of basic QC measurements used to assess the accuracy, precision, and representativeness of data, including QC blanks, laboratory control samples (LCSs), MS/MSDs, surrogate recovery when applicable, and field or laboratory duplicate results.
- A review of sample results, target compound lists, and detection limits to verify that project analytical requirements are met.
- Initiation of corrective actions, as necessary, based on the data review findings.
- Qualification of the data using appropriate qualifier flags, as necessary, to reflect data usability limitations as determined by the risk assessor.
- Qualifier flags, if required, will be applied to the electronic sample results. If multiple flags are required for a result, the most severe flag will be applied to the electronic result. The hierarchy of flags from the most severe to the least severe will be as follows: X, NJ, UJ, U, and J.
- Any data quality issues will be brought to the attention of the project chemist.

#### 6.2.2 *Data Usability*

Limitations on data usability will be determined and assigned by the risk assessor, if appropriate, as a result of the validation process described earlier. If any data limitations are determined, they will be discussed in the uncertainty section of the final report. The results of the data validation will be discussed in a separate report so that overall data quality can be verified through the precision, accuracy, representativeness, comparability, and completeness (PARCC) of sample results (Section 6.2).

### 6.3 Laboratory-Specific LOQs/LODs/DLs

This section, along with Tables 6-1A and 6-1B, presents the achievable laboratory limits including limits of quantitation (LOQs), limits of detection (LODs), and detection limits (DLs) to determine if laboratory limits will meet SSLs for human health and ecological receptors.

To meet measurement quality objectives (MQOs) (USEPA 2002) for sensitivity, the LODs for non-detects and LOQs for detects will be below the PALs. The PALs have been set at the lowest screening value out of the values for both human and ecological receptors for each analyte. SW-846 methods have been selected to achieve PALs in this work plan and example DLs, LODs, and LOQs are included in Tables 6-1A and 6-1B.

Matrix effects or necessary dilutions may affect the laboratory limits reported for project samples. Should this occur, the laboratory will take steps to improve the analyses. A discussion of this will be presented in the uncertainty section of the risk assessment in the final report. If sample interferences cannot be cleaned up, lines of evidence will be applied to support risk and remedial decisions, however, methods will be selected prior to going into the field to meet all PALs (Tables 6-1A and 6-1B).

## 6.4 Surface Soil Analyses

The following sections discuss chemical analyses (Section 6.4.1) and supplemental parameters (Section 6.4.2) for ISM surface soil samples. Analyses values will be expressed as 95UCLs using the Chebyshev equation as described in Section 6.4.3.

### 6.4.1 Chemical Analyses

Each ISM surface soil replicate sample will be processed in the lab according to Method 8330 and ITRC guidance (2012, 2020) and will be analyzed for the following COCs (Section 3.1.2): arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, 1,3,5-trinitrobenzene, 3,5-dinitroaniline, 1,3-dinitrobenzene, 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, RDX, nitrobenzene, nitroglycerin, m-nitrotoluene, o-nitrotoluene, p-nitrotoluene, PETN, and Tetryl. RCRA 8 metals will be analyzed by USEPA Method 6020 and explosives by USEPA Method 8330B with standard turnaround time.

Each unmilled QC replicate sample (Section 5.2.6) will not be milled by the lab and will be analyzed for RCRA 8 metals only.

All analyses shall be performed by Agriculture & Priority Pollutants Labs (APPL) (908 N. Temperance Avenue, Clovis, CA 93611) within the holding period described in Table 5-4. Each ISM surface soil sample will undergo analyses, and the results will be summarized in tabular format and discussed in the final report. Chemical parameters along with required LODs, LOQs, and analytical methods are summarized in Tables 6-1A and 6-1B. Detected and non-detected analytes along with any qualifiers, as applicable, will be reported as numerical values in the laboratory deliverable.

### 6.4.2 Supplemental Parameters

In addition to the chemical analyses listed in Section 6.4.1, supplemental parameters will be determined from soil samples segregated from the bulk sample prior to sample processing. The following supplemental parameters will be analyzed for the following: total organic carbon (TOC) by Lloyd Khan



method (three burns), soil pH by method USEPA SW-846 9045D, particle size distribution by method ASTM D422 including sieve and hydrometer for fines, and cation exchange capacity (CEC) by USDA No. 60.

Results will be reported as numerical values in the laboratory deliverable in tabular format and discussed in the report. TOC will be reported as the mean of all burn replicates per sample.

#### 6.4.3 Calculating 95% Upper Confidence Limit of the Mean Based on the Chebyshev Inequality

Variability and errors in estimates of the mean exist, therefore, a 95UCL will be calculated to represent the concentration term (ITRC 2012). In risk assessment, an exposure point concentration (EPC) is typically based on a 95UCL so that risk-based decisions are protective of human health and the environment. The purpose of a 95UCL calculation is to provide an estimate of the population mean, or  $\mu$ , from a single investigation, so that an underestimation of the long-term average exposure is unlikely (ITRC 2020). The UCL can be thought of as a measure of the confidence in the estimate of the “grand mean,” or the measure of centrality of the means given by replicate samples. Two candidate UCL equations that can accommodate ISM data sets which are expected to “bracket” the range of UCLs that may be calculated from a data set, are the Student’s-t (representing the low end of the range) and Chebyshev (representing the high end of the range) (ITRC 2012).

For the purpose of this evaluation, the Chebyshev equation (Equation 1) will be used for calculating the 95UCL. The following equation will be used to calculate the one-sided  $(1-\alpha)$  100% UCL using the Chebyshev approach:

$$UCL = \bar{x} + \left( \sqrt{(1/\alpha) - 1} \right) \times \frac{SD}{\sqrt{r}}$$

[ITRC V.2 Equation 3-2 (2020)]

where:

$\bar{x}$  = arithmetic mean of all ISM samples

$SD$  = standard deviation of all ISM samples

$\alpha$  = specified statistical significance level

$r$  = number of ISM samples

The ITRC ISM Team has developed an ISM 95UCL Calculator that will be used to calculate the Chebyshev 95UCL using the results of three replicate field samples, as well as the number of increments (i.e., 30) per sample. The Chebyshev method is a viable option to calculate the 95UCL because it reduces the chance the 95UCL will underestimate the population mean (ITRC 2020). The Chebyshev is generally considered to be a conservative estimate of the UCL because it generally achieves or exceeds the desired coverage rates, even for non-normal distributions (ITRC 2012).

##### 6.4.3.1 Metals Concentrations in Milled and Unmilled Samples

The 95UCL will also be calculated for unmilled ISM samples using the Chebyshev method as outlined above. The 95UCLs for the unmilled samples will be evaluated and compared to the milled ISM samples

for RCRA 8 metals. This evaluation and comparison will be discussed using lines-of-evidence (LOE) in the final report.

## 7.0 Nature and Extent Evaluation Approach

Part of this study is being conducted to characterize the nature and extent of RCRA 8 metals and explosives in surface soil. The sampling approach for this WP is designed to detect concentration gradients, should they exist within the study areas exterior to each igloo and revetment. Nature and extent as well as concentration gradient that could be indicative of migration of a release will be accomplished through the systematic planning and DU design, as presented in Section 3.3. The data collected will be used to interpret if there has been a release of contamination, and if so, if migration has occurred and what concentrations of COCs are present.

To define the nature and extent of contaminants, the 95UCL of the data will be calculated (Section 6.4.3) for each soil DU based upon the results of the triplicate samples collected. The calculated 95UCL for each DU will be compared to 95UCLs from other DUs at the igloo or revetment to discern if a past release has occurred and what, if any, spatial patterns may be present that would map the migration of a release to support the nature and extent evaluation.

## 8.0 Risk Assessment Evaluation Approach

This section describes how the data collected in this field effort will be evaluated and interpreted and includes the following subsections: Guidance (Section 8.1), Risk Assessment Evaluation Overview (Section 8.2), project action limits (PALs) (Section 8.2.1), Human Health SSLs (Section 8.2.2), Ecological SSLs (Section 8.2.3), Calculating Cumulative Risk (Section 8.3), and Screening Refinements (Section 8.4)

### 8.1 Guidance

All data generated in this study will be related to the soil matrix. The risk/hazard-based screening levels have been determined in accordance with the FWDA soil cleanup levels as defined by the FWDA RCRA Permit USEPA ID No. NM6213820974 Attachment 7 (December 2005, revised April 2015). All applicable human health risk-based screening values used will be in accordance with the current NMED soil screening level (SSL) per the NMED Risk Assessment Guidance (RAG) for Site Investigations and Remediation, Volume 1 (V.1) Soil Screening Guidance for Human Health Risk Assessments (NMED 2022). The ecological risk-based screening values that will be used for screening data in this study will be in accordance with the current criteria per the NMED RAG for Site Investigations and Remediation, Volume 2 (V.2) Soil Screening Guidance for Ecological Risk Assessments (NMED 2017, revised).

### 8.2 Risk Screening Evaluation Overview

As discussed in detail in the following sections, the risk screening evaluation will follow the steps below:

- 1) If no analytes are detected in any SU triplicate analyses, no risk evaluation will be required, since all results will be recorded at the LOD, qualified “U” and all LODs are less than the project action limits (PALs) (Tables 6-1A and 6-1B and Section 8.2.1) (DoD 2017b).
- 2) If there are detections, the Chebyshev 95UCL will be calculated for each SU and an area weighted EPC average calculated for the EU. The area weighted EPC average will first be screened against the project action limits (PALs) (Section 8.2.1).
- 3) If the PAL is not exceeded, risk screening is complete and cumulative risk will be calculated for human health and ecological risk using the concentrations of the detected COCs (Section 8.3).
- 4) If the PAL is exceeded, the risk evaluation will proceed to comparing the 95UCL(s) to the SSL(s) for individual human (residential SSL, cancer and noncancer endpoints) and ecological (plants and deer mouse, as applicable) receptors.
- 5) If the 95UCL does not exceed the individual receptor SSL(s), risk screening is complete for that analyte and cumulative risk will be calculated for human health and ecological risk using the detected COCs (Section 8.3).
- 6) If the 95UCL exceeds the individual receptor SSL(s), risk is noted for that analyte and receptor, and refinements to the risk screening prior to calculating cumulative risk will be considered as discussed in Section 8.4.

Section 8.2.1 below discusses the determination of the PALs used for the first step in the risk screening evaluation. Sections 8.2.2 and 8.2.3 define the individual human health and ecological SSLs used to determine the PALs. Section 8.3 discusses calculating cumulative risk, and risk refinements are discussed in Section 8.4.

### 8.2.1 Defining Project Action Limits

Project action limits were assigned for each of the twenty-five (25) COCs identified in this WP to ensure selected analytical methods are sensitive enough to meet the lowest screening criteria. The igloo PALs were selected for each analyte by choosing the lowest screening value between human health (residential cancer and noncancer) and ecological (plants, Tier 1) receptors as described below in Sections 8.2.2 (human health) and 8.2.3 (ecological). The revetment PALs were selected for each analyte by choosing the lowest screening value between human health (residential cancer and noncancer) and ecological (plants and deer mouse, Tier 1) receptors as described below. To meet measurement quality objectives (MQOs) for sensitivity, the LODs for non-detects and LOQs for detects will be below the PALs as discussed in Section 6.3. The selected igloo PALs are summarized in Table 6-1A and revetment PALs in Table 6-1B.

### 8.2.2 Human Health Soil Screening Levels

NMED guidance allows for evaluation of residential, construction and commercial/industrial workers at a site. At FWDA, site-specific reasonably anticipated current or future use (USEPA 2000) for human receptors at the igloos and revetments is for activities associated with commercial storage of materials (Figure 3-7, Section 3.3.1.2). However, NMED has requested that chemical concentrations be screened

against the more conservative and restrictive residential standards. Consequently, this document uses the commercial/industrial exposure patterns around the igloo exteriors and revetments for sampling design and collection but screens the chemical analyses against the more conservative residential standards, per NMED request. The hierarchy outlined below in Section 8.2.1.1 was used to determine the risk/hazard-based screening level for explosives and RCRA 8 metals except lead. In accordance with NMED guidance, lead was evaluated separately as described below in Section 8.2.1.2. The NMED human health SSLs are based on a 1E-05 target risk for carcinogens and a hazard quotient of 1.0 for noncarcinogens.

The human health SSLs for the residential receptor, cancer and noncancer, are summarized in Tables 8-1A (igloos) and Table 8-1B (revetments).

#### *8.2.1.1 Explosives and RCRA 8 Metals (except lead)*

The current NMED SSL per the NMED Risk Assessment Guidance (RAG) for Site Investigations and Remediation, Volume 1 Soil Screening Guidance for Human Health Risk Assessments (June 2022) will be used for screening explosives and RCRA 8 metals except lead in surface soil for human health. In instances where an individual analyte has the capacity to elicit both cancer and noncancer responses, the lower of the two values will be selected for screening purposes.

If an NMED SSL has not been established, the most recent USEPA Regional Screening Level (RSL) (May 2022 or in effect at the time the field sampling is completed (NMED 2018) for residential soil will be used. USEPA RSLs based on a cancer endpoint of 1E-06 have been adjusted to a cancer risk of 1E-05 to be consistent with NMED guidance (NMED 2022).

Following the steps above, all 17 explosives and 7 RCRA metals (arsenic, barium, cadmium, chromium, mercury, selenium, and silver) for this work plan have a human health SSL, as summarized in Tables 8-1A and 8-1B. Lead is evaluated separately as described below.

#### *8.2.1.2 Lead*

As stated in the NMED guidance (NMED 2022), a NMED SSL was not calculated for lead; NMED adopted the USEPA RSL. USEPA's lead assessment workgroup has recommended the use of the IEUBK model that relates measured lead concentrations in environmental media with an estimated blood-lead level for assessing risks to residential receptors (USEPA 2016h). The model is used to calculate a blood lead level in children when evaluating residential land use and in adults (based on a pregnant mother's capacity to contribute to fetal blood lead levels). However, USEPA recommends the use of the Adult Lead Methodology (ALM) for adults in evaluating occupational scenarios at sites where access by children is reliably restricted (USEPA 2016h). The NMED SSLs include default values for lead that were calculated by using the USEPA methodologies to back calculate a soil concentration for each receptor that would not result in an estimated blood-lead concentration of 10 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ) or greater (residential adult of 400 mg/kg and industrial and construction worker of 800 mg/kg) (NMED 2022). Per NMED request, the residential screening value of 400 mg/kg will be used in this evaluation.

### 8.2.3 Ecological Soil Screening Levels

The ecological receptors retained for this evaluation are plants only for igloos, and plants and the deer mouse only for revetments (Section 3.1.4.2). Ecological screening levels for igloo exteriors and revetments are discussed below in Sections 8.2.3.1 and 8.2.3.2, respectively.

#### *8.2.3.1 Ecological Soil Screening Levels - Igloos*

For igloo exteriors, ecological SSLs selected to evaluate RCRA 8 metals (except total chromium) and explosives are the Plants Tier I Effect Concentration no observed adverse effects level (NOAEL) from the NMED RAG, V.2 (2017, revised), as summarized in Tables 8-1A and 8-1B.

The plant community will be evaluated quantitatively and evaluated as a whole. Specific species of plants will not be evaluated separately. The plant community provides a necessary food source directly or indirectly through the food web for wildlife receptors (NMED 2017).

Based on NMED RAG, V2 (NMED 2017, revised), nine explosive analytes do not have a Tier 1 NOAEL for plants. Therefore, surrogates were selected for explosive analytes without ecological screening criteria (see Tables 8-1A). Table 8-2 explains the rationale for the surrogate selection and any safety factors applied in the derivation of surrogate criteria.

The NMED RAG, V.2 (2017, revised) does not provide a total chromium screening level for plants because total chromium is naturally abundant and not water soluble. If the initial screening shows total chromium to be above background, the analyte further evaluated using a lines of evidence approach.

#### *8.2.3.2 Ecological Soil Screening Levels - Revetments*

For revetments, ecological SSLs selected to evaluate RCRA 8 metals and explosives are the Plants Tier I Effect Concentration No Observed Adverse Effects Level (NOAEL) and the deer mouse Tier 1 SL from the NMED RAG, V.2 (NMED 2017, revised), as summarized in Tables 8-1A and 8-1B. The plant community will be evaluated quantitatively. The plant community will be evaluated quantitatively and evaluated as a whole. Specific species of plants will not be evaluated separately. The plant community provides a necessary food source directly or indirectly through the food web for wildlife receptors (NMED 2017).

Based on NMED RAG, V.2 (NMED 2017, revised), one explosive analyte (3,5-dinitroaniline) does not have a NMED assigned Tier 1 criteria for plants or the deer mouse, and nine explosive analytes do not have a Tier 1 NOAEL for plants. Therefore, surrogates were selected for explosive analytes without ecological screening criteria (see Tables 8-1A and 8-1B). Table 8-2 explains the rationale for the surrogate selection and any safety factors applied in the derivation of surrogate criteria.

The NMED RAG, V.2 (2017, revised) does not provide a total chromium screening level for plants, however, one is provided for the deer mouse. For plants, If the initial screening shows total chromium to be above background, the analyte will be further evaluated using a lines of evidence approach.

### 8.3 Calculating Cumulative Risk

If detections do not exceed SSLs, then cumulative risk will be calculated as outlined in this section. If detections exceed SSLs, screening refinements will be made as explained in Section 8.4 prior to calculating cumulative risk as the final step. The steps outlined below in Sections 8.3.1 and 8.3.2 will be followed for calculating cumulative risk for human health and ecological receptors, respectively. Analytes that are reported at the LOQ, “U” qualified, and have no QC issues will be considered to not be COCs at that location and will not be included in the cumulative risk calculations.

#### 8.3.1 Human Health Cumulative Risk

The procedure below will be followed for calculating each igloo and revetment’s cancer risk and noncancer hazard index (HI) for explosives and RCRA 8 metals (except lead). In accordance with NMED RAG, V.1 (June 2022), lead will be evaluated separately and not included in the HI for human health.

- 1) Each detected analyte concentration will be divided by the SSL concentration for that analyte to achieve a concentration ratio for each analyte following the equation below (NMED 2022).

$$\text{Concentration Ratio} = \left( \frac{\text{conc}_x}{\text{SSL}_x} \right)$$

[Equation 1 derived from Section 5.0 of NMED RAG, V.1 (June 2022)]

Where:

conc<sub>x</sub> = soil concentration; area weighted 95UCL of EU will be used

SSL = soil screening level

- 2) For carcinogens, the site risk is calculated by multiplying the sum of the concentration ratios (step 1) for cancer risk analytes by the NMED target risk level of 1E-05 following the equation below (NMED 2022).

$$\text{Site Risk} = \left( \frac{\text{conc}_x}{\text{SSL}_x} + \frac{\text{conc}_y}{\text{SSL}_y} + \frac{\text{conc}_z}{\text{SSL}_z} + \dots + \frac{\text{conc}_i}{\text{SSL}_i} \right) \times 10^{-5}$$

[NMED HH Equation 59 (June 2022)]

- 3) For noncarcinogens, the site HI is calculated by multiplying the sum of the concentration ratios (step 1), or HQs, for noncarcinogenic analytes by the NMED target hazard of 1.0 following the equation below (NMED 2022).

$$\text{HI} = \left( \frac{\text{conc}_x}{\text{SSL}_x} + \frac{\text{conc}_y}{\text{SSL}_y} + \frac{\text{conc}_z}{\text{SSL}_z} + \dots + \frac{\text{conc}_i}{\text{SSL}_i} \right) \times 1$$

[NMED HH Equation 60 (June 2022)]

- 4) For analytes that exhibit both carcinogenic and noncarcinogenic toxicity, both cancer risks and noncancer hazard indices will be calculated.
- 5) If resulting cancer risk is less than 1E-05 (Step 2), concentrations at the site are unlikely to result in adverse health impacts and no additional assessment for carcinogens will be required.
- 6) If the resulting Hazard Index (HI) is less than 1.0 (Step 3), concentrations at the site are unlikely to result in adverse health impacts and no additional assessment for noncarcinogens will be required.
- 7) If the process in Step 2 results in adverse risk at any igloo exterior or revetment, refined exposure point concentrations (EPCs) will be calculated and a lines-of-evidence (LOE) approach provided, as discussed below in Section 8.4.1.
- 8) If the process in Step 3 results in adverse hazard at any igloo exterior or revetment, a target organ system evaluation will be completed to evaluate additive health effects, as well as a lines-of-evidence (LOE) approach provided, as discussed below in Section 8.4.1.

### 8.3.2 Ecological Cumulative Risk

For plants, the Tier 1 screening level hazard quotients will be calculated by comparing exposure doses (i.e., 95UCL of the EU) to an effect concentration (i.e., NOAEL for Tier 1). The equation for screening level hazard quotient (SLHQ) for plants is shown below (NMED 2017, revised).

$$SLHQ = \frac{C_s}{NOAEL}$$

[NMED Eco Equation 6 (March 2017, revised)]

where:

SLHQ = screening level hazard quotient (unitless)

$C_s$  = chemical concentration in soil (mg/kg); area weighted 95UCL of EU will be used

NOAEL = no observed adverse effects level (NMED 2017, revised)

Tier 1 SLHQs for the deer mouse will be calculated by comparing exposure doses to the ESL. The derivation of SLHQ for the deer mouse is shown below.

$$SLHQ = \frac{Dose}{TRV}$$

[NMED Eco Equation 7 (March 2017, revised)]

where:

SLHQ = screening level hazard quotient (unitless)

$C_s$  = chemical concentration in soil (mg/kg)

ESL = ecological screening level (NMED 2017, revised)

SLHQs will be calculated for plants and the deer mouse (as appropriate) for each detected analyte and cumulative risk will be evaluated. The overall HI will be calculated for plants and the deer mouse using the following equation:

$$HI = SLHQ_X + SLHQ_Y \dots + SLHQ_Z$$

[NMED Eco Equation 9 (March 2017, revised)]

where:

HI = Hazard Index (unitless)

SLHQ<sub>x</sub> = Hazard quotient for each COC (unitless)

NMED applies a target risk level for ecological risk assessments of 1.0. If the HI for an ecological receptor is above this target risk level, an additional evaluation following the Tier 2 Screening Level Ecological Risk Assessment (SLERA) process (NMED 2017, revised) will be performed (Section 8.4.2).

## 8.4 Screening Refinements

If an individual human health and/or ecological receptor SSL is exceeded by the 95UCL of the EU (Section 8.2) or adverse site risk and/or hazard are noted (Section 8.3), screening will proceed to a refined screening level risk assessment as outlined below prior to concluding with cumulative risk calculations (Section 8.3).

### 8.4.1 Human Health Risk Screening Refinements

If the 95UCL of the EU exceeds the human health residential SSL, a lines-of-evidence (LOE) approach will be developed that will incorporate site-specific parameters while also accounting for future migration and parent chemical degradation potential. As stated by NMED (Wear to Cushman, email, 13 April 2022), these LOEs may include, but are not limited to:

- 1) Site-specific exposure parameter adjustments based upon site-specific usage
- 2) Physical and chemical properties of the compound
- 3) Lack of any historical use of the compound, products containing the compound, or products containing parent compounds which may degrade into the compound in question
- 4) Physical characteristics of the site
- 5) Historical analytical data

The Tier 2 human health risk characterization will include a discussion of the uncertainties associated with the Tier 2 approach in the report.

### 8.4.2 Refined Screening Level Ecological Risk Assessment

If a Tier 1 ecological SSL for an ecological receptor is exceeded or adverse site risk and/or hazard are noted, a refined SLERA, or Tier 2 SLERA, will be performed for the exceeded analyte(s). Refinements will be dependent on the receptor as described below in Sections 8.4.2.1 and 8.4.2.2. The Tier 2 ecological risk characterization will include a discussion of the associated uncertainties in the final report.



#### 8.4.2.1 Plants

For plants, the refined SLERA will consist of calculating plant uptake factors (PUFs) to predict the concentrations of COCs in plants in accordance with NMED RAG, V.2 (March 2017, revised).

The PUFs for inorganic constituents are summarized in the NMED RAG, V.2 (March 2017, revised). For organic COCs, the PUFs are based on the octanol-water partition coefficient ( $K_{ow}$ ), which will be obtained from USEPA databases or primary literature. If a PUF is not available, then a value of one (1) will be applied which assumes 100% assimilation. The equation and variables that will be used to predict chemicals of potential ecological concern (COPEC) concentrations in plants are provided in the NMED RAG, V.2 (March 2017, revised).

A qualitative discussion of the potential for adverse risk will be provided in the refined assessment. Comparison of Tier 2 Lowest Observed Adverse Effects Level (LOAEL) TRVs to calculated plant concentrations will be provided. The calculated plant concentrations will be used to calculate cumulative risk for the refined screening level ecological risk assessment (RSLERA) as outlined below in Section 8.4.3. If exceedances of Tier 2 LOAELs occur, a LOE approach will be developed as described above in Section 8.4.1.

#### 8.4.2.2 Deer Mouse

The Tier 2 exposure assessment for the deer mouse (only at revetments) will consist of calculating refined estimates of exposure doses which will utilize exposure assumptions that are more realistic. The following assumptions will apply to Tier 2 exposure doses as outlined in the NMED RAG, V.2 (NMED 2017, revised) and summarized below:

1. Area Use Factor (AUF): Site-specific value between 0 and 1, based on the ratio of the exposure area to the receptor's average home range size, as shown in the equation below; if a receptor's home range size is less than the exposure area, a value of 1 will be assumed.

$$AUF = \frac{\text{Exposure Area of Site (acres)}}{\text{Average Home Range (acres)}}$$

[NMED Eco Equation 10 (March 2017, revised)]

2. Diet: Initial diet will be considered 100% soil.
3. Body weight: The average reported adult body weight will be applied.
4. Ingestion rate: The average reported ingestion rate will be applied.
5. Dietary composition: Receptor-specific percentages of plant, animal, and soil matter will be considered. Concentrations of COCs in dietary elements (plant and animal matter) will be predicted using bio-uptake and bioaccumulation modeling, as applicable.
6. Bioavailability: It will be assumed that the bioavailability is 100% at each site. Refinements may be made, depending upon an evaluation of the supplemental parameters.
7. Wet-weight to dry-weight conversion factor: A wet-weight to dry-weight conversion factor will also be applied when calculating exposure doses because body weight is reported as wet-weight (kg), and soil concentrations are reported as dry-weight (mg/kg).

The equation and exposure assumptions that will be used to calculate the Tier 2 exposure doses for the deer mouse are shown in Equation 13 of the NMED RAG, V.2 (2017, revised).

A comparison of the Tier 2 calculated exposure dose to the Tier 2 LOAEL TRVs will be provided. The calculated exposure dose will be used to calculate cumulative risk for the RSLERA. Summation of HQs will be added for COCs that have a similar receptor-specific mode of toxicity. If the Tier 2 HI is  $\leq 1.0$ , adverse ecological effects are not expected, and no further action will be taken. For sites that have an HI  $\geq 1.0$  using Tier 2 LOAELS, a LOE approach will be developed as described above in Section 8.4.1.

## 9.0 Summary

This WP proposes using the ISM results from the six highest concentration igloos and six highest concentration revetments, to assess both nature and extent, and human and ecological risk from residual COCs. These locations were determined by evaluating historical data collected from the igloo exteriors and revetments across FWDA.

Using the sampling effort and following the assessment of nature/extent and risk, a generalized approach and path forward will be presented to NMED as a site-wide regulatory position for the remaining, unsampled igloos and revetments:

- a) **IF** all ISM sample results are below NMED residential and ecological soil screening values, **THEN** no further evaluation of igloo and revetments will be required at FWDA.
- b) **IF** ISM sample results exceed NMED residential and/or ecological soil screening values and no potentially significant risk is found for human and/or ecological receptors after risk refinements, **THEN** no further evaluation of igloo and revetments will be required at FWDA.
- c) **IF** ISM sample results exceed NMED residential and/or ecological soil screening values and potentially significant risk is found for human and/or ecological receptors after risk refinements, **THEN** the Army will consider further evaluation of igloo and revetments at FWDA under a separate work plan.

The final goal is to use these findings as the basis for igloo block closure and removal of parcels from the FWDA RCRA Permit without the need for further igloo apron and revetment sampling.

## 10.0 Deliverables

Deliverables shall include electronic versions of draft and final reports, and respective data as outlined below.

### 10.1 Report

A report on the findings from the execution of this Work Plan will be written. At a minimum, the report will include the following:

- a) Brief overview/background of the project

- b) Sample Collection: sampling sites and locations tabulated and plotted on a figure showing locations of igloos under evaluation; a summary and cross referencing to study documents will be made as needed
- c) Field Procedures: a synoptic summary with cross referencing to project documents
- d) Quality Control (field): description; cross referencing project documents as needed
- e) Analyses: description of what was analyzed for, methodologies etc.
- f) Results and Discussion: Data will be evaluated by analyte category. Each phase or section will have the following discussion components:
  - i. Tabular Data Summaries: simple statistics (95UCL by Chebyshev), validation qualifiers
  - ii. Laboratory and validation qualifiers will be incorporated when they impact the evaluation
  - iii. Site-specific aspects (e.g., matrix effects, dilution required, etc.) that might impact the data discussions will be incorporated as appropriate
  - iv. Data usability evaluation
  - v. Calculations that were performed to conducting the analyte screening
  - vi. Screening of analytical data against NMED SSLs for both human and ecological receptors, as defined in the WP
  - vii. Discussion of uncertainty
- g) Conclusion: Final conclusions for the study.

## 10.2 Submittal of Electronic Copy

The following will be submitted to the NMED:

- a) Electronic PDF copy of the report and all accompanying figures, tables, photos, field data sheets, and raw data sheets
- b) Portable Document Format (PDF) files of all laboratory reports for chemical analysis, validation reports and miscellaneous parameters

## 11.0 References

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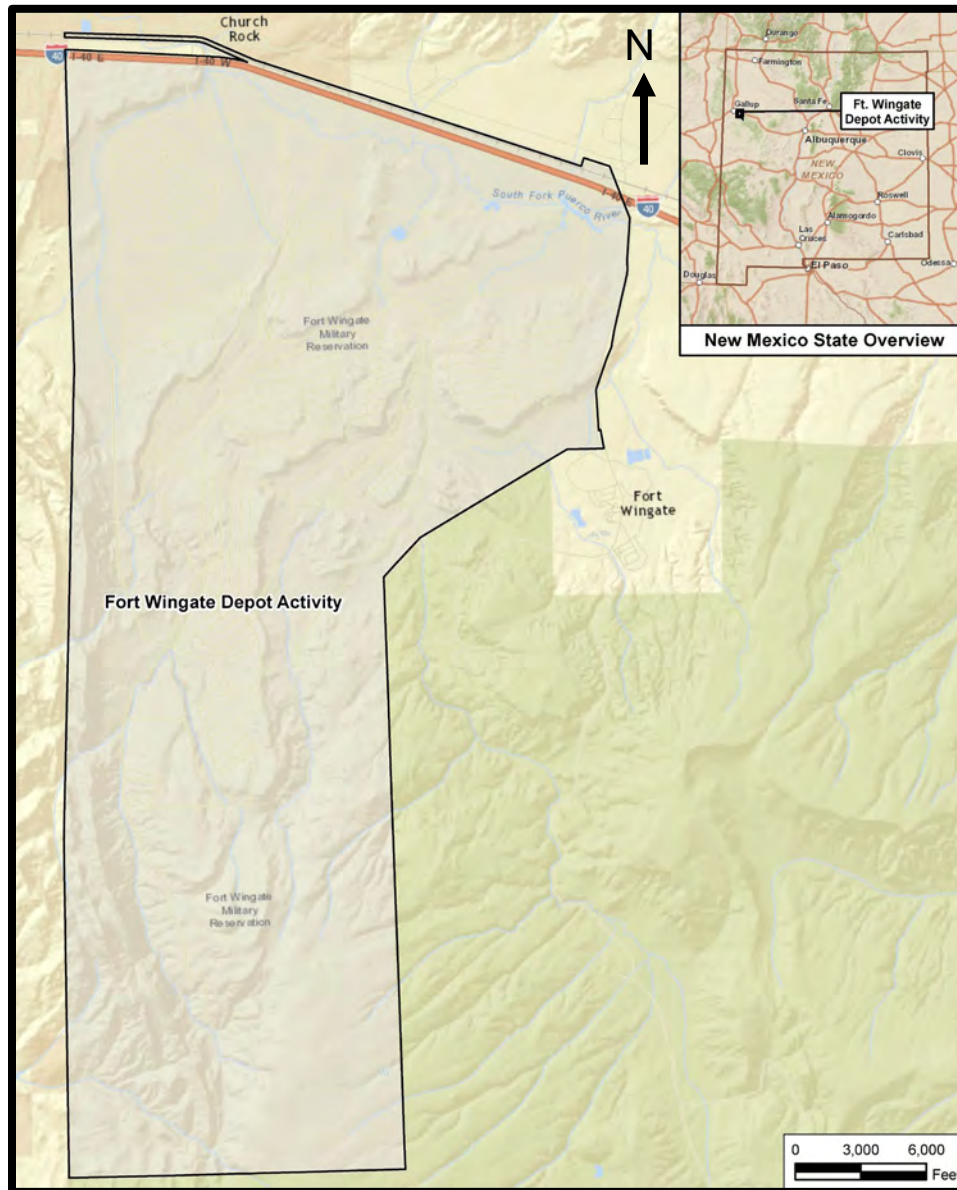
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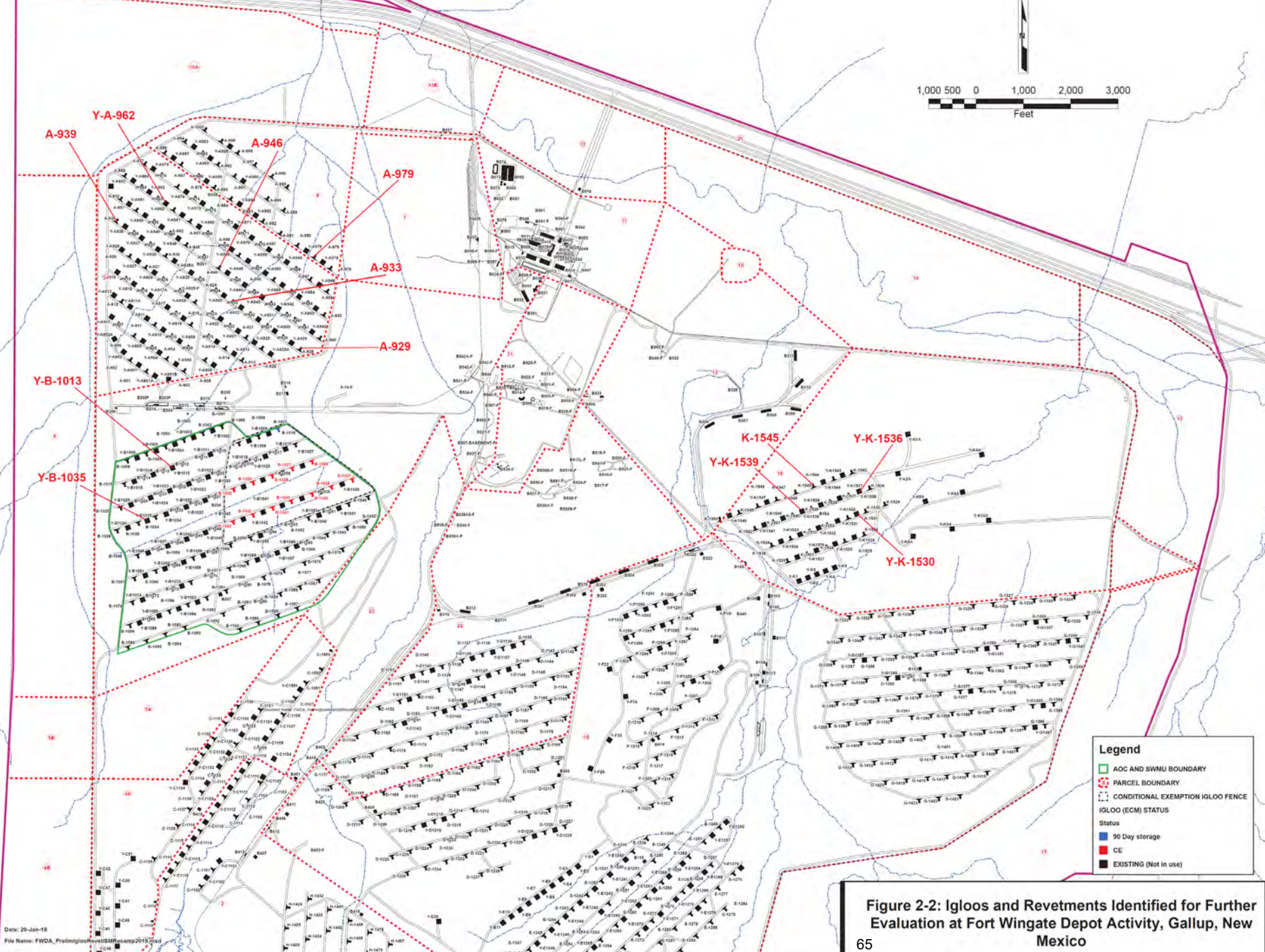
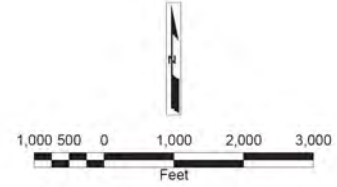
Zapata. 2019. Final, Rev. 2, Permittee-Initiated Interim Measures Report, Parcel 24 – Igloo Block A, Fort Wingate Depot Activity, McKinley County, New Mexico. Contract No. W9128F-13-D-0025. 27 September 2019.

## Figures

**Figure 2-1: Regional Map of Fort Wingate Depot Activity, Gallup, New Mexico**







**Legend**

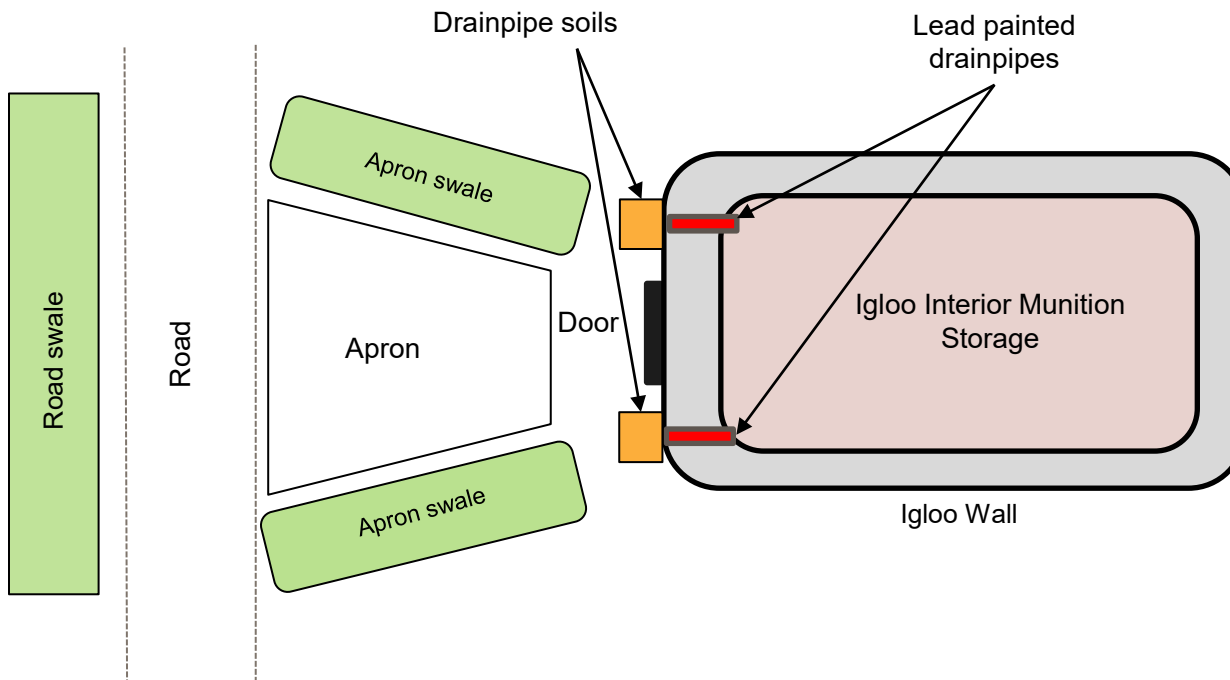
- AOC AND SWMU BOUNDARY
- PARCEL BOUNDARY
- CONDITIONAL EXEMPTION IGLOO FENCE (IGLOO (ECM) STATUS)

**Status**

- 90 Day storage
- CE
- EXISTING (Not in use)

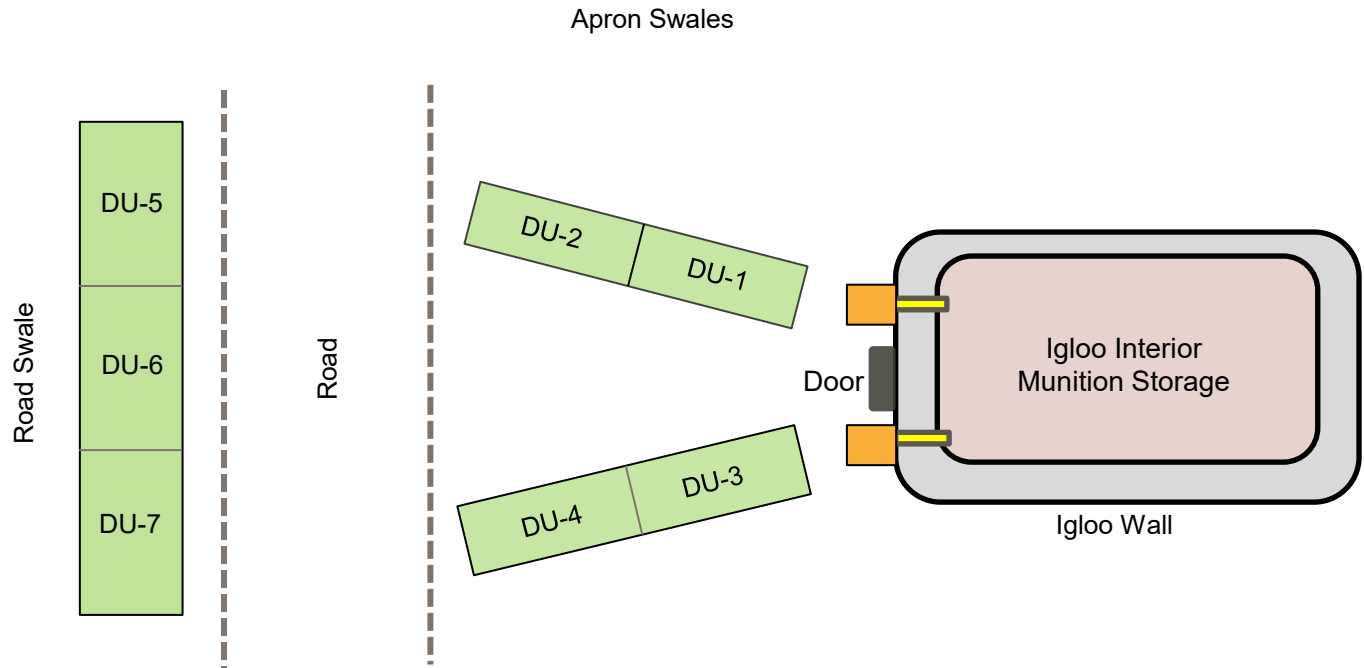
**Figure 2-2: Igloos and Revetments Identified for Further Evaluation at Fort Wingate Depot Activity, Gallup, New Mexico**

**Figure 3-1: Igloo Schematic - Key Features**



\* drawing not to scale

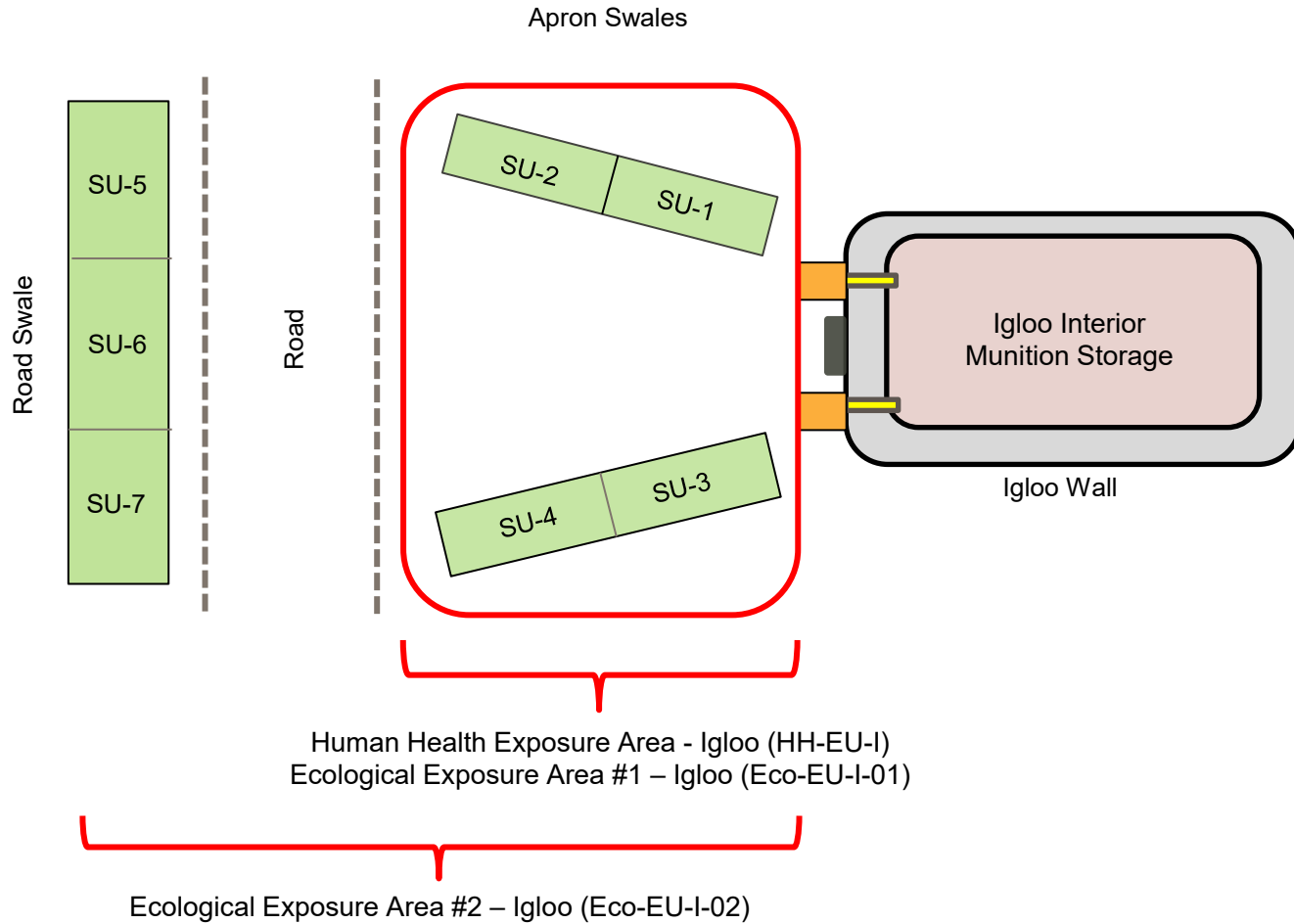
**Figure 3-2: Igloo Schematic Showing Decision Units (DUs) for Evaluating Nature and Extent**



\*drawing not to scale

\*\*swale across the road only sampled when road elevation is topographically lower than the apron

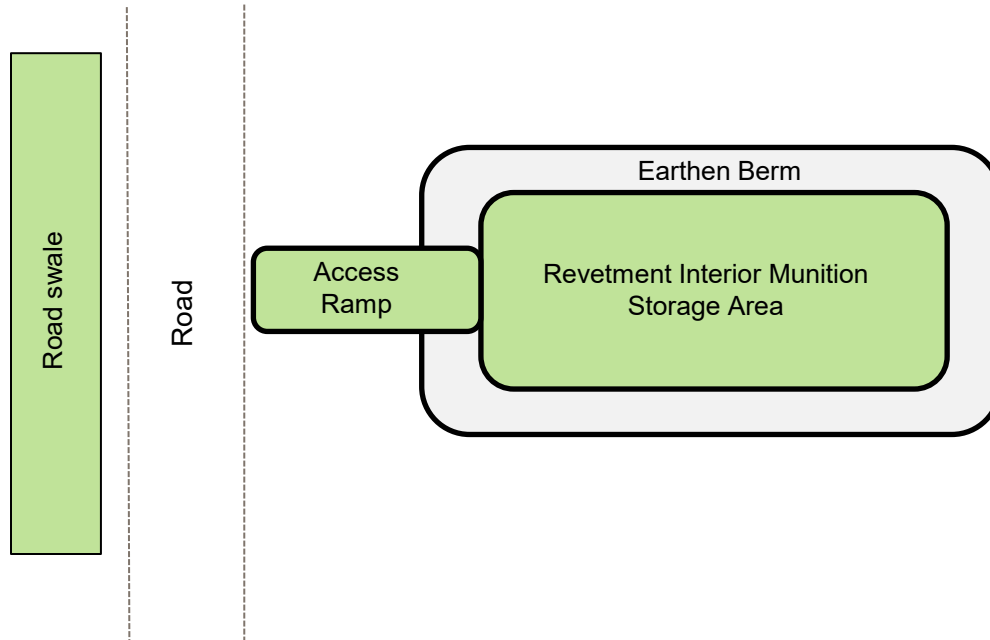
**Figure 3-3: Igloo Schematic of Human and Ecological Exposure Units**



\*drawing not to scale

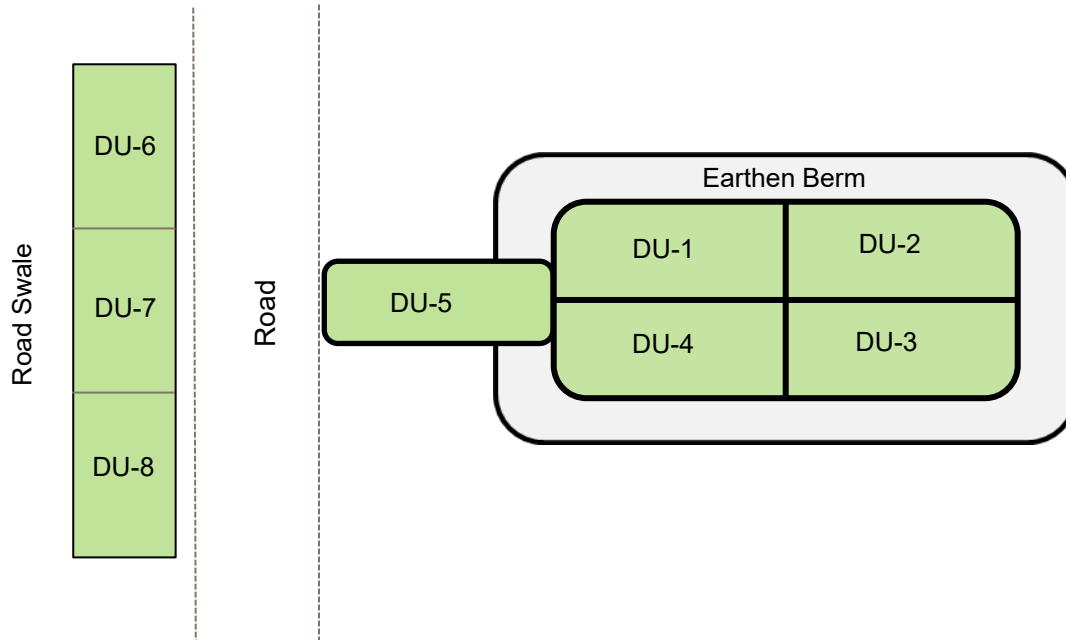
\*\*swale across the road only sampled when road elevation is topographically lower than the apron

**Figure 3-4: Revetment Schematic - Key Features**



\*drawing not to scale

**Figure 3-5: Revetment Schematic Showing Decision Units (DUs) for Evaluating Nature and Extent**

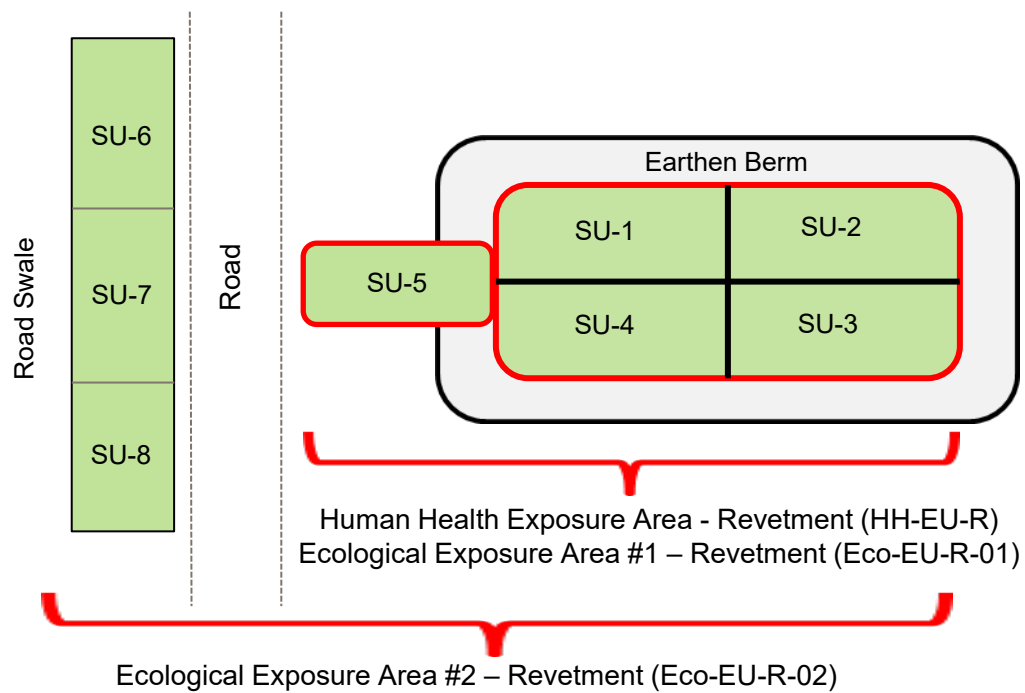


\*drawing not to scale

\*\*DU for access ramp only sampled when the ramp is topographically lower than the revetment interior

\*\*\*DUs for road swale only sampled when the road is topographically lower than the ramp

Figure 3-6: Revetment Schematic of Human and Ecological Exposure Units



\*drawing not to scale

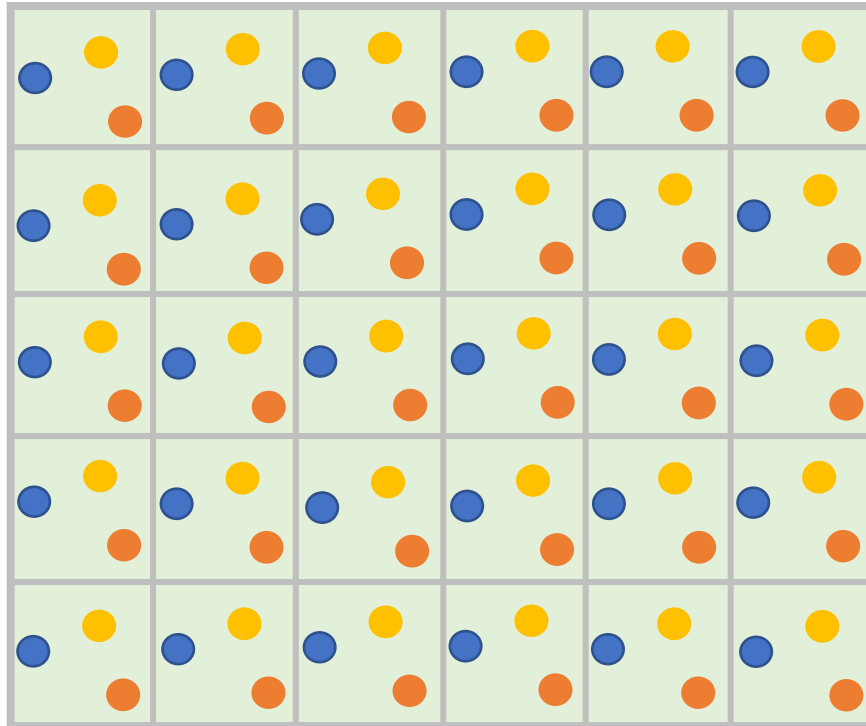
\*\*DU for access ramp only sampled when the ramp is topographically lower than the revetment interior

\*\*\*DUs for road swale only sampled when the road is topographically lower than the ramp





Figure 5-2: Systematic Random Sampling Method Shown in Triplicate<sup>1</sup>



**Footnotes:**

1) This figure is provided as an example only to demonstrate increment locations when sampled in triplicate using the systematic random sampling method. Figure not drawn to scale.

- Initial ISM Sample, or Replicate 1
- Replicate 2
- Replicate 3

## Tables

**Table 3-1: Area Calculations for Igloo Sampling Unit (SUs/DUs)**

<b>Igloo Area</b>			
<b>SU/DU</b>	<b>L</b>	<b>W</b>	<b>A</b>
<b>number</b>	<b>ft</b>	<b>ft</b>	<b>ft<sup>2</sup></b>
1	15	4	60
2	15	4	60
3	15	4	60
4	15	4	60
5	30	4	120
6	30	4	120
7	30	4	120
<b>Total SU/DU 1-4</b>			240
<b>Total SU/DU 1-7</b>			600

Assumptions:

- 1) Each side of the igloo apron approx. 30 ft L by 4 ft W is divided into 2 SU/DUs/SUs for a total of 4 apron SUs/DUs (SUs/DUs 1-4)
- 2) The swale across the road is 90 ft L by 4 ft W to account for drainage coming from apron across the road. This area is divided into 3 SUs/DUs (SUs/DUs 5-7)
- 3) SUs/DUs 1-4 are 15 ft L by 4 ft W
- 4) SUs/DUs 5-7 are across the road and 30 ft L by 4 ft W

<b>Revetment Area</b>			
<b>SU/DU</b>	<b>L</b>	<b>W</b>	<b>A</b>
<b>number</b>	<b>ft</b>	<b>ft</b>	<b>ft<sup>2</sup></b>
1, 2, 3, 4	42	72	3024
5	30	12	360
6	30	4	120
7	30	4	120
8	30	4	120
<b>Total SU/DU 1-5</b>			3384
<b>Total SU/DU 1-8</b>			3744

Assumptions:

- 1) Each revetment is approx. 42 ft L by 72 ft W and will be divided into quadrants of equal size for a total of 4 SUs/DUs (SUs/DUs 1-4)
- 2) The opening of the revetment is assumed to be 30 ft L and standard road lane W of 12 ft and will be 1 SU/DU (SU/DU 5)
- 3) The swale across the road is 90 ft L by 4 ft W to account for drainage coming from apron across the road. This area is divided into 3 SU/DUs (SU/DUs 6-8)

**Table 3-2: Area Use Factor Calculations for Ecological Receptors**

Receptor	Home Range (1)		Area Use Factor (AUF)				AUF > 10% Home Range (2)			
			Igloo w/o Road Swale (DU 1-4)	Igloo w/ Road Swale (DU 1-7)	Revetment w/o Road Swale (DU 1-5)	Revetment w/ Road Swale (DU 1-8)	Igloo w/o Road Swale (DU 1-4)	Igloo w/ Road Swale (DU 1-7)	Revetment w/o Road Swale (DU 1-5)	Revetment w/ Road Swale (DU 1-8)
	acres	ft <sup>2</sup>	%	%	%	%	Y or N	Y or N	Y or N	Y or N
Plants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Deer Mouse	0.3	1.31E+04	1.84	4.59	25.9	28.65	N	N	Y	Y
Horned Lark	4	1.74E+05	0.14	0.34	1.94	2.15	N	N	N	N
Kit Fox	2767	1.21E+08	0.0002	0.0005	0.0028	0.0031	N	N	N	N
Red-Tailed Hawk	1770	7.71E+07	0.00031	0.0008	0.0044	0.0049	N	N	N	N
Pronghorn Antelope	3422	1.49E+08	0.00016	0.0004	0.0023	0.0025	N	N	N	N

**Footnotes**

NA - not applicable

1 acre = 43560 ft<sup>2</sup>

Igloo DUs 1-4 area 240 ft<sup>2</sup>

Igloo DUs 1-7 area 600 ft<sup>2</sup>

Revetment DUs 1-5 3384 ft<sup>2</sup>

Revetment DUs 1-8 3744 ft<sup>2</sup>

Igloo AUF = (600 ft<sup>2</sup> / Home Range ft<sup>2</sup>) X 100

Revetment AUF = (3384 ft<sup>2</sup> / Home Range ft<sup>2</sup>) X 100

(1) Home Range values obtained from NMED Risk Assessment Guidance for Investigations and Remediation, Volume II (2017 Revised).

(2) As indicated in the NMED Risk Assessment Guidance for Investigations and Remediation, Volume II (2017 Revised) Section 3.1 it is assumed that risks are negligible from exposure to COPECs at sites that are less than 10% of the receptors home range.

AUF greater than 10% of homerange

Table 5-1: Quality Control Samples for Precision and Accuracy

Quality Control Type	Precision	Accuracy	Minimum Frequency
Field	Relative Percent Difference (RPD) Goal of $\leq 20\%$	Field Blank	One per batch of laboratory water used
		Equipment Blank	One per every igloo and revetment, based on the professional judgment of the field team leader
Laboratory	Matrix Spike/Matrix Spike Duplicate (RPD goal of $\leq 20\%$ )	Method Blank	One per batch, at least one every 20 samples (rounded up) (5%)
		Laboratory Control Sample or Blank Sample	One per batch, at least one every 20 samples (rounded up) (5%)
		Matrix Spike Percent Recovery (Percent Recovery Goal of 80% to 120%)	One every 20 samples (rounded up) (5%)

Table 5-2A: Summary of ISM Samples to be Collected at Igloo K-1545

Sample ID (1)	Sample Location	Sample Analyses
16-41-K-1545-SS0-6IS-01R1-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-01R2-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-01R3-M	Igloo K-1545	RCRA 8 Metals, Explosives
<b>16-41-K-1545-SS0-6IS-01R1-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-01R2-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-01R3-UM</b>	Igloo K-1545	Supplemental Parameters
16-41-K-1545-SS0-6IS-02R1-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-02R2-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-02R3-M	Igloo K-1545	RCRA 8 Metals, Explosives
<b>16-41-K-1545-SS0-6IS-02R1-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-02R2-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-02R3-UM</b>	Igloo K-1545	Supplemental Parameters
16-41-K-1545-SS0-6IS-03R1-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-03R2-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-03R3-M	Igloo K-1545	RCRA 8 Metals, Explosives
<b>16-41-K-1545-SS0-6IS-03R1-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-03R2-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-03R3-UM</b>	Igloo K-1545	Supplemental Parameters
16-41-K-1545-SS0-6IS-04R1-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-04R2-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-04R3-M	Igloo K-1545	RCRA 8 Metals, Explosives
<b>16-41-K-1545-SS0-6IS-04R1-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-04R2-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-04R3-UM</b>	Igloo K-1545	Supplemental Parameters
16-41-K-1545-SS0-6IS-05R1-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-05R2-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-05R3-M	Igloo K-1545	RCRA 8 Metals, Explosives
<b>16-41-K-1545-SS0-6IS-05R1-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-05R2-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-05R3-UM</b>	Igloo K-1545	Supplemental Parameters
16-41-K-1545-SS0-6IS-06R1-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-06R2-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-06R3-M	Igloo K-1545	RCRA 8 Metals, Explosives
<b>16-41-K-1545-SS0-6IS-06R1-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-06R2-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-06R3-UM</b>	Igloo K-1545	Supplemental Parameters
16-41-K-1545-SS0-6IS-07R1-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-07R2-M	Igloo K-1545	RCRA 8 Metals, Explosives
16-41-K-1545-SS0-6IS-07R3-M	Igloo K-1545	RCRA 8 Metals, Explosives
<b>16-41-K-1545-SS0-6IS-07R1-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-07R2-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-07R3-UM</b>	Igloo K-1545	Supplemental Parameters
<b>16-41-K-1545-SS0-6IS-XXR1-UM</b>	Igloo K-1545	RCRA 8 Metals
<b>16-41-K-1545-SS0-6IS-XXR2-UM</b>	Igloo K-1545	RCRA 8 Metals
<b>16-41-K-1545-SS0-6IS-XXR3-UM</b>	Igloo K-1545	RCRA 8 Metals
16-41-K-1545-SS0-6IS-01R1-M-EB	Igloo K-1545	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each igloo prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-2B: Summary of ISM Samples to be Collected at Igloo A-979

Sample ID (1)	Sample Location	Sample Analyses
16-41-A-979-SS0-6IS-01R1-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-01R2-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-01R3-M	Igloo A-979	RCRA 8 Metals, Explosives
<b>16-41-A-979-SS0-6IS-01R1-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-01R2-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-01R3-UM</b>	Igloo A-979	Supplemental Parameters
16-41-A-979-SS0-6IS-02R1-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-02R2-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-02R3-M	Igloo A-979	RCRA 8 Metals, Explosives
<b>16-41-A-979-SS0-6IS-02R1-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-02R2-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-02R3-UM</b>	Igloo A-979	Supplemental Parameters
16-41-A-979-SS0-6IS-03R1-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-03R2-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-03R3-M	Igloo A-979	RCRA 8 Metals, Explosives
<b>16-41-A-979-SS0-6IS-03R1-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-03R2-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-03R3-UM</b>	Igloo A-979	Supplemental Parameters
16-41-A-979-SS0-6IS-04R1-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-04R2-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-04R3-M	Igloo A-979	RCRA 8 Metals, Explosives
<b>16-41-A-979-SS0-6IS-04R1-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-04R2-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-04R3-UM</b>	Igloo A-979	Supplemental Parameters
16-41-A-979-SS0-6IS-05R1-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-05R2-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-05R3-M	Igloo A-979	RCRA 8 Metals, Explosives
<b>16-41-A-979-SS0-6IS-05R1-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-05R2-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-05R3-UM</b>	Igloo A-979	Supplemental Parameters
16-41-A-979-SS0-6IS-06R1-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-06R2-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-06R3-M	Igloo A-979	RCRA 8 Metals, Explosives
<b>16-41-A-979-SS0-6IS-06R1-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-06R2-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-06R3-UM</b>	Igloo A-979	Supplemental Parameters
16-41-A-979-SS0-6IS-07R1-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-07R2-M	Igloo A-979	RCRA 8 Metals, Explosives
16-41-A-979-SS0-6IS-07R3-M	Igloo A-979	RCRA 8 Metals, Explosives
<b>16-41-A-979-SS0-6IS-07R1-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-07R2-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-07R3-UM</b>	Igloo A-979	Supplemental Parameters
<b>16-41-A-979-SS0-6IS-XXR1-UM</b>	Igloo A-979	RCRA 8 Metals
<b>16-41-A-979-SS0-6IS-XXR2-UM</b>	Igloo A-979	RCRA 8 Metals
<b>16-41-A-979-SS0-6IS-XXR3-UM</b>	Igloo A-979	RCRA 8 Metals
16-41-A-979-SS0-6IS-01R1-EB	Igloo A-979	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each igloo prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-2C: Summary of ISM Samples to be Collected at Igloo A-933

Sample ID (1)	Sample Location	Sample Analyses
16-41-A-933-SS0-6IS-01R1-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-01R2-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-01R3-M	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-01R1-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-01R2-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-01R3-UM</b>	Igloo A-933	Supplemental Parameters
16-41-A-933-SS0-6IS-02R1-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-02R2-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-02R3-M	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-02R1-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-02R2-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-02R3-UM</b>	Igloo A-933	Supplemental Parameters
16-41-A-933-SS0-6IS-03R1-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-03R2-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-03R3-M	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-03R1-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-03R2-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-03R3-UM</b>	Igloo A-933	Supplemental Parameters
16-41-A-933-SS0-6IS-04R1-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-04R2-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-04R3-M	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-04R1-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-04R2-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-04R3-UM</b>	Igloo A-933	Supplemental Parameters
16-41-A-933-SS0-6IS-05R1-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-05R2-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-05R3-M	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-05R1-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-05R2-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-05R3-UM</b>	Igloo A-933	Supplemental Parameters
16-41-A-933-SS0-6IS-06R1-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-06R2-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-06R3-M	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-06R1-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-06R2-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-06R3-UM</b>	Igloo A-933	Supplemental Parameters
16-41-A-933-SS0-6IS-07R1-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-07R2-M	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-07R3-M	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-07R1-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-07R2-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-07R3-UM</b>	Igloo A-933	Supplemental Parameters
<b>16-41-A-933-SS0-6IS-XXR1-UM</b>	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-XXR2-UM</b>	Igloo A-933	RCRA 8 Metals, Explosives
<b>16-41-A-933-SS0-6IS-XXR3-UM</b>	Igloo A-933	RCRA 8 Metals, Explosives
16-41-A-933-SS0-6IS-01R1-EB	Igloo A-933	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each igloo prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)



Table 5-2D: Summary of ISM Samples to be Collected at Igloo A-946

Sample ID (1)	Sample Location	Sample Analyses
16-41-A-946-SS0-6IS-01R1-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-01R2-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-01R3-M	Igloo A-946	RCRA 8 Metals, Explosives
<b>16-41-A-946-SS0-6IS-01R1-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-01R2-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-01R3-M</b>	Igloo A-946	Supplemental Parameters
16-41-A-946-SS0-6IS-02R1-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-02R2-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-02R3-M	Igloo A-946	RCRA 8 Metals, Explosives
<b>16-41-A-946-SS0-6IS-02R1-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-02R2-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-02R3-M</b>	Igloo A-946	Supplemental Parameters
16-41-A-946-SS0-6IS-03R1-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-03R2-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-03R3-M	Igloo A-946	RCRA 8 Metals, Explosives
<b>16-41-A-946-SS0-6IS-03R1-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-03R2-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-03R3-M</b>	Igloo A-946	Supplemental Parameters
16-41-A-946-SS0-6IS-04R1-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-04R2-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-04R3-M	Igloo A-946	RCRA 8 Metals, Explosives
<b>16-41-A-946-SS0-6IS-04R1-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-04R2-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-04R3-M</b>	Igloo A-946	Supplemental Parameters
16-41-A-946-SS0-6IS-05R1-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-05R2-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-05R3-M	Igloo A-946	RCRA 8 Metals, Explosives
<b>16-41-A-946-SS0-6IS-05R1-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-05R2-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-05R3-M</b>	Igloo A-946	Supplemental Parameters
16-41-A-946-SS0-6IS-06R1-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-06R2-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-06R3-M	Igloo A-946	RCRA 8 Metals, Explosives
<b>16-41-A-946-SS0-6IS-06R1-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-06R2-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-06R3-M</b>	Igloo A-946	Supplemental Parameters
16-41-A-946-SS0-6IS-07R1-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-07R2-M	Igloo A-946	RCRA 8 Metals, Explosives
16-41-A-946-SS0-6IS-07R3-M	Igloo A-946	RCRA 8 Metals, Explosives
<b>16-41-A-946-SS0-6IS-07R1-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-07R2-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-07R3-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-XXR1-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-XXR2-M</b>	Igloo A-946	Supplemental Parameters
<b>16-41-A-946-SS0-6IS-XXR3-M</b>	Igloo A-946	Supplemental Parameters
16-41-A-946-SS0-6IS-01R1-EB	Igloo A-946	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each igloo prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-2E: Summary of ISM Samples to be Collected at Igloo A-929

Sample ID (1)	Sample Location	Sample Analyses
16-41-A-929-SS0-6IS-01R1-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-01R2-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-01R3-M	Igloo A-929	RCRA 8 Metals, Explosives
<b>16-41-A-929-SS0-6IS-01R1-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-01R2-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-01R3-UM</b>	Igloo A-929	Supplemental Parameters
16-41-A-929-SS0-6IS-02R1-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-02R2-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-02R3-M	Igloo A-929	RCRA 8 Metals, Explosives
<b>16-41-A-929-SS0-6IS-02R1-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-02R2-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-02R3-UM</b>	Igloo A-929	Supplemental Parameters
16-41-A-929-SS0-6IS-03R1-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-03R2-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-03R3-M	Igloo A-929	RCRA 8 Metals, Explosives
<b>16-41-A-929-SS0-6IS-03R1-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-03R2-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-03R3-UM</b>	Igloo A-929	Supplemental Parameters
16-41-A-929-SS0-6IS-04R1-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-04R2-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-04R3-M	Igloo A-929	RCRA 8 Metals, Explosives
<b>16-41-A-929-SS0-6IS-04R1-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-04R2-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-04R3-UM</b>	Igloo A-929	Supplemental Parameters
16-41-A-929-SS0-6IS-05R1-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-05R2-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-05R3-M	Igloo A-929	RCRA 8 Metals, Explosives
<b>16-41-A-929-SS0-6IS-05R1-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-05R2-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-05R3-UM</b>	Igloo A-929	Supplemental Parameters
16-41-A-929-SS0-6IS-06R1-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-06R2-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-06R3-M	Igloo A-929	RCRA 8 Metals, Explosives
<b>16-41-A-929-SS0-6IS-06R1-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-06R2-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-06R3-UM</b>	Igloo A-929	Supplemental Parameters
16-41-A-929-SS0-6IS-07R1-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-07R2-M	Igloo A-929	RCRA 8 Metals, Explosives
16-41-A-929-SS0-6IS-07R3-M	Igloo A-929	RCRA 8 Metals, Explosives
<b>16-41-A-929-SS0-6IS-07R1-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-07R2-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-07R3-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-XXR1-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-XXR2-UM</b>	Igloo A-929	Supplemental Parameters
<b>16-41-A-929-SS0-6IS-XXR3-UM</b>	Igloo A-929	Supplemental Parameters
16-41-A-929-SS0-6IS-01R1-EB	Igloo A-929	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each igloo prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-2F: Summary of ISM Samples to be Collected at Igloo A-939

Sample ID (1)	Sample Location	Sample Analyses
16-41-A-939-SS0-6IS-01R1-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-01R2-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-01R3-M	Igloo A-939	RCRA 8 Metals, Explosives
<b>16-41-A-939-SS0-6IS-01R1-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-01R2-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-01R3-UM</b>	Igloo A-939	Supplemental Parameters
16-41-A-939-SS0-6IS-02R1-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-02R2-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-02R3-M	Igloo A-939	RCRA 8 Metals, Explosives
<b>16-41-A-939-SS0-6IS-02R1-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-02R2-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-02R3-UM</b>	Igloo A-939	Supplemental Parameters
16-41-A-939-SS0-6IS-03R1-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-03R2-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-03R3-M	Igloo A-939	RCRA 8 Metals, Explosives
<b>16-41-A-939-SS0-6IS-03R1-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-03R2-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-03R3-UM</b>	Igloo A-939	Supplemental Parameters
16-41-A-939-SS0-6IS-04R1-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-04R2-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-04R3-M	Igloo A-939	RCRA 8 Metals, Explosives
<b>16-41-A-939-SS0-6IS-04R1-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-04R2-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-04R3-UM</b>	Igloo A-939	Supplemental Parameters
16-41-A-939-SS0-6IS-05R1-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-05R2-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-05R3-M	Igloo A-939	RCRA 8 Metals, Explosives
<b>16-41-A-939-SS0-6IS-05R1-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-05R2-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-05R3-UM</b>	Igloo A-939	Supplemental Parameters
16-41-A-939-SS0-6IS-06R1-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-06R2-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-06R3-M	Igloo A-939	RCRA 8 Metals, Explosives
<b>16-41-A-939-SS0-6IS-06R1-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-06R2-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-06R3-UM</b>	Igloo A-939	Supplemental Parameters
16-41-A-939-SS0-6IS-07R1-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-07R2-M	Igloo A-939	RCRA 8 Metals, Explosives
16-41-A-939-SS0-6IS-07R3-M	Igloo A-939	RCRA 8 Metals, Explosives
<b>16-41-A-939-SS0-6IS-07R1-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-07R2-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-07R3-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-XXR1-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-XXR2-UM</b>	Igloo A-939	Supplemental Parameters
<b>16-41-A-939-SS0-6IS-XXR3-UM</b>	Igloo A-939	Supplemental Parameters
16-41-A-939-SS0-6IS-01R1-EB	Igloo A-939	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each igloo prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-3A: Summary of ISM Samples to be Collected at Revetment Y-K-1536

Sample ID (1)	Sample Location	Sample Analyses
16-41-Y-K1536-SS0-6IS-01R1-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-01R2-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-01R3-M	Y-K-1536	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-01R1-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-01R2-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-01R3-UM</b>	Y-K-1536	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-02R1-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-02R2-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-02R3-M	Y-K-1536	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-02R1-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-02R2-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-02R3-UM</b>	Y-K-1536	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-03R1-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-03R2-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-03R3-M	Y-K-1536	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-03R1-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-03R2-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-03R3-UM</b>	Y-K-1536	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-04R1-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-04R2-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-04R3-M	Y-K-1536	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-04R1-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-04R2-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-04R3-UM</b>	Y-K-1536	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-05R1-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-05R2-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-05R3-M	Y-K-1536	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-05R1-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-05R2-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-05R3-UM</b>	Y-K-1536	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-06R1-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-06R2-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-06R3-M	Y-K-1536	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-06R1-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-06R2-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-06R3-UM</b>	Y-K-1536	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-07R1-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-07R2-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-07R3-M	Y-K-1536	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-07R1-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-07R2-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-07R3-UM</b>	Y-K-1536	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-08R1-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-08R2-M	Y-K-1536	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-08R3-M	Y-K-1536	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-08R1-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-08R2-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-08R3-UM</b>	Y-K-1536	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-XXR1-UM</b>	Y-K-1536	RCRA 8 Metals
<b>16-41-Y-K1536-SS0-6IS-XXR2-UM</b>	Y-K-1536	RCRA 8 Metals
<b>16-41-Y-K1536-SS0-6IS-XXR3-UM</b>	Y-K-1536	RCRA 8 Metals
16-41-Y-K1536-SS0-6IS-01R1-EB	Y-K-1536	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each revetment prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)



Table 5-3B: Summary of ISM Samples to be Collected at Revetment Y-K-1530

Sample ID (1)	Sample Location	Sample Analyses
16-41-Y-K1530-SS0-6IS-01R1-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-01R2-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-01R3-M	Y-K-1530	RCRA 8 Metals, Explosives
<b>16-41-Y-K1530-SS0-6IS-01R1-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-01R2-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-01R3-UM</b>	Y-K-1530	Supplemental Parameters
16-41-Y-K1530-SS0-6IS-03R1-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-03R2-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-03R3-M	Y-K-1530	RCRA 8 Metals, Explosives
<b>16-41-Y-K1530-SS0-6IS-03R1-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-03R2-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-03R3-UM</b>	Y-K-1530	Supplemental Parameters
16-41-Y-K1530-SS0-6IS-04R1-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-04R2-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-04R3-M	Y-K-1530	RCRA 8 Metals, Explosives
<b>16-41-Y-K1530-SS0-6IS-04R1-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-04R2-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-04R3-UM</b>	Y-K-1530	Supplemental Parameters
16-41-Y-K1530-SS0-6IS-05R1-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-05R2-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-05R3-M	Y-K-1530	RCRA 8 Metals, Explosives
<b>16-41-Y-K1530-SS0-6IS-05R1-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-05R2-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-05R3-UM</b>	Y-K-1530	Supplemental Parameters
16-41-Y-K1530-SS0-6IS-06R1-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-06R2-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-06R3-M	Y-K-1530	RCRA 8 Metals, Explosives
<b>16-41-Y-K1530-SS0-6IS-06R1-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-06R2-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-06R3-UM</b>	Y-K-1530	Supplemental Parameters
16-41-Y-K1530-SS0-6IS-07R1-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-07R2-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1530-SS0-6IS-07R3-M	Y-K-1530	RCRA 8 Metals, Explosives
<b>16-41-Y-K1530-SS0-6IS-07R1-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-07R2-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-07R3-UM</b>	Y-K-1530	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-08R1-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-08R2-M	Y-K-1530	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-08R3-M	Y-K-1530	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-08R1-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-08R2-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-08R3-UM</b>	Y-K-1530	Supplemental Parameters
<b>16-41-Y-K1530-SS0-6IS-XXR1-UM</b>	Y-K-1530	RCRA 8 Metals
<b>16-41-Y-K1530-SS0-6IS-XXR2-UM</b>	Y-K-1530	RCRA 8 Metals
<b>16-41-Y-K1530-SS0-6IS-XXR3-UM</b>	Y-K-1530	RCRA 8 Metals
16-41-Y-K1530-SS0-6IS-01R1-EB	Y-K-1530	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each revetment prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-3C: Summary of ISM Samples to be Collected at Revetment Y-K-1539

Sample ID (1)	Sample Location	Sample Analyses
16-41-Y-K1539-SS0-6IS-01R1-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-01R2-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-01R3-M	Y-K-1539	RCRA 8 Metals, Explosives
<b>16-41-Y-K1539-SS0-6IS-01R1-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-01R2-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-01R3-UM</b>	Y-K-1539	Supplemental Parameters
16-41-Y-K1539-SS0-6IS-02R1-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-02R2-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-02R3-M	Y-K-1539	RCRA 8 Metals, Explosives
<b>16-41-Y-K1539-SS0-6IS-02R1-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-02R2-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-02R3-UM</b>	Y-K-1539	Supplemental Parameters
16-41-Y-K1539-SS0-6IS-03R1-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-03R2-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-03R3-M	Y-K-1539	RCRA 8 Metals, Explosives
<b>16-41-Y-K1539-SS0-6IS-03R1-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-03R2-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-03R3-UM</b>	Y-K-1539	Supplemental Parameters
16-41-Y-K1539-SS0-6IS-04R1-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-04R2-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-04R3-M	Y-K-1539	RCRA 8 Metals, Explosives
<b>16-41-Y-K1539-SS0-6IS-04R1-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-04R2-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-04R3-UM</b>	Y-K-1539	Supplemental Parameters
16-41-Y-K1539-SS0-6IS-05R1-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-05R2-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-05R3-M	Y-K-1539	RCRA 8 Metals, Explosives
<b>16-41-Y-K1539-SS0-6IS-05R1-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-05R2-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-05R3-UM</b>	Y-K-1539	Supplemental Parameters
16-41-Y-K1539-SS0-6IS-06R1-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-06R2-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-06R3-M	Y-K-1539	RCRA 8 Metals, Explosives
<b>16-41-Y-K1539-SS0-6IS-06R1-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-06R2-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-06R3-UM</b>	Y-K-1539	Supplemental Parameters
16-41-Y-K1539-SS0-6IS-07R1-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-07R2-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1539-SS0-6IS-07R3-M	Y-K-1539	RCRA 8 Metals, Explosives
<b>16-41-Y-K1539-SS0-6IS-07R1-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-07R2-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-07R3-UM</b>	Y-K-1539	Supplemental Parameters
16-41-Y-K1536-SS0-6IS-08R1-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-08R2-M	Y-K-1539	RCRA 8 Metals, Explosives
16-41-Y-K1536-SS0-6IS-08R3-M	Y-K-1539	RCRA 8 Metals, Explosives
<b>16-41-Y-K1536-SS0-6IS-08R1-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-08R2-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1536-SS0-6IS-08R3-UM</b>	Y-K-1539	Supplemental Parameters
<b>16-41-Y-K1539-SS0-6IS-XXR1-UM</b>	Y-K-1539	RCRA 8 Metals
<b>16-41-Y-K1539-SS0-6IS-XXR2-UM</b>	Y-K-1539	RCRA 8 Metals
<b>16-41-Y-K1539-SS0-6IS-XXR3-UM</b>	Y-K-1539	RCRA 8 Metals
16-41-Y-K1539-SS0-6IS-01R1-EB	Y-K-1539	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each revetment prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-3D: Summary of ISM Samples to be Collected at Revetment Y-B-1013

Sample ID (1)	Sample Location	Sample Analyses
06-28-Y-B1013-SS0-6IS-01R1-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-01R2-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-01R3-M	Y-B-1013	RCRA 8 Metals, Explosives
<b>06-28-Y-B1013-SS0-6IS-01R1-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-01R2-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-01R3-UM</b>	Y-B-1013	Supplemental Parameters
06-28-Y-B1013-SS0-6IS-02R1-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-02R2-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-02R3-M	Y-B-1013	RCRA 8 Metals, Explosives
<b>06-28-Y-B1013-SS0-6IS-02R1-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-02R2-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-02R3-UM</b>	Y-B-1013	Supplemental Parameters
06-28-Y-B1013-SS0-6IS-03R1-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-03R2-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-03R3-M	Y-B-1013	RCRA 8 Metals, Explosives
<b>06-28-Y-B1013-SS0-6IS-03R1-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-03R2-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-03R3-UM</b>	Y-B-1013	Supplemental Parameters
06-28-Y-B1013-SS0-6IS-04R1-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-04R2-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-04R3-M	Y-B-1013	RCRA 8 Metals, Explosives
<b>06-28-Y-B1013-SS0-6IS-04R1-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-04R2-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-04R3-UM</b>	Y-B-1013	Supplemental Parameters
06-28-Y-B1013-SS0-6IS-05R1-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-05R2-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-05R3-M	Y-B-1013	RCRA 8 Metals, Explosives
<b>06-28-Y-B1013-SS0-6IS-05R1-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-05R2-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-05R3-UM</b>	Y-B-1013	Supplemental Parameters
06-28-Y-B1013-SS0-6IS-06R1-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-06R2-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-06R3-M	Y-B-1013	RCRA 8 Metals, Explosives
<b>06-28-Y-B1013-SS0-6IS-06R1-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-06R2-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-06R3-UM</b>	Y-B-1013	Supplemental Parameters
06-28-Y-B1013-SS0-6IS-07R1-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-07R2-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-07R3-M	Y-B-1013	RCRA 8 Metals, Explosives
<b>06-28-Y-B1013-SS0-6IS-07R1-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-07R2-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-07R3-UM</b>	Y-B-1013	Supplemental Parameters
06-28-Y-B1013-SS0-6IS-08R1-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-08R2-M	Y-B-1013	RCRA 8 Metals, Explosives
06-28-Y-B1013-SS0-6IS-08R3-M	Y-B-1013	RCRA 8 Metals, Explosives
<b>06-28-Y-B1013-SS0-6IS-08R1-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-08R2-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-08R3-UM</b>	Y-B-1013	Supplemental Parameters
<b>06-28-Y-B1013-SS0-6IS-XXR1-UM</b>	Y-B-1013	RCRA 8 Metals
<b>06-28-Y-B1013-SS0-6IS-XXR2-UM</b>	Y-B-1013	RCRA 8 Metals
<b>06-28-Y-B1013-SS0-6IS-XXR3-UM</b>	Y-B-1013	RCRA 8 Metals
06-28-Y-B1013-SS0-6IS-01R1-EB	Y-B-1013	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each revetment prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-3E: Summary of ISM Samples to be Collected at Revetment Y-B-1035

Sample ID (1)	Sample Location	Sample Analyses
06-28-Y-B1035-SS0-6IS-01R1-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-01R2-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-01R3-M	Y-B-1035	RCRA 8 Metals, Explosives
<b>06-28-Y-B1035-SS0-6IS-01R1-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-01R2-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-01R3-UM</b>	Y-B-1035	Supplemental Parameters
06-28-Y-B1035-SS0-6IS-02R1-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-02R2-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-02R3-M	Y-B-1035	RCRA 8 Metals, Explosives
<b>06-28-Y-B1035-SS0-6IS-02R1-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-02R2-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-02R3-UM</b>	Y-B-1035	Supplemental Parameters
06-28-Y-B1035-SS0-6IS-03R1-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-03R2-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-03R3-M	Y-B-1035	RCRA 8 Metals, Explosives
<b>06-28-Y-B1035-SS0-6IS-03R1-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-03R2-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-03R3-UM</b>	Y-B-1035	Supplemental Parameters
06-28-Y-B1035-SS0-6IS-04R1-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-04R2-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-04R3-M	Y-B-1035	RCRA 8 Metals, Explosives
<b>06-28-Y-B1035-SS0-6IS-04R1-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-04R2-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-04R3-UM</b>	Y-B-1035	Supplemental Parameters
06-28-Y-B1035-SS0-6IS-05R1-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-05R2-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-05R3-M	Y-B-1035	RCRA 8 Metals, Explosives
<b>06-28-Y-B1035-SS0-6IS-05R1-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-05R2-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-05R3-UM</b>	Y-B-1035	Supplemental Parameters
06-28-Y-B1035-SS0-6IS-06R1-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-06R2-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-06R3-M	Y-B-1035	RCRA 8 Metals, Explosives
<b>06-28-Y-B1035-SS0-6IS-06R1-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-06R2-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-06R3-UM</b>	Y-B-1035	Supplemental Parameters
06-28-Y-B1035SS0-6IS-07R1-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-07R2-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-07R3-M	Y-B-1035	RCRA 8 Metals, Explosives
<b>06-28-Y-B1035SS0-6IS-07R1-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-07R2-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-07R3-UM</b>	Y-B-1035	Supplemental Parameters
06-28-Y-B1035SS0-6IS-08R1-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-08R2-M	Y-B-1035	RCRA 8 Metals, Explosives
06-28-Y-B1035-SS0-6IS-0783-M	Y-B-1035	RCRA 8 Metals, Explosives
<b>06-28-Y-B1035SS0-6IS-08R1-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-08R2-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-0783-UM</b>	Y-B-1035	Supplemental Parameters
<b>06-28-Y-B1035-SS0-6IS-XXR1-UM</b>	Y-B-1035	RCRA 8 Metals
<b>06-28-Y-B1035-SS0-6IS-XXR2-UM</b>	Y-B-1035	RCRA 8 Metals
<b>06-28-Y-B1035-SS0-6IS-XXR3-UM</b>	Y-B-1035	RCRA 8 Metals
06-28-Y-B1035-SS0-6IS-01R1-M-EB	Y-B-1035	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each revetment prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)



Table 5-3F: Summary of ISM Samples to be Collected at Revetment Y-A-962

Sample ID (1)	Sample Location	Sample Analyses
24-18-Y-A962-SS0-6IS-01R1-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-01R2-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-01R3-M	Y-A-962	RCRA 8 Metals, Explosives
<b>24-18-Y-A962-SS0-6IS-01R1-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-01R2-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-01R3-UM</b>	Y-A-962	Supplemental Parameters
24-18-Y-A962-SS0-6IS-02R1-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-02R2-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-02R3-M	Y-A-962	RCRA 8 Metals, Explosives
<b>24-18-Y-A962-SS0-6IS-02R1-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-02R2-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-02R3-UM</b>	Y-A-962	Supplemental Parameters
24-18-Y-A962-SS0-6IS-03R1-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-03R2-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-03R3-M	Y-A-962	RCRA 8 Metals, Explosives
<b>24-18-Y-A962-SS0-6IS-03R1-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-03R2-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-03R3-UM</b>	Y-A-962	Supplemental Parameters
24-18-Y-A962-SS0-6IS-04R1-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-04R2-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-04R3-M	Y-A-962	RCRA 8 Metals, Explosives
<b>24-18-Y-A962-SS0-6IS-04R1-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-04R2-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-04R3-UM</b>	Y-A-962	Supplemental Parameters
24-18-Y-A962-SS0-6IS-05R1-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-05R2-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-05R3-M	Y-A-962	RCRA 8 Metals, Explosives
<b>24-18-Y-A962-SS0-6IS-05R1-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-05R2-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-05R3-UM</b>	Y-A-962	Supplemental Parameters
24-18-Y-A962-SS0-6IS-06R1-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-06R2-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-06R3-M	Y-A-962	RCRA 8 Metals, Explosives
<b>24-18-Y-A962-SS0-6IS-06R1-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-06R2-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-06R3-UM</b>	Y-A-962	Supplemental Parameters
24-18-Y-A962-SS0-6IS-07R1-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-07R2-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-07R3-M	Y-A-962	RCRA 8 Metals, Explosives
<b>24-18-Y-A962-SS0-6IS-07R1-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-07R2-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-07R3-UM</b>	Y-A-962	Supplemental Parameters
24-18-Y-A962-SS0-6IS-08R1-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-08R2-M	Y-A-962	RCRA 8 Metals, Explosives
24-18-Y-A962-SS0-6IS-08R3-M	Y-A-962	RCRA 8 Metals, Explosives
<b>24-18-Y-A962-SS0-6IS-08R1-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-08R2-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-08R3-UM</b>	Y-A-962	Supplemental Parameters
<b>24-18-Y-A962-SS0-6IS-XXR1-UM</b>	Y-A-962	RCRA 8 Metals
<b>24-18-Y-A962-SS0-6IS-XXR2-UM</b>	Y-A-962	RCRA 8 Metals
<b>24-18-Y-A962-SS0-6IS-XXR3-UM</b>	Y-A-962	RCRA 8 Metals
24-18-Y-A962-SS0-6IS-01R1-M-EB	Y-A-962	RCRA 8 Metals, Explosives

**Footnotes:**

(1) Refer to Section 5.2.9 for explanation of sample nomenclature.

**Bold text: Samples will be unmilled for supplemental parameters analysis.**

**Samples will be unmilled and the DU (XX) will be assigned to each revetment prior to field mob.**

Samples will only be collected if it is determined the down gradient area needs to be sampled

Field QC sample (equipment blank)

Table 5-4: Summary of Analytical Methods, Sample Containers, Preservation, and Holding Times

Target Analytes	Matrix	Analytical Method (USEPA SW846)	Sample Volume/Container	Preservative	Holding Time
RCRA Metals 8	soil	6020A	1-2kg/1G Ziploc Bag	Cool to $\leq 6^{\circ}\text{C}$	14 days
Mercury	soil	7471B	1-2kg/1G Ziploc Bag	Cool to $\leq 6^{\circ}\text{C}$	17 days
Explosives	soil	8330B	1-2kg/1G Ziploc Bag	Cool to $\leq 6^{\circ}\text{C}$	14 days
pH	soil	9045D	1-2kg/1G Ziploc Bag	Cool to $\leq 6^{\circ}\text{C}$	14 days
TOC	soil	Lloyd Khan	1-2kg/1G Ziploc Bag	Cool to $\leq 6^{\circ}\text{C}$	14 days
Particle Size	soil	ASTM D422 (sieve & hydrometer)	1-2kg/1G Ziploc Bag	Cool to $\leq 6^{\circ}\text{C}$	14 days
CEC	soil	USDA No. 61	1-2kg/1G Ziploc Bag	Cool to $\leq 6^{\circ}\text{C}$	14 days

**Footnotes:**

USEPA = U.S. Environmental Protection Agency

kg = kilograms

G = gallon

Table 6-1A: Comparison of Igloo Project Action Limits (PALs) to Laboratory Reporting Limits

Chemical	CAS No.	Project Action Limit (PAL) (mg/kg) (1)	Limit of Quantitation (mg/kg) (2)	Limit of Detection (mg/kg) (2)	Detection Limit (mg/kg) (2)
<b>Metals</b>					
Arsenic	7440-38-2	7.07	0.5	0.3	0.07
Barium	7440-39-3	118.00	0.25	0.2	0.07
Cadmium	7440-43-9	32.00	0.1	0.08	0.03
Chromium (total)	7440-47-3	96.60	0.5	0.2	0.075
Lead	7439-92-1	120.00	0.1	0.05	0.02
Mercury	7487-94-7	23.50	0.1	0.04	0.01
Selenium	7782-49-2	0.52	0.5	0.1	0.05
Silver	7440-22-4	391.00	0.1	0.05	0.02
<b>Explosives</b>					
1,3,5-Trinitrobenzene	99-35-4	62.10	0.1	0.075	0.013
3,5-Dinitroaniline	618-87-1	25.00	0.1	0.075	0.03
1,3-Dinitrobenzene	99-65-0	6.00	0.1	0.075	0.022
2,4-Dinitrotoluene	121-14-2	6.00	0.1	0.075	0.028
2,6-Dinitrotoluene	606-20-2	3.56	0.1	0.075	0.031
2,4,6-Trinitrotoluene (TNT)	118-96-7	36.00	0.1	0.075	0.031
2-Amino-4,6-Dinitrotoluene	35572-78-2	7.70	0.1	0.075	0.034
2-Nitrotoluene (o-Nitrotoluene)	88-72-2	12.00	0.1	0.075	0.037
3-Nitrotoluene (m-Nitrotoluene)	99-08-1	6.16	0.1	0.075	0.037
4-Amino-2,6-Dinitrotoluene	19406-51-0	7.64	0.1	0.075	0.034
4-Nitrotoluene (p-Nitrotoluene)	99-99-0	12.00	0.1	0.075	0.037
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	83.10	0.1	0.075	0.025
Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	479-45-8	62.10	0.1	0.075	0.037
Nitrobenzene	98-95-3	12.00	0.1	0.075	0.028
Nitroglycerin	55-63-0	6.16	0.2	0.15	0.061
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	2740.00	0.1	0.075	0.037
Pentaerythritol Tetranitrate (PETN)	78-11-5	10.50	0.5	0.25	0.11

**Footnotes:**

(1) See Table 8-1A for selection of igloo project action limits (PALs)

(2) LOQs/LODs/DLs provided by Agriculture &amp; Priority Pollutants Labs (APPL)

Table 6-1B: Comparison of Revetment Project Action Limits (PALs) to Laboratory Reporting Limits

Chemical	CAS No.	Project Action Limit (PAL) (mg/kg)	Limit of Quantitation (mg/kg)	Limit of Detection (mg/kg)	Detection Limit (mg/kg)
<b>Metals</b>					
Arsenic	7440-38-2	7.07	0.5	0.3	0.07
Barium	7440-39-3	118.00	0.25	0.2	0.07
Cadmium	7440-43-9	7.00	0.1	0.08	0.03
Chromium (total)	7440-47-3	21.80	0.5	0.2	0.075
Lead	7439-92-1	42.70	0.1	0.05	0.02
Mercury	7487-94-7	12.80	0.1	0.04	0.01
Selenium	7782-49-2	0.52	0.5	0.1	0.05
Silver	7440-22-4	54.70	0.1	0.05	0.02
<b>Explosives</b>					
1,3,5-Trinitrobenzene	99-35-4	62.10	0.1	0.075	0.013
3,5-Dinitroaniline	618-87-1	25.00	0.1	0.075	0.03
1,3-Dinitrobenzene	99-65-0	1.03	0.1	0.075	0.022
2,4-Dinitrotoluene	121-14-2	6.00	0.1	0.075	0.028
2,6-Dinitrotoluene	606-20-2	3.56	0.1	0.075	0.031
2,4,6-Trinitrotoluene (TNT)	118-96-7	36.00	0.1	0.075	0.031
2-Amino-4,6-Dinitrotoluene	35572-78-2	7.70	0.1	0.075	0.034
2-Nitrotoluene (o-Nitrotoluene)	88-72-2	12.00	0.1	0.075	0.037
3-Nitrotoluene (m-Nitrotoluene)	99-08-1	6.16	0.1	0.075	0.037
4-Amino-2,6-Dinitrotoluene	19406-51-0	7.64	0.1	0.075	0.034
4-Nitrotoluene (p-Nitrotoluene)	99-99-0	12.00	0.1	0.075	0.037
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	81.30	0.1	0.075	0.025
Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	479-45-8	11.80	0.1	0.075	0.037
Nitrobenzene	98-95-3	12.00	0.1	0.075	0.028
Nitroglycerin	55-63-0	6.16	0.2	0.15	0.061
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	682.00	0.1	0.075	0.037
Pentaerythritol Tetranitrate (PETN)	78-11-5	10.50	0.5	0.25	0.11

**Footnotes:**

- (1) See Table 8-1B for selection of revetment project action limits (PALs)  
(2) LOQs/LODs/DLs provided by Agriculture & Priority Pollutants Labs (APPL)

Table 8-1A: Human Health and Ecological Soil Screening Levels for Igloos

Chemical	CAS No.	NMED SSL for Residential Cancer (mg/kg)	NMED SSL for Residential Noncancer (mg/kg)	USEPA Residential RSL (mg/kg)	USEPA Residential RSL Noncancer (mg/kg)	Plants Tier 1 Effect Concentration NOAEL (mg/kg)	Plants Tier 2 Effect Concentration NOAEL (mg/kg)	Project Action Limit (PAL) (mg/kg)
<b>Metals</b>								
Arsenic	7440-38-2	<b>7.07</b>	13.00	-	-	18.00	91.00	7.07
Barium	7440-39-3	-	15600.00	-	-	<b>118.00</b>	261.00	118.00
Cadmium	7440-43-9	85900.00	70.50	-	-	<b>32.00</b>	160.00	32.00
Chromium (Total)	7440-47-3	96.60	45200.00	-	-	NC	NC	96.60
Lead	7439-92-1	400 (IEUBK)		-	-	<b>120</b>	576	120.00
Mercury	7487-94-7	-	<b>23.50</b>	-	-	34.90	64.00	23.50
Selenium	7782-49-2	-	391.00	-	-	<b>0.52</b>	3.40	0.52
Silver	7440-22-4	-	<b>391.00</b>	-	-	560.00	2810.00	391.00
<b>Explosives</b>								
1,3,5-Trinitrobenzene	99-35-4	-	-	-	2200	<b>62.1</b>	-	62.10
3,5-Dinitroaniline	618-87-1	-	<b>25.00</b>	-	-	33	-	25.00
1,3-Dinitrobenzene	99-65-0	-	-	-	6.3	<b>6</b>	-	6.00
2,4-Dinitrotoluene	121-14-2	17.10	123.00	-	-	<b>6</b>	60	6.00
2,6-Dinitrotoluene	606-20-2	<b>3.56</b>	18.50	-	-	6	-	3.56
2,4,6-Trinitrotoluene (TNT)	118-96-7	211.00	<b>36.00</b>	-	-	62.1	126	36.00
2-Amino-4,6-Dinitrotoluene	35572-78-2	-	<b>7.70</b>	-	-	14	140	7.70
2-Nitrotoluene (o-Nitrotoluene)	88-72-2	31.60	70.40	-	-	<b>12</b>	-	12.00
3-Nitrotoluene (m-Nitrotoluene)	99-08-1	-	<b>6.16</b>	-	-	12	-	6.16
4-Amino-2,6-Dinitrotoluene	19406-51-0	-	<b>7.64</b>	-	-	33	330	7.64
4-Nitrotoluene (p-Nitrotoluene)	99-99-0	333.00	247.00	-	-	<b>12</b>	-	12.00
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	<b>83.10</b>	301.00	-	-	1370	-	83.10
Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	479-45-8	-	156.00	-	-	<b>62.1</b>	-	62.10
Nitrobenzene	98-95-3	60.40	131.00	-	-	<b>12</b>	-	12.00
Nitroglycerin	55-63-0	313.00	<b>6.16</b>	-	-	21	210	6.16
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	-	3850.00	-	-	<b>2740</b>	3560	2740.00
Pentaerythritol Tetranitrate (PETN)	78-11-5	-	-	1300.00	570	<b>10.5</b>	-	10.50

**Footnotes:**

NMED SSLs: Risk Assessment Guidance, Volume 1, June 2022; lowest of cancer and noncancer was selected for human health SSL

USEPA RSLs: USEPA Regional Screening Level Summary Table, November 2021; value multiplied by 10 to adjust to a 1x10<sup>-5</sup> risk level for carcinogenic compounds, if applicable

Metals: USEPA Method 6020A

Explosives: USEPA Method 8330B

Endpoints:

c = carcinogenic

n = noncarcinogenic

IEUBK = Integrated Exposure Uptake Biokinetic Model

Surrogate value assigned

**Bold Text Selected as PAL**

NC - no criteria

Table 8-1B: Human Health and Ecological Soil Screening Levels for Revetments

Chemical	CAS No.	NMED SSL for Residential Cancer (mg/kg)	NMED SSL for Residential Noncancer (mg/kg)	USEPA Residential RSL (mg/kg)	Residential RSL Noncancer (mg/kg)	Plants Tier 1 Effect Concentration NOAEL (mg/kg)	Plants Tier 2 Effect Concentration NOAEL (mg/kg)	Deer Mouse Tier 1 SL (mg/kg)	Project Action Limit (PAL) (mg/kg)
<b>Metals</b>									
Arsenic	7440-38-2	<b>7.07</b>	13.00	-	-	18.00	91.00	9.45	7.07
Barium	7440-39-3	-	15600.00	-	-	<b>118.00</b>	261.00	471.00	118.00
Cadmium	7440-43-9	85900.00	70.50	-	-	32.00	160.00	<b>7.00</b>	7.00
Chromium (Total)	7440-47-3	96.60	45200.00	-	-	NC	NC	21.80	21.80
Lead	7439-92-1	400 (IEUBK)		-	-	120	576	<b>42.7</b>	42.70
Mercury	7487-94-7	-	<b>23.50</b>	-	-	34.90	64.00	<b>12.80</b>	12.80
Selenium	7782-49-2	-	391.00	-	-	<b>0.52</b>	3.40	1.30	0.52
Silver	7440-22-4	-	391.00	-	-	560.00	2810.00	<b>54.70</b>	54.70
<b>Explosives</b>									
1,3,5-Trinitrobenzene	99-35-4	-	-	-	2200	<b>62.1</b>	-	122	62.10
3,5-Dinitroaniline	618-87-1	-	<b>25.00</b>	-	-	33	-	<b>87.2</b>	25.00
1,3-Dinitrobenzene	99-65-0	-	-	-	6.3	6	-	<b>1.03</b>	1.03
2,4-Dinitrotoluene	121-14-2	17.10	123.00	-	-	6	60	24.4	6.00
2,6-Dinitrotoluene	606-20-2	<b>3.56</b>	18.50	-	-	6	-	16.1	3.56
2,4,6-Trinitrotoluene (TNT)	118-96-7	211.00	<b>36.00</b>	-	-	62.1	126	315	36.00
2-Amino-4,6-Dinitrotoluene	35572-78-2	-	<b>7.70</b>	-	-	14	140	126	7.70
2-Nitrotoluene (o-Nitrotoluene)	88-72-2	31.60	70.40	-	-	<b>12</b>	-	81	12.00
3-Nitrotoluene (m-Nitrotoluene)	99-08-1	-	<b>6.16</b>	-	-	12	-	97.3	6.16
4-Amino-2,6-Dinitrotoluene	19406-51-0	-	<b>7.64</b>	-	-	33	330	87.2	7.64
4-Nitrotoluene (p-Nitrotoluene)	99-99-0	333.00	247.00	-	-	<b>12</b>	-	178	12.00
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	83.10	301.00	-	-	1370	-	<b>81.3</b>	81.30
Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	479-45-8	-	156.00	-	-	62.1	-	<b>11.8</b>	11.80
Nitrobenzene	98-95-3	60.40	131.00	-	-	<b>12</b>	-	53.6	12.00
Nitroglycerin	55-63-0	313.00	<b>6.16</b>	-	-	21	210	876	6.16
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	-	3850.00	-	-	2740	3560	<b>682</b>	682.00
Pentaerythritol Tetranitrate (PETN)	78-11-5	-	-	1300.00	570	<b>10.5</b>	-	636	10.50

**Footnotes:**

NMED SSLs: Risk Assessment Guidance, Volume 1, June 2022; lowest of cancer and noncancer was selected for human health SSL

USEPA RSLs: USEPA Regional Screening Level Summary Table, November 2021; value multiplied by 10 to adjust to a 1x10<sup>-5</sup> risk level for carcinogenic compounds, if applicable

Metals: USEPA Method 6020A

Explosives: USEPA Method 8330B

Endpoints:

c = carcinogenic

n = noncarcinogenic

IEUBK = Integrated Exposure Uptake Biokinetic Model

Surrogate value assigned

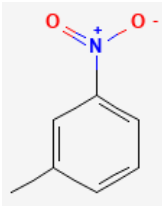
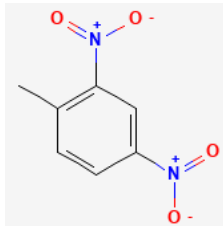
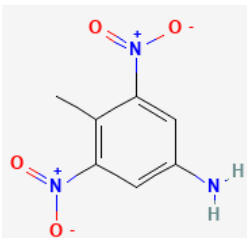
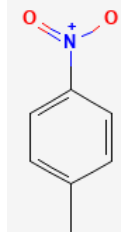
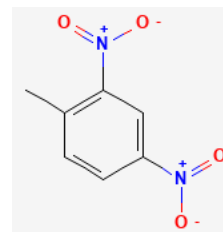
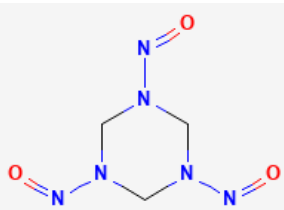
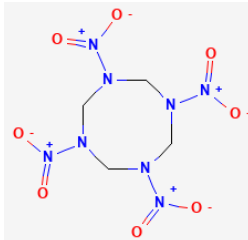
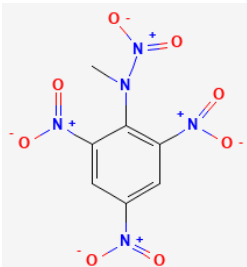
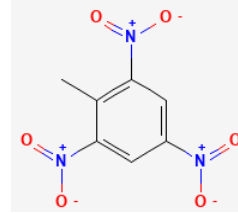
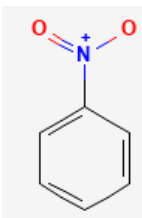
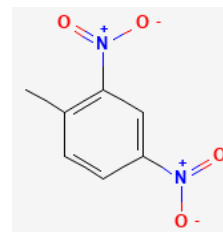
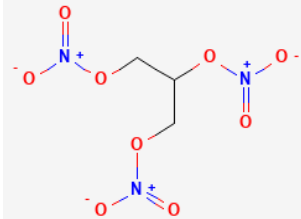
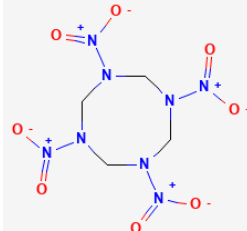
**Bold Text Selected as PAL**

NC - no criteria

Table 8-2: Surrogate Selection for Explosive Analytes

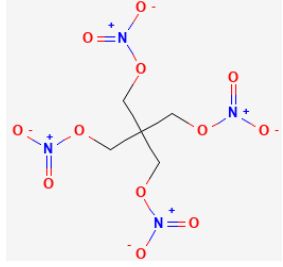
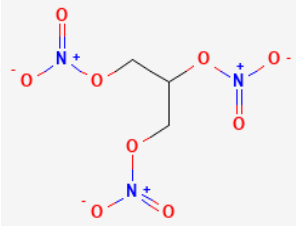
Analyte	CAS No.	Structure	Plant Tier 1 NOAEL (mg/kg)	Assigned Surrogate	Surrogate Structure	Rationale
1,3,5-Trinitrobenzene	99-35-4		62.1	2,4,6-Trinitrotoluene (TNT)		Ring substitution pattern of charged substituents the same; methyl substituent provides neutral contribution
3,5-Dinitroaniline	618-87-1		33	4-Amino-2,6-Dinitrotoluene		Nitro and amine substitution pattern the same; methyl substituent provides neutral contribution
1,3-Dinitrobenzene	99-65-0		6	2,4-Dinitrotoluene		Two nitro substituents meta to each other on the aromatic ring; methyl substituent provides neutral contribution
2,4-Dinitrotoluene	121-14-2		6	Tier 1 Plant NOAEL provided in NMED RAG, V.2 (NMED 2017, revised)		
2,6-Dinitrotoluene	606-20-2		6	2,4-Dinitrotoluene		Two nitro substituents meta to each other on the aromatic ring; methyl substituent provides neutral contribution
2,4,6-Trinitrotoluene (TNT)	118-96-7		62.1	Tier 1 Plant NOAEL provided in NMED RAG, V.2 (NMED 2017, revised)		
2-Amino-4,6-Dinitrotoluene	35572-78-2		14	Tier 1 Plant NOAEL provided in NMED RAG, V.2 (NMED 2017, revised)		
2-Nitrotoluene (o-Nitrotoluene)	88-72-2		12	2,4-Dinitrotoluene		One nitro substituent ortho to the methyl group does not destabilize the aromatic ring as much as two nitro substituents to each other on the aromatic ring; methyl substituent provides neutral contribution; safety factor of 2 applied (1)

Table 8-2: Surrogate Selection for Explosive Analytes

Analyte	CAS No.	Structure	Plant Tier 1 NOAEL (mg/kg)	Assigned Surrogate	Surrogate Structure	Rationale
3-Nitrotoluene (m-Nitrotoluene)	99-08-1		12	2,4-Dinitrotoluene		One nitro substituent ortho to the methyl group does not destabilize the aromatic ring as much as two nitro substituents to each other on the aromatic ring; methyl substituent provides neutral contribution; safety factor of 2 applied (1)
4-Amino-2,6-Dinitrotoluene	19406-51-0		33	Tier 1 Plant NOAEL provided in NMED RAG, V.2 (NMED 2017, revised)		
4-Nitrotoluene (p-Nitrotoluene)	99-99-0		12	2,4-Dinitrotoluene		One nitro substituent ortho to the methyl group does not destabilize the aromatic ring as much as two nitro substituents to each other on the aromatic ring; methyl substituent provides neutral contribution; safety factor of 2 applied (1)
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4		1370	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)		The triazine ring structure shows more aromatic-like stability than the tetrazocine ring; safety factor of 0.5 applied (1)
Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	479-45-8		62.1	2,4,6-Trinitrotoluene (TNT)		The nitramine can stabilize the aromatic ring; the constituent pattern is similar to TNT: 1, 2, 4, 6
Nitrobenzene	98-95-3		12	2,4-Dinitrotoluene		One nitro substituent ortho to the methyl group does not destabilize the aromatic ring as much as two nitro substituents to each other on the aromatic ring; methyl substituent provides neutral contribution; safety factor of 2 applied (1)
Nitroglycerin	55-63-0		21	Tier 1 Plant NOAEL provided in NMED RAG, V.2 (NMED 2017, revised)		
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0		2740	Tier 1 Plant NOAEL provided in NMED RAG, V.2 (NMED 2017, revised)		



**Table 8-2: Surrogate Selection for Explosive Analytes**

Analyte	CAS No.	Structure	Plant Tier 1 NOAEL (mg/kg)	Assigned Surrogate	Surrogate Structure	Rationale
Pentaerythritol Tetranitrate (PETN)	78-11-5		10.5	Nitroglycerin		End group substituent on the alkyl chain are the same; central portion of both molecules consists of linear carbon chains; safety factor of 0.5 applied (1) to account for the reactivity of nitro groups attached directly on the main chain

**FOOTNOTES:**

Modified SL = (SL of surrogate, mg/kg)\* Safety Factor; Sample Calculation: E.g. PETN SL = (21 mg/kg)\*0.5 = 10.5 mg/kg

## Appendices

## Appendix A: MRA Memorandum

(Memorandum for Secretary of the Army: *Authorization to use the Fort Wingate Launch Complex in Support of Department of Defense Requirements*)



## THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3010

ACQUISITION,  
TECHNOLOGY,  
AND LOGISTICS

JAN - 6 2017

### MEMORANDUM FOR SECRETARY OF THE ARMY

SUBJECT: Authorization to use the Fort Wingate Launch Complex in Support of Department of Defense Requirements

Fort Wingate Ammunition Storage Depot, New Mexico, was closed pursuant to title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Public Law 100-526; title 10, U.S.C., section 2687 note). Through the authorized property disposal process, the Army retained a portion of the installation to support the Ballistic Missile Defense Organization (BMDO) (now the Missile Defense Agency (MDA)) for use as a launch site in support of Theater Missile Defense. The action was approved by the Assistant Secretary of Defense for Economic Security.

In addition to requirements supporting the MDA mission, the Department has identified requirements for Fort Wingate Launch Complex (FWLC) to support the Army Lower Tier Project Office and Precision Fires Rocket and Missile Systems Project Office and noted possible future use to support the Navy Integrated Fire Control – Counter Air program and future hypersonic programs. These additional requirements will require the use of the FWLC well beyond the 2025 timeframe.

I therefore approve the use of FWLC to support all Department of Defense (DoD) activities. This expands the previous approval of the FWLC to support the BMDO (now MDA).

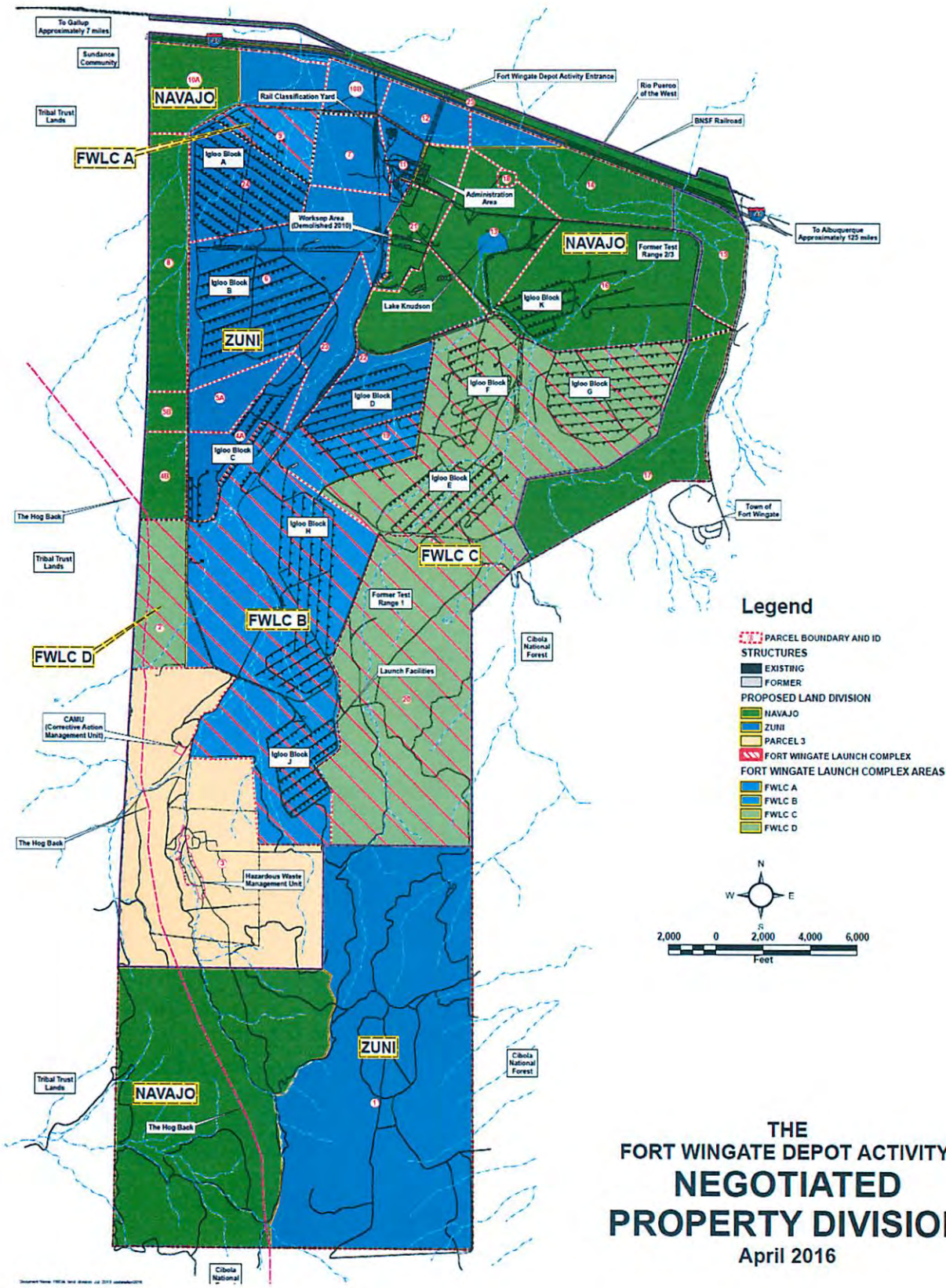
The FWLC consists of approximately 6,500 acres as shown in the attached document. It includes launch facilities and supporting structures required to support DoD activities. Should it become necessary, the Army may incorporate Parcel 3, consisting of approximately 1,800 acres, into the FWLC.

  
Frank Kendall

Attachments:  
As stated

cc:  
Secretary of the Navy  
Secretary of the Air Force  
Director, Operational Test and Evaluation  
Assistant Secretary of Defense for Acquisition  
Director, Missile Defense Agency  
Director, Test Resource Management Center





THE  
 FORT WINGATE DEPOT ACTIVITY  
 NEGOTIATED  
 PROPERTY DIVISION  
 April 2016

## Appendix B: NMED Correspondence

(ARMY Presentation to NMED: Fort Wingate Depot Activity Igloo Apron & Revetment Soil Samples, 08 November 2018; ARMY/NMED email correspondence on ISM sampling at igloo exteriors and revetments, 01 July 2020 – 04 March 2021; ARMY/NMED email correspondence on line-of-evidence 22 December 2021 through 13 April 2022)

# FORT WINGATE DEPOT ACTIVITY IGLOO APRON & REVETMENT SOIL SAMPLES

Prepared by USACE Albuquerque  
Environmental Engineering  
Pate, Daisy  
For Army BRAC/NMED HWB  
08 November 2018



*“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”*



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# PURPOSE

- Evaluate historical data at apron & revetments to determine the probability that similar features which have not been sampled would contain contamination
- Mr. Cobrain suggested review of igloo aprons & revetments analytical data
- Samples analyzed to date:
  - 308 aprons (out of 732)
  - 198 revetments (out of 285)

## Bottom Line Up Front

- The government proposes no further soil sampling at the igloo apron & revetment sites because of the lack of screening level exceedances at the sites that have been sampled and the negligible probability of screening level exceedances at unsampled sites.



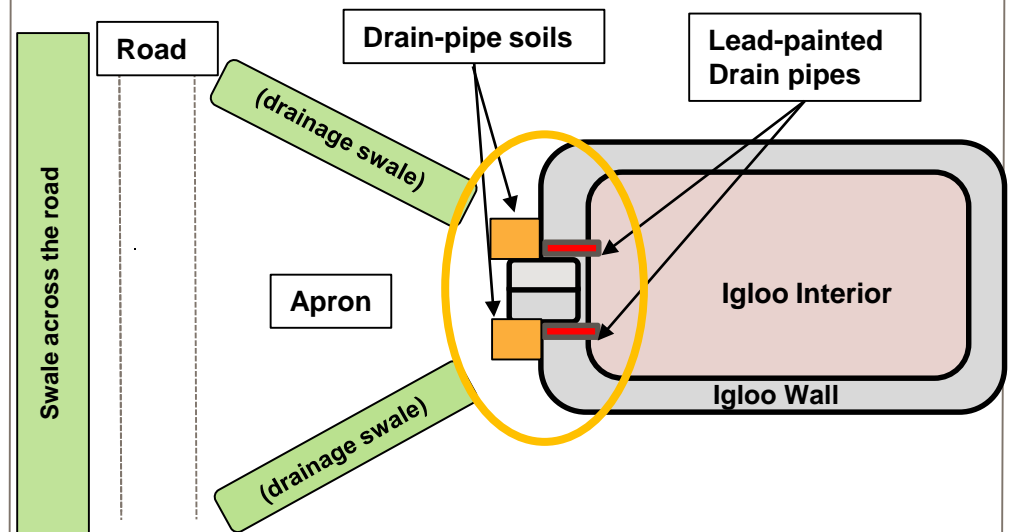
## Revetment

Temporary Ordnance Storage

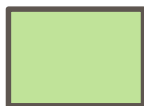


## Igloo

Long-term Ordnance Storage



\* drawing not to scale



= SOIL SAMPLE AREAS



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# HISTORY

- FWDA Land use is dominated by structures historically used for storage of high-explosive munitions and bulk explosives in the Magazine Areas (Igloo Blocks) and the protection and buffer zones that surround them.
- Surficial geology is Chinle formation remnants and alluvial deposits known to contain levels of metals higher than other surficial deposits.
  - Background soil data – Lead 12.4 mg/kg (95% upper tolerance limit) (Shaw 2010)
- Igloo Block Samples analyzed for RCRA 8 & Explosives
- Lead (Pb) is the COPC based on analytical results
- SL for discrete samples NMED residential = 400 mg/kg
- SL for composites =  $0.5 \times$  NMED residential = 200 mg/kg

# PREVIOUS INVESTIGATION HISTORY

## 1997 RI Feasibility Study

- 8% of sites were sampled at random
  - 61 Igloos
  - 22 Revetments
- 3 samples at each site
  - Igloos
    - 1 in Apron
    - 2 at drain locations
  - Revetments
    - 3 samples equally spaced

## Since 2008 by Parcel & AOC

- Aprons
- Revetments
- NMED Accepted data
  - RAR's
  - RFI's
  - PIIM's
  - Investigation Reports



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# PREVIOUS INVESTIGATION HISTORY

## Summary of Sampling Events Since 2008

Block	AOC	Date (year)	# Aprons in study area	# Aprons Sampled	Total # Revet	# Revet Sampled	COPC
A	18	2008	100	100	71	70	Expl., RCRA 8
B	28	2011	100	92	55	55	Expl., RCRA 8
C	29	2008	36	36	36	33	Expl., RCRA 8
D	30	2009	53	53	13	13	Pb, Expl.
K	41	2012	27	27	27	27	Pb, As, Expl.
<b>SUM TOTAL</b>			<b>316</b>	<b>308</b>	<b>202</b>	<b>198</b>	



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# STATISTICAL APPROACH- ASSUMPTIONS

- There are 2 independent data sets:
  - 1) Aprons
  - 2) Revetments
- All igloo blocks have historical use of storing High Explosives Munitions
- All igloo blocks have used the same sampling method
- Data represent soil from the same relative location e.g. apron or revetment
- Decision can be made with complete certainty of “clean or dirty”
  - Clean – soil concentration < NMED residential SSL of 400 mg/kg
  - Dirty – soil concentration > NMED residential SSL of 400 mg/kg



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## APRON DATA - 308 SAMPLES

- **Zero Exceedances** of NMED SSL's for Lead
- Lead at some drain-pipe soil locations exceeded NMED Residential SSL's
- Source of lead from paint on drain pipe
- Drain-pipe soils could have transported to aprons so
- COC limited to lead



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# APRON ANALYSIS FOR LEAD

## STATISTICAL INPUT & CONCLUSIONS

$N$  = Total # of igloo aprons = **732**

$n$  = # of igloo aprons sampled = **308**

$k$  = # of failures for igloos aprons = **0**

- Soil samples were collected from **308** ( $n$ ) of **732** ( $N$ ) aprons
- All soil samples were demonstrated to be “clean” ( $k = 0$ )
- $k$  = “failures” means apron samples that exceed background concentrations and risk-based screening limits
- 95% confidence that at least 99% (**99.32%**) of all aprons are “clean”
- **Conclusion:** Extremely likely that all remaining aprons are clean



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## REVETMENT DATA - 198 SAMPLES

- Same analytical suite collected as in aprons (RCRA 8, Exp.)
- **Zero Exceedances** of NMED SSL's
- Statistical analysis was confined to lead only



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# REVTMENT ANALYSIS FOR LEAD STATISTICAL INPUT & CONCLUSIONS

$N$  = Total # of revetments = **285**

$n$  = # of revetments sampled = **198**

$k$  = # of failures\* for revetments = **0**

- Soil samples were collected from **198** ( $n$ ) of the **285** ( $N$ ) revetments
- All soil samples were demonstrated to be “clean” ( $k = 0$ )
- 95% confidence that at least 99% (**99.30%**) of all revetments are “clean”
- **Conclusion:** Extremely likely that all remaining revetments are clean

\*  $k$  = “failures” means revetments that exceed background concentrations and risk-based screening limits



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# LEAD DRAIN DATA

## Question from NMED:

“Is there a correlation between detections in drain data with data from the aprons?”

## Approach:

Drain-pipe soil samples with lead (Pb) detections above 200 mg/kg were compared to the same igloos' apron samples with lead (Pb) detections.



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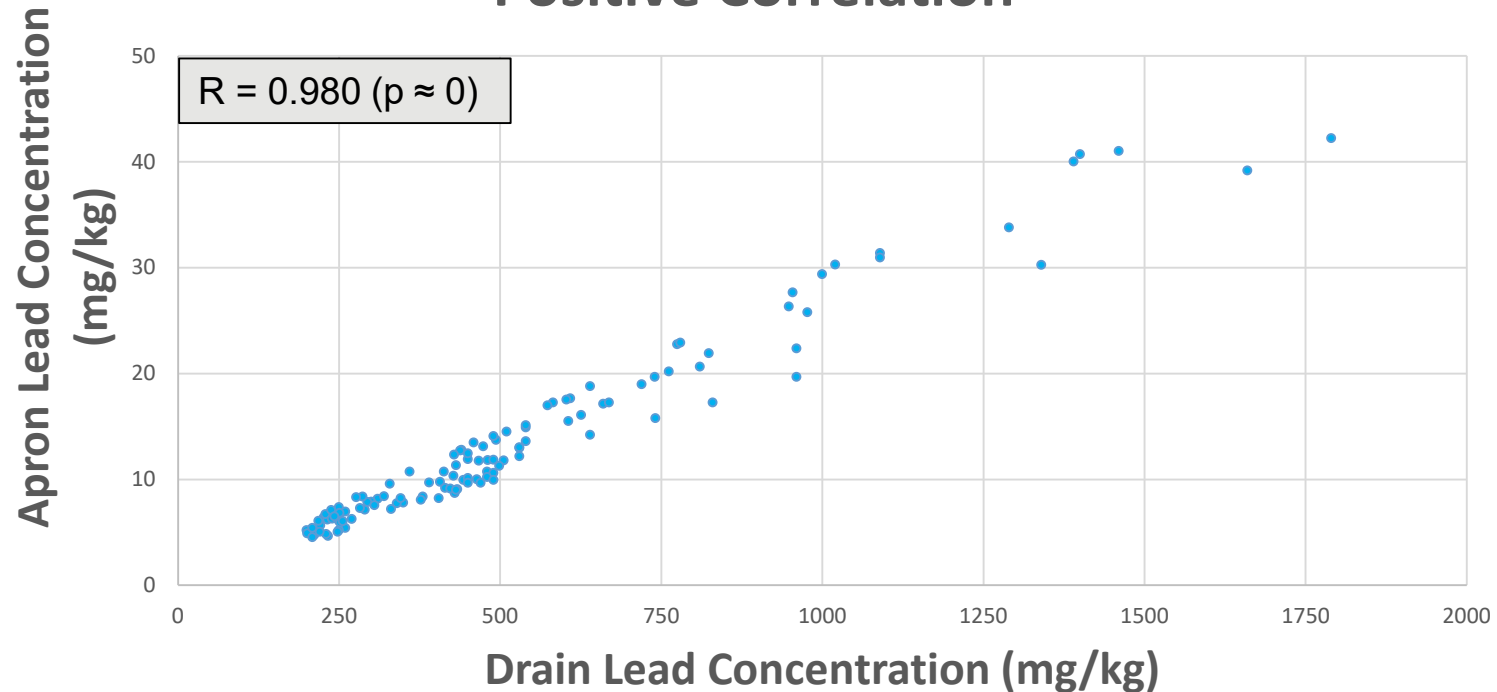


# RESULTS

- Detections in drain data with data from the aprons were graphed
- Graphical representations of the concentrations of lead in the aprons versus the concentrations of lead in the drains include:
  - Hypothetical Positive Correlation Graph
  - Hypothetical No Correlation Graph
  - FWDA data sets (complete)

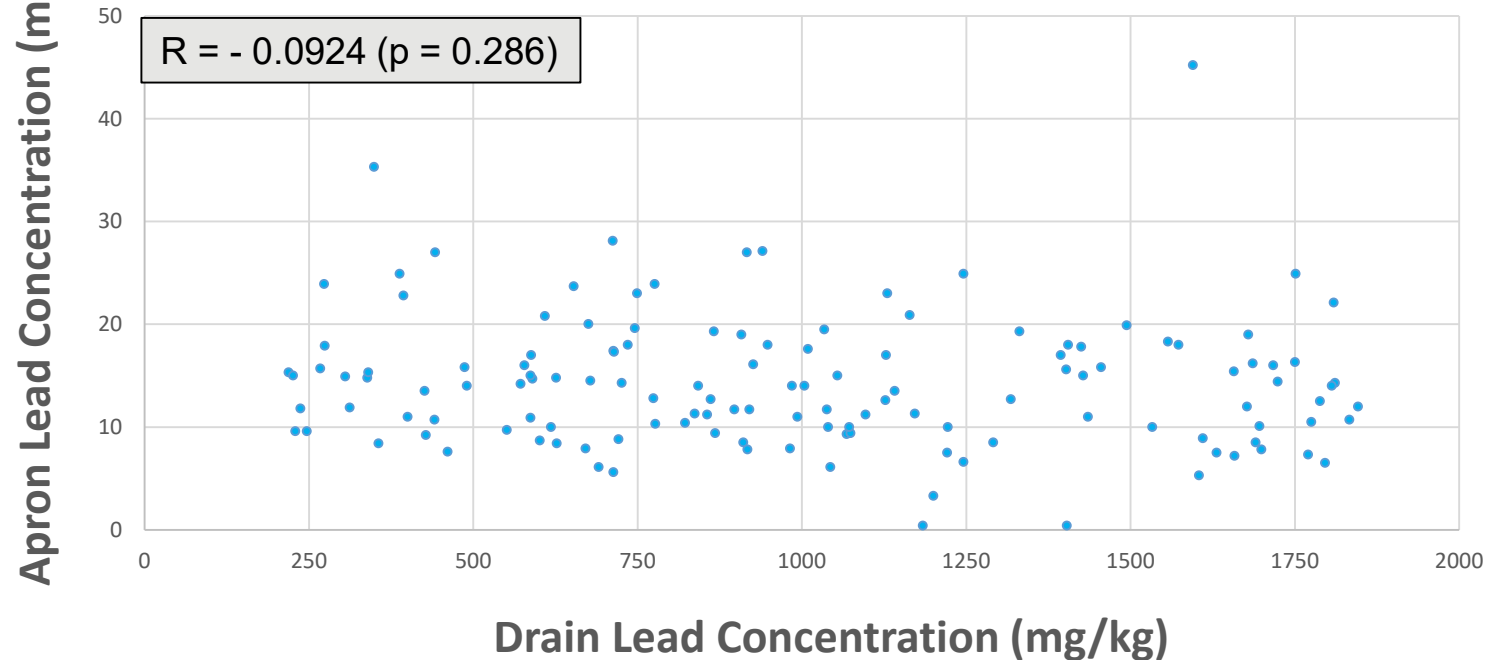


## Hypothetical Pb in Apron vs Drain Positive Correlation



## Hypothetical Pb in Apron vs Drain

### No Correlation



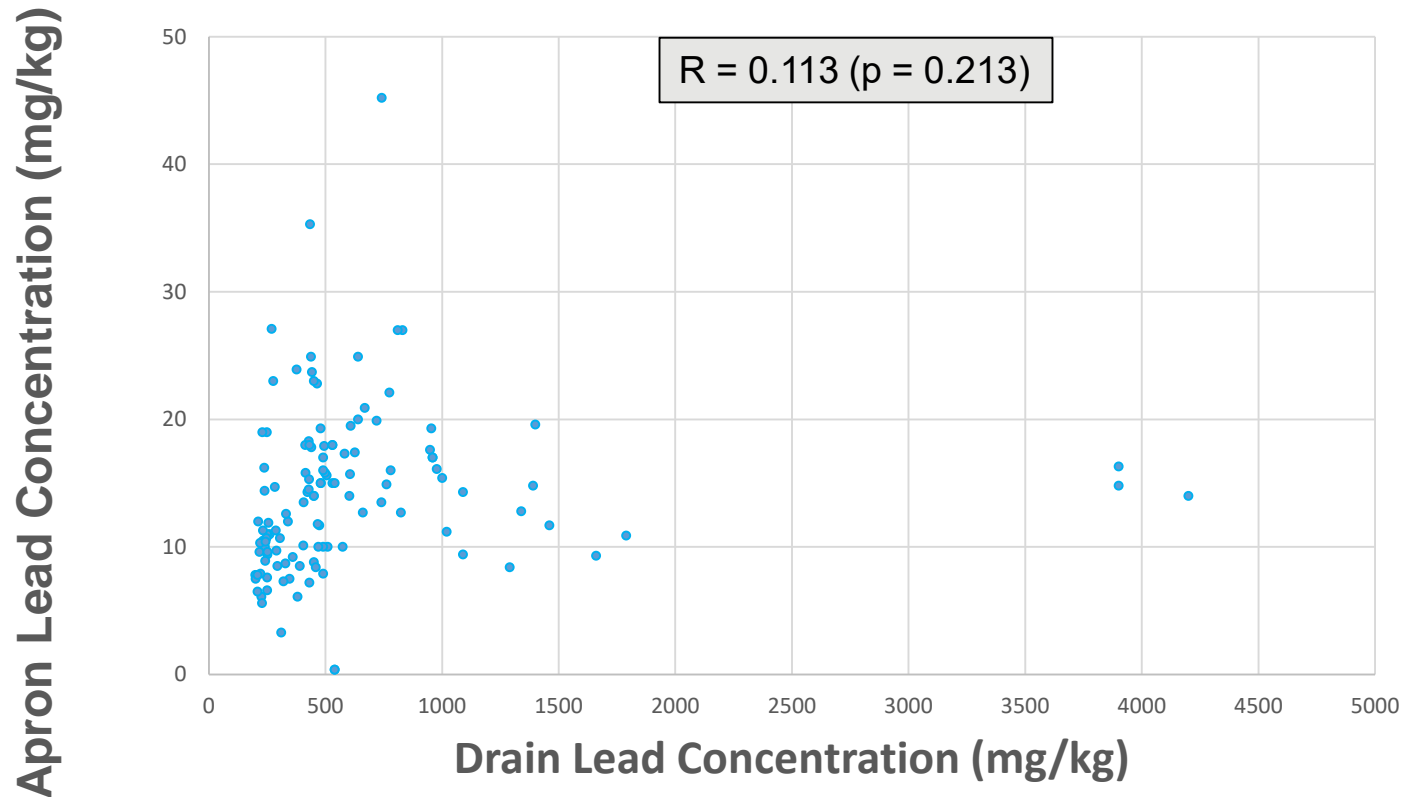
- If no relationship between drain-pipe soil lead and lead in aprons exists → expect similar graph
- Conclude → lead is NOT migrating to aprons



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## Apron vs Drain Lead (Pb) Sample Results Drain Sample >200 ppm – Entire Data Set



- No relationship between lead in drain-pipe soil and aprons exists,
- Therefore, lead is not migrating to aprons



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# ARMY CONCLUSIONS

- Extremely likely that all unsampled aprons and revetments are clean
- Does “dirty” soil at drain = higher Pb concentrations in the apron drainage? → **NO**
  - There is no relationship (significant correlation) between apron & drain Pb concentrations
  - Previous removals have shown Pb contamination is limited to within a 1 ft<sup>3</sup> soil volume directly under each drain outlet and is not migrating to the aprons
- **Overall conclusion → No further testing at igloo aprons and revetments**

# ARMY RECOMMENDATIONS

- Prepare a formal recommendation requesting no further sampling at igloo apron & revetment sites



Questions?



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# REFERENCE DOCUMENTS FOR DATA REVIEW

<b><u>References</u></b>		
1	P24 RAR	Final Release Assessment Report Parcel 24, Jan 2014.
2	P6 RFI	Final RCRA Facility Investigation Report Parcel 6, Sept 2012.
3	P4 RAR	Final Release Assessment Report Parcel 4A,Igloo Block C, Mar 2009
4	P22 RFI	Final RCRA Facility Investigation Report Parcel 22 Revision 2, May 2015.
5	P16 RFI	Final RCRA Facility Investigation Parcel 16, Aug 2013.
6	RI/FS	Remedial Invest./Feasibility Study & RCRA Corrective Action Program, 1997
7	P22 PIIM	Final Permittee-Initiated Interim Measures Report Parcel 22, Feb 2015.pdf
8	P6 PIIM	Final Permittee-Initiated Interim Measures Report Parcel 6 AOC 28 ...2016
9	FWDA	FWDA Historical Data
10	P16 PIIM	Final Permittee-Initiated Interim Measures Report Parcel 22, Dec 2017
11	P9 IR	Investigation Report, Igloo Block A, Parcel 9, Aug 2018.
12	P4 PIIM	Final Permittee-Initiated Interim Measures Report P4A April 15, 2014



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**Aprons and Revetments - NMED Email Communication Table**

<u>Parcel</u>	<u>Topic</u>	<u>PM</u>	<u>Contractor(s)</u>	<u>NMED Deadline (if any)</u>	<u>Status</u>
Igloos	Igloo Aprons and Revetments - DU's, Igloo Block A reference, 6-hottest areas sampling approach	Smith	In-house	N/A	NMED Response received 3/04/21
<b>Army Email</b>	<b>NMED Response Date</b>	<b>Notes</b>			
	3/4/2021	<p>NMED responded each of the ARMY's 8 points from 1/26/2021.</p> <p>1. NMED Response: Yes. Please realize that, while I don't have the exact number with me now, this exception allowed FWDA to eliminate over 95% of the locations sampled in Igloo Block A from further investigation. NMED is concerned that FWDA appears unable to follow up on the less than 5% of sampling locations that did not meet the screening criteria.</p> <p>2. NMED Response: Yes.</p> <p>3. NMED Response: NMED has acknowledged this fact in the past and will continue to do so. The Permittee can provide photographic evidence of the topography and natural drainage paths along the roads for these igloos.</p> <p>4. NMED Response: NMED will accept discrete sampling, but without a scale on the provided figure, it is difficult to estimate how many discrete samples will be required.</p> <p>5. NMED Response: Yes, the reference is to unsampled igloo blocks. This approach is directly related to the completion of the resampling of the six hottest igloo aprons/revetments in Igloo Block A. If this sampling effort indicates that there are no identifiable hot spots in these sampling locations, then the two-step approach indicated above would be acceptable.</p> <p>6. NMED Response: Noted. NMED assumes this is in reference to work plans for unsampled igloo blocks.</p> <p>7. NMED Response: While NMED agrees that this approach may be acceptable, it is dependent upon the six hottest apron/revetment resampling investigation results. Drain sampling should be discrete vs the composites used in past sampling efforts.</p> <p>Note: For clarification of your statement above in parenthesis, the samples were multi-incremental samples used for screening purposes only and cannot be used for confirmation purposes unless they meet the criteria established regarding multiplication of the results by the number of subsamples. These data cannot be evaluated for exceedances directly against screening levels. The Permittee must discontinue the misrepresentation of this data in their reports and responses.</p> <p>8. NMED Response: Noted. NMED acknowledges that the statement should have only related to aprons.</p>			
	2/10/2021	<p>NMED provided a response that Management has directed Ben to other priorities and that a response would be delayed.</p>			
1/26/2021		<p>8 points of clarification needed. 1. Will NMED require the results of the ISM samples be multiplied by the number of sample increments before comparison to the screening levels and decision making? 2. Does this exception, and the data evaluation regarding multiplication of ISM results by the number of discrete samples, apply to the revetments? 3. Does NMED acknowledge there are many cases, where the road is higher than the apron, the rectangular part of the original DU is likely not impacted and should not require sampling? 4. Will NMED accept discrete sampling in lieu of ISM at igloos and revetments? 5. September 21, 2020 email, Sample below the drains. If the results exceed SLs then, Sampling in the swale leading away from the drain is needed (triangular area in the sketch)? Can you clarify this? 6. Depending on NMED's responses to item 5 above, the Army may re-evaluate our approach at igloo blocks that received disapprovals as a potential cost saving measure. 7. The Army may also consider an alternative approach by 1) Sampling below the drains and 2) Performing a dig and haul if soil under the drain exceeds the SLs. 8. The revetments are not impacted by soils below the drainpipes and thus the Army plans to sample each revetment separately. The Army will consider either ISM or discrete sampling pending clarifications stemming from our email conversation.</p>			

<u>Parcel</u>	<u>Topic</u>	<u>PM</u>	<u>Contractor(s)</u>	<u>NMED Deadline (if any)</u>	<u>Status</u>
Igloos	Igloo Aprons and Revetments - DU's, Igloo Block A reference, 6-hottest areas sampling approach	Smith	In-house	N/A	NMED Response received 3/04/21
<u>Army Email</u>	<u>NMED Response Date</u>	<u>Notes</u>			
	9/21/2020	NMED response from Ben Wear. Site investigation per area, DU's (reference 7/7/20 email), "If the Army has a different approach that is logical, scientifically-based, technically acceptable, and designed to identify hot spots, if present, within the previously sampled DUs, then the Army can present that in their Work Plan and NMED will review it."			
9/18/2020		Email requesting a response to the 7/21/20 email			
7/21/2020		Lengthy email outlining the clarification of two topics. 1 - 6 hottest aprons and revetments, 2 - Decision Units			
7/13/2020		Thank you for reply, the Army will prepare an email to enumerate the need for clarification.			
	7/13/2020	NMED requests everything in writing so that all parties are on the same page.			
7/10/2020		Thank you for exception to ISM policy, presentation from 1/10/19 attached, request for a telephone call.			
	7/7/2020	NMED Response from Ben Wear. Focus on Igloo Block A.			
7/1/2020		Army approach to 6-hottest aprons/revetments per discussion on 1/10/2019. Sent from George Cushman to Dave Cobrain.			

**From:** [Wear, Benjamin, NMENV](#)  
**To:** [Cushman, George H IV CIV USARMY HQDA DCS G-9 \(USA\)](#)  
**Cc:** [Cobrain, Dave, NMENV](#); [Thomas, Ian M CIV USARMY HQDA DCS G-9 \(USA\)](#); [Smith, Steven W CIV USARMY CESWF \(USA\)](#); [Christy Esler](#); [Angela Makin](#); [Pierard, Kevin, NMENV](#); [Suzuki, Michiya, NMENV](#); [Khan, Mohammad Saqib \(Saqib\) CIV USARMY CESWF \(USA\)](#); [STEVENS, BROOKE N CIV USARMY CEERD \(US\)](#); [Theel, Heather J CIV USARMY CEERD-EL \(USA\)](#); [Montgomery, Cheryl R CIV USARMY CEERD-EL \(USA\)](#)  
**Subject:** RE: Fort Wingate Igloo Apron and Revetment Sampling Approach  
**Date:** Thursday, March 4, 2021 10:25:27 AM  
**Attachments:** [image001.png](#)

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Hello George,

Again, I apologize for the delay in NMED's response. Please see below where we have responded each of your comments.

- 1. In your July 7, 2020 e-mail, you mention NMED agrees to make an exception to its ISM policy as stated in its December 17, 2019 letter. This exception allows the Army to conduct ISM sampling at a site where contaminants were not distributed to the surface by detonation or airborne distribution. Under this exception, will NMED require the results of the ISM samples be multiplied by the number of sample increments before comparison to the screening levels and decision making?*

NMED Response: Yes. Please realize that, while I don't have the exact number with me now, this exception allowed FWDA to eliminate over 95% of the locations sampled in Igloo Block A from further investigation. NMED is concerned that FWDA appears unable to follow up on the less than 5% of sampling locations that did not meet the screening criteria.

- 2. Does this exception, and the data evaluation regarding multiplication of ISM results by the number of discrete samples, apply to the revetments? Please refer to the attached figure from aerial photography.*

NMED Response: Yes.

- 3. Regarding the drawing on the July 7, 2020 e-mail, Does NMED acknowledge there are many cases, where the road is higher than the apron, the rectangular part of the original DU is likely not impacted and should not require sampling? See the attached figure. We request NMED input on documenting locations where the road is higher than the apron.*

NMED Response: NMED has acknowledged this fact in the past and will continue to do so. The Permittee can provide photographic evidence of the topography and natural drainage paths along the roads for these igloos.

- 4. Will NMED accept discrete sampling in lieu of ISM at igloos and revetments? We will evaluate costs between the two approaches and may follow up with you.*

NMED Response: NMED will accept discrete sampling, but without a scale on the provided figure, it is difficult to estimate how many discrete samples will be required.

- 5. The third paragraph of Topic 1 in your September 21, 2020 email states: "The Army must make their case for each area as it is investigated. Should higher contaminant levels or other types of contaminants be found during sampling below the drainpipes of*

*igloos in another area, sampling of the aprons/revetments may be required.” Is this statement pertaining to unsampled igloos when you mention igloos in another area? Is NMED thinking of a two-step approach here? 1) Sample below the drains. If the results exceed SLs then, 2) Sampling in the swale leading away from the drain is needed (triangular area in the sketch)? Can you clarify this?*

NMED Response: Yes, the reference is to unsampled igloo blocks. This approach is directly related to the completion of the resampling of the six hottest igloo aprons/revetments in Igloo Block A. If this sampling effort indicates that there are no identifiable hot spots in these sampling locations, then the two-step approach indicated above would be acceptable.

6. *Depending on NMED’s responses to item 5 above, the Army may re-evaluate our approach at igloo blocks that received disapprovals as a potential cost saving measure.*

NMED Response: Noted. NMED assumes this is in reference to work plans for unsampled igloo blocks.

7. *If NMED confirms the two-step approach we outline in #5, the Army may consider this approach. The Army may also consider an alternative approach by 1) Sampling below the drains and 2) Performing a dig and haul if soil under the drain exceeds the SLs. We would also include taking confirmation samples under the excavation and in the swale downstream of the drain. Additional excavation will follow if the SLs are not met. If soil under the drains are below the SLs (using cumulative risk comparison) we would propose no further action at that igloo. We think this approach could be accomplished under one work plan and field effort. This approach would not include any initial investigative sampling in the swales. (There were no exceedances in apron samples from the 308 igloos previously tested and submitted to NMED.) We believe this approach could potentially conclude corrective action on igloo exteriors (assuming cleanup standards are met), eliminate further mobilizations to a large number of igloos and expedite the schedule.*

NMED Response: While NMED agrees that this approach may be acceptable, it is dependent upon the six hottest apron/revetment resampling investigation results. Drain sampling should be discrete vs the composites used in past sampling efforts.

Note: For clarification of your statement above in parenthesis, the samples were multi-incremental samples used for screening purposes only and cannot be used for confirmation purposes unless they meet the criteria established regarding multiplication of the results by the number of subsamples. These data cannot be evaluated for exceedances directly against screening levels. The Permittee must discontinue the misrepresentation of this data in their reports and responses.

8. *Regarding the same quote in #5 “... sampling of the aprons/revetments may be required.” This statement could be understood to mean the drainpipes are a potential source or release point to the revetments. This is not the case. The revetments are not impacted by soils below the drainpipes and thus the Army plans to sample each revetment separately. The Army will consider either ISM or discrete sampling pending clarifications stemming from our email conversation.*

NMED Response: Noted. NMED acknowledges that the statement should have only related to aprons.

Thanks,

**Ben Wear**  
**Environmental Scientist Supervisor**  
**Hazardous Waste Bureau**  
**New Mexico Environment Department**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, NM 87505-6313**  
**(505) 690-6662**

---

**From:** Wear, Benjamin, NMENV <[Benjamin.Wear@state.nm.us](mailto:Benjamin.Wear@state.nm.us)>  
**Sent:** Wednesday, February 10, 2021 10:35 AM  
**To:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA) <[george.h.cushman.civ@mail.mil](mailto:george.h.cushman.civ@mail.mil)>  
**Cc:** Cobrain, Dave, NMENV <[dave.cobrain@state.nm.us](mailto:dave.cobrain@state.nm.us)>  
**Subject:** [Non-DoD Source] RE: Fort Wingate Igloo Apron and Revetment Sampling Approach

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

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Hi George,

I just wanted to let you know that I haven't forgotten about your email below.

I have been directed by my management to focus on other NMED priorities at the moment, but I will get to this when I have some time.

I apologize for the delay.

Thanks,

**Ben Wear**  
**Environmental Scientist Supervisor**  
**Hazardous Waste Bureau**  
**New Mexico Environment Department**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, NM 87505-6313**  
**(505) 476-6041**

**From:** [Cushman, George H IV CIV USARMY HQDA DCS G-9 \(USA\)](#)  
**To:** [Wear, Benjamin, NMENV](#)  
**Cc:** [Cobrain, Dave, NMENV](#); [Thomas, Ian M CIV USARMY HQDA DCS G-9 \(USA\)](#); [Smith, Steven W CIV USARMY CESWF \(USA\)](#); [Christy Esler](#); [Angela Makin](#); [kevin.pierard@state.nm.us](mailto:kevin.pierard@state.nm.us); [Suzuki, Michiya, NMENV](#); [Khan, Mohammad Saqib \(Saqib\) CIV USARMY CESWF \(USA\)](#); [STEVENS, BROOKE N CIV USARMY CEERD \(US\)](#); [Theel, Heather J CIV USARMY CEERD-EL \(USA\)](#); [Montgomery, Cheryl R CIV USARMY CEERD-EL \(USA\)](#)  
**Subject:** Fort Wingate Igloo Apron and Revetment Sampling Approach  
**Date:** Tuesday, January 26, 2021 11:19:30 AM  
**Attachments:** [image001.png](#)  
[FWDA\\_IglooRevetDrainage.pdf](#)

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Ben,

My team has had several discussions since your last e-mail dated September 21, 2020, and I would like to clarify a few things with you to assist in our efforts in planning, scheduling, and budgeting upcoming projects. I numbered the points below.

1. In your July 7, 2020 e-mail, you mention NMED agrees to make an exception to its ISM policy as stated in its December 17, 2019 letter. This exception allows the Army to conduct ISM sampling at a site where contaminants were not distributed to the surface by detonation or airborne distribution. Under this exception, will NMED require the results of the ISM samples be multiplied by the number of sample increments before comparison to the screening levels and decision making?
2. Does this exception, and the data evaluation regarding multiplication of ISM results by the number of discrete samples, apply to the revetments? Please refer to the attached figure from aerial photography.
3. Regarding the drawing on the July 7, 2020 e-mail, Does NMED acknowledge there are many cases, where the road is higher than the apron, the rectangular part of the original DU is likely not impacted and should not require sampling? See the attached figure. We request NMED input on documenting locations where the road is higher than the apron.
4. Will NMED accept discrete sampling in lieu of ISM at igloos and revetments? We will evaluate costs between the two approaches and may follow up with you.
5. The third paragraph of Topic 1 in your September 21, 2020 email states: *"The Army must make their case for each area as it is investigated. Should higher contaminant levels or other types of contaminants be found during sampling below the drainpipes of igloos in another area, sampling of the aprons/revetments may be required."* Is this statement pertaining to unsampled igloos when you mention *igloos in another area*? Is NMED thinking of a two-step approach here? 1) Sample below the drains. If the results exceed SLs then, 2) Sampling in the swale leading away from the drain is needed (triangular area in the sketch)? Can you clarify this?
6. Depending on NMED's responses to item 5 above, the Army may re-evaluate our approach at igloo blocks that received disapprovals as a potential cost saving measure.
7. If NMED confirms the two-step approach we outline in #5, the Army may consider this approach. The Army may also consider an alternative approach by 1) Sampling below the drains and 2) Performing a dig and haul if soil under the drain exceeds the SLs. We would also include taking confirmation samples under the excavation and in



the swale downstream of the drain. Additional excavation will follow if the SLs are not met. If soil under the drains are below the SLs (using cumulative risk comparison) we would propose no further action at that igloo. We think this approach could be accomplished under one work plan and field effort. This approach would not include any initial investigative sampling in the swales. (There were no exceedances in apron samples from the 308 igloos previously tested and submitted to NMED.) We believe this approach could potentially conclude corrective action on igloo exteriors (assuming cleanup standards are met), eliminate further mobilizations to a large number of igloos and expedite the schedule.

8. Regarding the same quote in #5 “... *sampling of the aprons/revetments may be required.*” This statement could be understood to mean the drainpipes are a potential source or release point to the revetments. This is not the case. The revetments are not impacted by soils below the drainpipes and thus the Army plans to sample each revetment separately. The Army will consider either ISM or discrete sampling pending clarifications stemming from our email conversation.

Thank you for your consideration of our questions above. The e-mail chain for this issue follows. As always, please feel free to contact me via e-mail or phone (703-455-3234) if you have any questions.

v/r,

George

---

**From:** [Wear, Benjamin, NMENV](#)  
**To:** [Cushman, George H IV CIV USARMY HQDA DCS G-9 \(USA\)](#)  
**Cc:** [Cobrain, Dave, NMENV](#); [Thomas, Ian M CIV USARMY HQDA DCS G-9 \(USA\)](#); [Smith, Steven W CIV USARMY CESWF \(USA\)](#); [Christy Esler](#); [Angela Makin](#)  
**Subject:** RE: Fort Wingate Igloo Apron and Revetment Sampling Approach  
**Date:** Monday, September 21, 2020 11:06:40 AM  
**Attachments:** [image001.png](#)

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Mr. Cushman,

NMED has reviewed your email from July 21, 2020 and provides the following responses to your inquiries. Your comments are in italics with NMED responses to follow.

*Topic 1*

*It is the Army's understanding from discussions on the January 9, 2019 call with NMED that the DUs of the six hottest aprons/revetments would be split in half and re-sampled using ISM (to include triplicate sampling at each DU).*

This is an example of different interpretations of what was discussed in a meeting. In an attempt to resolve the issue and minimize the Army's efforts, NMED suggested that the DUs could be divided and resampled, but there was no agreement on the "in half" portion of the discussion. NMED's July 7, 2020 email clarifies NMED's stance on using a logical approach to dividing the DUs and resampling. If the Army has a different approach that is logical, scientifically-based, technically acceptable, and designed to identify hot spots, if present, within the previously sampled DUs, then the Army can present that in their Work Plan and NMED will review it.

As NMED has continually relayed to FWDA, site investigation is not a "one size fits all" proposal. While the Army may use this data in a logical manner as a line of evidence that further sampling of aprons/revetments in other areas is not required, it is not clear to NMED that these other areas were not utilized in different manners for different operations that may have resulted in contamination by different compounds or at different levels. The Army must make their case for each area as it is investigated. Should higher contaminant levels or other types of contaminants be found during sampling below the drainpipes of igloos in another area, sampling of the aprons/revetments may be required.

*Topic 2*

*The Army would like to discuss the division of the decision units around the apron.*

As stated above, NMED has presented a logical approach for division of the DUs. The Army can present their approach in a work plan and NMED will review it.

Thanks,

**Ben Wear**  
**Environmental Scientist Supervisor**  
**Hazardous Waste Bureau**  
**New Mexico Environment Department**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, NM 87505-6313**  
**(505) 476-6041**

---

**From:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA) <george.h.cushman.civ@mail.mil>  
**Sent:** Friday, September 18, 2020 12:43 PM  
**To:** Wear, Benjamin, NMENV <Benjamin.Wear@state.nm.us>

**Cc:** Cobrain, Dave, NMENV <dave.cobrain@state.nm.us>; Thomas, Ian M CIV USARMY HQDA DCS G-9 (USA) <ian.m.thomas2.civ@mail.mil>; Smith, Steven W CIV USARMY CESWF (USA) <Steve.W.Smith@usace.army.mil>; Christy Esler <cesler@sundance-inc.net>; Angela Makin <amakin@sundance-inc.net>

**Subject:** [EXT] Fort Wingate Igloo Apron and Revetment Sampling Approach

Ben: A quick note to inquire as to whether NMED has had the opportunity to review our request for clarification on the two topics in the e-mail below? We have delayed further work in this area pending NMED's reply, and are anxious to re-start our sampling efforts. Thank you for a quick response to this e-mail.

v/r,

George

---

**From:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA)  
**Sent:** Tuesday, July 21, 2020 10:23 AM  
**To:** Wear, Benjamin, NMENV <[Benjamin.Wear@state.nm.us](mailto:Benjamin.Wear@state.nm.us)>  
**Cc:** Cobrain, Dave, NMENV <[dave.cobrain@state.nm.us](mailto:dave.cobrain@state.nm.us)>; 'Smith, Steven W CIV USARMY CESWF (USA)' <[Steve.W.Smith@usace.army.mil](mailto:Steve.W.Smith@usace.army.mil)>; Christy Esler (<[cesler@sundance-inc.net](mailto:cesler@sundance-inc.net)>) <[cesler@sundance-inc.net](mailto:cesler@sundance-inc.net)>; Angela Makin <[amakin@sundance-inc.net](mailto:amakin@sundance-inc.net)>  
**Subject:** Igloo Apron and Revetment Sampling Approach

Ben,

I conferred with my Army team, and we developed the two clarification topics listed below to discuss.

Topic 1. The Army wants to discuss the purpose and ramifications of the further sampling on the 6 hottest aprons/revetments. The Army gave the attached presentation to NMED on January 9, 2019, with the purpose of evaluating historical data from all previously sampled aprons (308) and revetments (198) to determine the probability that the un-sampled aprons and revetments (throughout FWDA) would contain contamination. The Army proposed no further sampling at the un-sampled aprons and revetments, based on the statistics run on the sampled sites. The evaluation indicated negligible probability of exceeding SSLs at the un-sampled sites. It is our understanding that the Army and NMED are in agreement that the conceptual site exposure/release model for any igloo and revetment at FWDA is the same for all igloos and revetments at FWDA. This assertion is based on all the work and communication between NMED and the Army to date.

It is the Army's understanding from discussions on the January 9, 2019 call with NMED that the DUs of the six hottest aprons/revetments would be split in half and re-sampled using ISM (to include triplicate sampling at each DU). We would use this as a line of evidence approach to demonstrate our ISM screening is not overlooking any hotspots. If results are similar, this makes a good case for the Army to show that all other non-sampled sites are not a problem. This approach is consistent with the conceptual model for aprons and revetments.

NMED's July 7, 2020 email appears to narrow the focus and ramifications/impact of the study to A-Block as opposed to all of the other igloos blocks (both sampled and un-sampled). The Army would like to have the effects and results of the study to be applicable to all igloos and revetments at FWDA.

Topic 2. The Army would like to discuss the division of the decision units around the apron. The rectangular portion of the DU across the road only applies if the drainage from the apron flows across the road. Thus, during previous sampling events, the Army combined both swales as a single DU. If terrain dictated, the Army included the area across the road into the single DU along with both swales. It is our understanding the Army and NMED were in agreement with this approach. With this site model in mind, the Army proposes to create a single DU at each of the two swales. If terrain dictates, a third DU will be added across the road. If any revetments make the top six hottest sites, then the Army proposes to divide the single original DU into three separate DUs and sample per ISM methods.

Please let me know if you have any questions or wish further discussion concerning the two topics listed above.

The Army agrees that most of our discussion take place through e-mails, so as to provide a written record of what was discussed and agreed upon. However, in some instances, it would make sense to discuss these topics on a telephone call, to prevent protracted e-mail chains stretching over several days or even weeks. We can follow up these calls with call notes to solidify the discussion and which would be submitted to NMED for your review and approval. If you are willing to discuss these topics through a telephone call, we are willing to adjust our schedules to accommodate yours.

Thank you for your willingness to engage us on these topics. I and the Army team look forward to further discussions.

v/r,

George

---

**From:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA) [<mailto:george.h.cushman.civ@mail.mil>]  
**Sent:** Monday, July 13, 2020 9:41 AM  
**To:** Wear, Benjamin, NMENV <[Benjamin.Wear@state.nm.us](mailto:Benjamin.Wear@state.nm.us)>  
**Cc:** Smith, Steven W CIV USARMY CESWF (USA) <[Steve.W.Smith@usace.army.mil](mailto:Steve.W.Smith@usace.army.mil)>; Cobrain, Dave, NMENV <[dave.cobrain@state.nm.us](mailto:dave.cobrain@state.nm.us)>  
**Subject:** RE: Igloo Apron and Revetment Sampling Approach

Ben: Thank you for your reply. Your proposal makes sense, so we will prepare an e-mail reply that will enumerate our needed clarifications concerning your response. I will confer with my Army team and develop a list of clarification topics. I hope to send you a reply by late week or early next week.

v/r,

George

**From:** Wear, Benjamin, NMENV <[Benjamin.Wear@state.nm.us](mailto:Benjamin.Wear@state.nm.us)>  
**Sent:** Monday, July 13, 2020 10:01 AM  
**To:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA) <[george.h.cushman.civ@mail.mil](mailto:george.h.cushman.civ@mail.mil)>  
**Cc:** Smith, Steven W CIV USARMY CESWF (USA) <[Steve.W.Smith@usace.army.mil](mailto:Steve.W.Smith@usace.army.mil)>; Cobrain, Dave, NMENV <[dave.cobrain@state.nm.us](mailto:dave.cobrain@state.nm.us)>  
**Subject:** [Non-DoD Source] RE: Igloo Apron and Revetment Sampling Approach

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

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Mr. Cushman,

Scheduling conference calls is somewhat difficult during the ongoing Covid issues. In addition, it is preferable to have any needed clarifications in writing so that we are all on the same page. NMED has had particular difficulty in the past with the parties walking away from a meeting with completely different interpretations of what was said and/or agreed to.

Therefore, NMED is requesting that you present your questions about our response through email so that we can sort things out in writing and there is no confusion down the line.

Thank you,

**Ben Wear**  
**Environmental Scientist Supervisor**  
**Hazardous Waste Bureau**  
**New Mexico Environment Department**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, NM 87505-6313**  
**(505) 476-6041**

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**From:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA) <[george.h.cushman.civ@mail.mil](mailto:george.h.cushman.civ@mail.mil)>  
**Sent:** Monday, July 13, 2020 6:13 AM  
**To:** Wear, Benjamin, NMENV <[Benjamin.Wear@state.nm.us](mailto:Benjamin.Wear@state.nm.us)>  
**Cc:** Smith, Steven W CIV USARMY CESWF (USA) <[Steve.W.Smith@usace.army.mil](mailto:Steve.W.Smith@usace.army.mil)>; Cobrain, Dave, NMENV <[dave.cobrain@state.nm.us](mailto:dave.cobrain@state.nm.us)>  
**Subject:** [EXT] Igloo Apron and Revetment Sampling Approach

Ben: Sorry – I forgot to attach the presentation.....

v/r,

George

---

**From:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA)  
**Sent:** Friday, July 10, 2020 10:43 AM  
**To:** 'Benjamin.Wear@state.nm.us' <[Benjamin.Wear@state.nm.us](mailto:Benjamin.Wear@state.nm.us) < Caution-mailto:Benjamin.Wear@state.nm.us > >  
**Cc:** 'Smith, Steven W CIV USARMY CESWF (USA)' <[Steve.W.Smith@usace.army.mil](mailto:Steve.W.Smith@usace.army.mil) < Caution-mailto:Steve.W.Smith@usace.army.mil > >; 'dave.cobrain@state.nm.us' <[dave.cobrain@state.nm.us](mailto:dave.cobrain@state.nm.us) < Caution-mailto:dave.cobrain@state.nm.us > >  
**Subject:** Igloo Apron and Revetment Sampling Approach

Ben,

Thank you for your reply to our request and your agreement to make an exception to NMED's policy concerning ISM as you have outlined below. We would like to have a telephone call with NMED to clarify a few things in your e-mail response as compared with our notes from the NMED/Army call on January 9, 2019. I've attached the presentation for reference. We will e-mail talking points we would like to clarify prior to the call. What is NMED's availability for a call in the next 2-3 weeks?

I apologize for omitting you on the original e-mail. I am still new to this and do not have all the protocols down pat yet. I shall be sure to include you on all future correspondence concerning Fort Wingate Depot Activity.

v/r,

George

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**From:** Wear, Benjamin, NMENV <[Benjamin.Wear@state.nm.us](mailto:Benjamin.Wear@state.nm.us) < Caution-mailto:Benjamin.Wear@state.nm.us > >  
**Sent:** Tuesday, July 7, 2020 4:10 PM  
**To:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA) <[george.h.cushman.civ@mail.mil](mailto:george.h.cushman.civ@mail.mil) < Caution-mailto:george.h.cushman.civ@mail.mil > >  
**Cc:** Steven Smith (<[steve.w.smith@usace.army.mil](mailto:steve.w.smith@usace.army.mil) < Caution-mailto:steve.w.smith@usace.army.mil > > <[steve.w.smith@usace.army.mil](mailto:steve.w.smith@usace.army.mil) < Caution-mailto:steve.w.smith@usace.army.mil > >); Cobrain, Dave, NMENV <[dave.cobrain@state.nm.us](mailto:dave.cobrain@state.nm.us) < Caution-mailto:dave.cobrain@state.nm.us > >  
**Subject:** [Non-DoD Source] [EXT] Igloo Apron and Revetment Sampling Approach

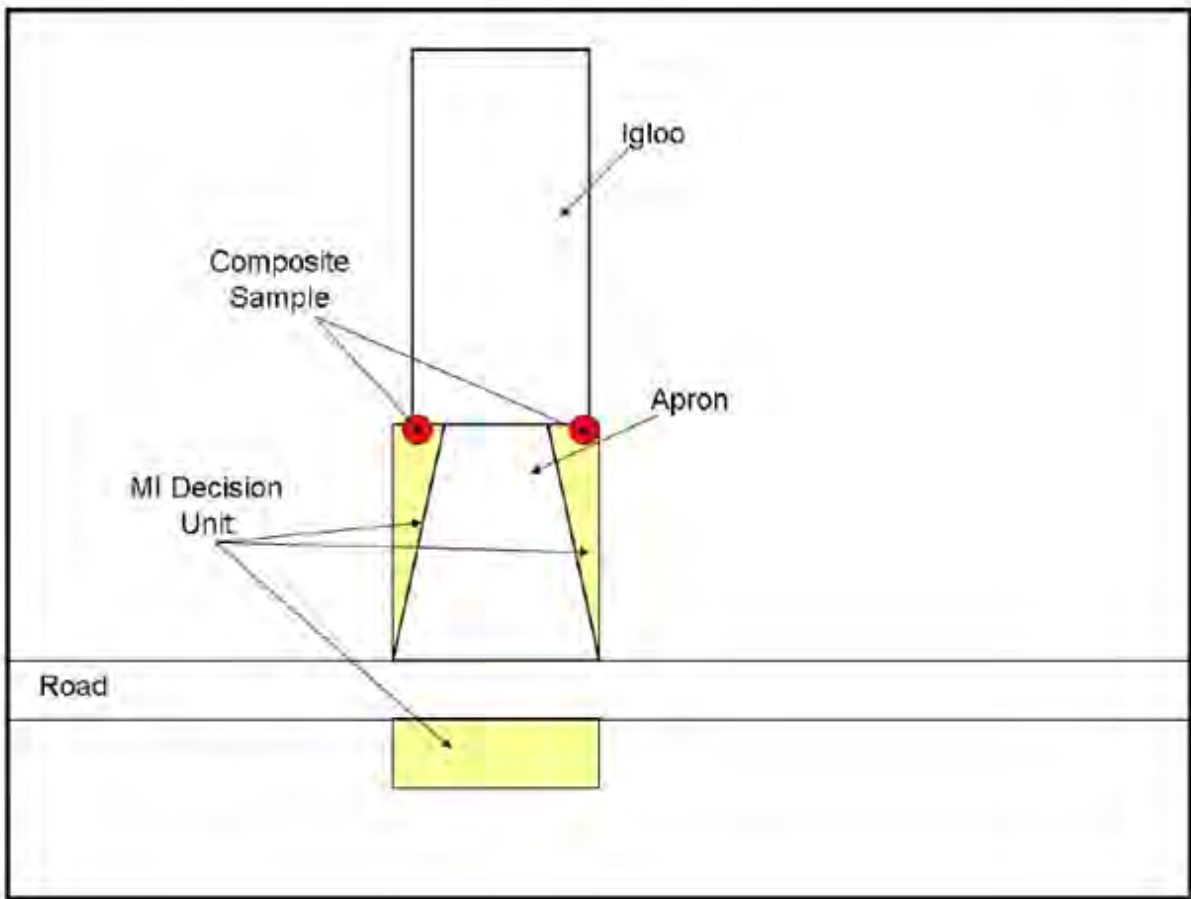
All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

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Mr. Cushman,

Thanks for your email. Please include myself, Ben Wear, on any future correspondence related to Fort Wingate Depot Activity.

NMED proposed further sampling of subdivisions of the six hottest apron/revetment ISM decision units (DUs) in order for the Army to demonstrate the unlikelihood of hotspots in Igloo Block A. Based on the layout of the DUs around the igloo aprons in the Permittee provided figure below, a subdivision of two is not appropriate. A logical division for the purpose of identifying hotspots would seem to be a subdivision of four, with each triangular side of the aprons becoming a DU and dividing the rectangular portion of the original DU into two.



NMED agrees to make an exception to its ISM policy as stated in its December 17, 2019 letter regarding programmatic issues at FWDA in the case of the Igloo Block A ISM hotspot demonstration. This exception allows the Army to conduct ISM sampling at a site where contaminants were not distributed to the surface by detonation or airborne distribution. However, this exception does not relieve the Army of the requirement to follow the methods and procedures outlined in EPA Method 8330B and the ITRC *Incremental Sampling Methodology*, including triplicate sampling.

The Army must submit a work plan detailing the work to be completed, including descriptions of all

methods and procedures, for review and approval by NMED. Do you have a timeframe for submittal of the work plan?

Thanks,

**Ben Wear**  
**Environmental Scientist Supervisor**  
**Hazardous Waste Bureau**  
**New Mexico Environment Department**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, NM 87505-6313**  
**(505) 476-6041**

-----Original Message-----

From: Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA)

<[george.h.cushman.civ@mail.mil](mailto:george.h.cushman.civ@mail.mil) < Caution-Caution-mailto:george.h.cushman.civ@mail.mil < Caution-mailto:george.h.cushman.civ@mail.mil %3c Caution-Caution-mailto:george.h.cushman.civ@mail.mil > > >

Sent: Wednesday, July 1, 2020 10:43 AM

To: Cobrain, Dave, NMENV <[dave.cobrain@state.nm.us](mailto:dave.cobrain@state.nm.us) < Caution-Caution-mailto:dave.cobrain@state.nm.us < Caution-mailto:dave.cobrain@state.nm.us %3c Caution-Caution-mailto:dave.cobrain@state.nm.us > > >

Cc: Smith, Steven W CIV USARMY CESWF (USA) <[Steve.W.Smith@usace.army.mil](mailto:Steve.W.Smith@usace.army.mil) < Caution-Caution-mailto:Steve.W.Smith@usace.army.mil < Caution-mailto:Steve.W.Smith@usace.army.mil %3c Caution-Caution-mailto:Steve.W.Smith@usace.army.mil > > >

Subject: [EXT] Igloo Apron and Revetment Sampling Approach

Dave,

I wanted to contact you about the sampling approach for igloo aprons and revetments we discussed via a presentation with NMED on a phone call back on January 10, 2019.

The Army is considering the approach you proposed to sample the 6 hottest apron or revetment ISM decision units (DUs) of the 300 or so igloos and 200 or so revetments we sampled already and split them in half and re-sample using ISM. We would use this as a line of evidence approach to demonstrate our ISM screening is not overlooking any hotspots. If results are similar this makes a good case for the Army to show that all other non-sampled sites are not a problem. The Army believes this is a viable approach due to the small areas within the DUs and that we are sampling at the bottom of the swales (a conservative approach).

This approach however, seems to conflict with NMED's December 17, 2019, response to our 'Programmatic Issues' letter relating to Issue #3. In part, NMED's response stated: "The Permittee



must review all planned work and revise any plans that propose ISM sampling to propose an alternate sampling approach. NMED hereby rescinds approval of all proposed ISM or MI sampling that was previously approved, but has not yet been conducted at the Facility."

We are seeking clarification as to whether NMED will make an exception to the above statement in the case of igloo aprons and revetments. If so, the Army is prepared to generate a work plan for this effort for submission to NMED. The Army would also like to seek NMED's input on the planning stage of the work plan.

Thank you for your consideration of this request.

v/r,

George

[george.h.cushman.civ@mail.mil](mailto:george.h.cushman.civ@mail.mil) < Caution-mailto:george.h.cushman.civ@mail.mil > < Caution-Caution-mailto:george.h.cushman.civ@mail.mil >  
703-455-3234

CLASSIFICATION: UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

**From:** [Wear, Benjamin, ENV](#)  
**To:** [Cushman, George H IV CIV USARMY HQDA DCS G-9 \(USA\)](#); [Cobrain, Dave, ENV](#); [Suzuki, Michiya, ENV](#)  
**Cc:** [Thomas, Ian M CIV USARMY HQDA DCS G-9 \(USA\)](#); [Soicher, Alan J CIV USARMY CESPA \(USA\)](#); [Khan, Mohammad Saqib \(Saqib\) CIV USARMY CESWF \(USA\)](#); [Christy Esler](#); [Angela Makin](#)  
**Subject:** RE: [EXTERNAL] Response to NMED's "Four Questions" Regarding Analytical Performance vs. GW SLs  
**Date:** Wednesday, April 13, 2022 10:34:26 AM

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**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

George,

NMED appreciates the FWDA's diligence in pursuing analytical laboratories that can provide analytical detection limits below NMED screening levels for FWDA's chemicals of potential concern (COPCs). NMED has reviewed the data provided by FWDA and provides the following direction.

"Analytical detection limits", for the purpose of this discussion, are defined as the reporting limit (RL), limit of detection (LOD), practical quantitation limit (PQL), or limit of quantitation (LOQ); the designation for reported detection limits will vary by analytical laboratory and/or facility. Note that the method detection limit (MDL) does not satisfy the requirement that the analytical detection limits are below the screening level. Data whose analytical detection limits are not below the NMED screening levels are considered data quality exceptions, must be identified as such wherever presented, and cannot be used for decision-making purposes, including compliance determinations.

NMED is unable to fully evaluate the information provided because FWDA did not include the responses from each analytical laboratory, as requested. Without this information, NMED is unable to verify that there is no analytical laboratory and method that can meet the requirements of analytical detection limits below the NMED screening levels. In addition, it appears that FWDA only requested information from analytical laboratories about specific listed methods and did not make inquiries related to alternative methods or method modifications that may provide better analytical detection limits.

NMED is unaware of any proprietary or disclosure requirements related to any information provided to FWDA by the analytical laboratories. The information that was provided by FWDA is not sufficient to proceed. FWDA must provide the full laboratory responses to NMED. If FWDA believes confidentiality is a concern, they may submit the responses and assert a claim of business confidentiality in accordance with Section I.I.9.i of the FWDA RCRA Permit, which states, "[t]he Permittee may claim confidentiality for any information required pursuant to this Permit, pursuant to the provisions of Section 74-4-4.3.D and F of the HWA, 20.4.1.100 NMAC (incorporating 40 CFR 260.2), and 20.4.1.900 NMAC (incorporating 40 CFR 270.12)". NMED stores all confidential information in a secure location that is not accessible to the

public.

If a facility can contract the services of an analytical laboratory for chemical analyses whose analytical detection limits are below the NMED screening levels, which is a requirement of the facility permit, the facility must do so for all data used to establish compliance with NMED screening levels. FWDA's response to NMED's Question #4 states that the information is provided in the tables; however, FWDA did not explore "all available analytical methods", as directed, so the question has not been fully addressed. FWDA must inquire about, and submit to NMED, documentation from the analytical laboratories stating that no other methods are available that could achieve better analytical detection limits for problem compounds.

For highly contaminated sites where compliance determinations will not be conducted for the foreseeable future, NMED will work with the facility to approve the use of less costly and less accurate methods for tracking purposes until compliance determination becomes an issue. For compliance, the facility is typically required to provide a minimum of eight quarterly sampling events for groundwater where the analytical detection limits are below the screening level and the compound in question is non-detect at that level.

A facility always has the option to petition for removal of specific compounds from the site's COPC list; removal depends upon successful demonstration to NMED that the compound was never present or is not present at the site at concentrations that would pose a risk to human health or the environment. For instance, if a compound is found to be below, or non-detect at, the screening level for eight consecutive groundwater sampling events, the compound would likely be eligible for removal from the COPC list, depending upon the potential for future contaminant migration or parent chemical degradation.

In the situation where a facility is unable to locate an analytical laboratory that can provide analytical detection limits which meet the screening levels for specific compounds, a facility may provide multiple detailed and documented lines of evidence (LOEs) to support a claim that the compound is unlikely to be found at a particular site, accounting for future migration and parent chemical degradation. The inability of a laboratory to meet the analytical detection limits below the screening level criteria is not considered a LOE. If the facility can successfully demonstrate to NMED that the compound is unlikely to be found at a site, NMED will approve removal of that compound from the site's COPC list required for sample analyses. These LOEs may include, but are not limited to:

1. The physical and chemical properties of the compound;
2. The lack of any historical use of the compound, products containing the compound, or products containing parent compounds which may degrade into the compound in question;
3. The physical characteristics of the site, such as depth to groundwater; and
4. Historical analytical data.

Based on the information provided, it appears that the analytical laboratories were not asked whether alternative methods are available that were not included in FWDA's list which may be able to provide analytical detection limits at or below NMED screening levels. This issue must be pursued and the laboratory responses must be provided to NMED for review, as previously requested.

Once FWDA provides all of the information requested, NMED can fully evaluate the analytical detection limit issue at FWDA and provide final direction. Please submit a formal report, which details the data you have collected and includes all information provided by the analytical laboratories, to NMED for review no later than **July 29, 2022**.

Thanks,

**Ben Wear**  
**Environmental Scientist Supervisor**  
**Hazardous Waste Bureau**  
**New Mexico Environment Department**  
**2905 Rodeo Park Drive East, Building 1**  
**Santa Fe, NM 87505-6313**  
**(505) 690-6662**

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**From:** Cushman, George H IV CIV USARMY HQDA DCS G-9 (USA) <george.h.cushman.civ@army.mil>

**Sent:** Wednesday, December 22, 2021 3:24 PM

**To:** Wear, Benjamin, NMENV <Benjamin.Wear@state.nm.us>

**Cc:** Thomas, Ian M CIV USARMY HQDA DCS G-9 (USA) <ian.m.thomas2.civ@army.mil>; Soicher, Alan J CIV USARMY CESPA (USA) <Alan.J.Soicher@usace.army.mil>; Khan, Mohammad Saqib (Saqib) CIV USARMY CESWF (USA) <Mohammad.S.Khan@usace.army.mil>; Christy Esler <cesler@sundance-inc.net>; Angela Makin <amakin@sundance-inc.net>

**Subject:** [EXTERNAL] Response to NMED's "Four Questions" Regarding Analytical Performance vs. GW SLs

**Ben:** I apologize for the delay in getting this e-mail to you, but the FWDA Team has spent considerable time discussing and refining an appropriate reply to your e-mail requesting information concerning four items posed on 19 October 2021 (initially from 01 February 2021) regarding Analytical Performance versus Groundwater (GW) Screening Levels (SLs). We anticipate that after receiving and reviewing this e-mail and its attachments, you will agree to a MS TEAMS or WEBEX conference between your team and ours so that we may discuss your questions in detail and answer any additional follow-up questions you may have. Based on the results of our query of the DoD approved laboratory capabilities, we can then begin to discuss how to address analytes where the laboratories are unable to achieve results below the NMED SLs. In this case, I do not feel e-mail correspondence would be appropriate or in the best interests of either team, as it would not provide the collaboration this issue requires. We are prepared to format the discussion in any manner you wish, and would be amenable to have either your team

or ours provide someone to take notes and provide a summary of the discussion, which would then be reviewed and approved by both parties. I hope the above attachments provide the initial responses you are looking for. Please take all the time your team needs to review the information we have provided, and let us know when you are ready for follow-up discussions. What follows below are the four information requests from your 01 February 2021 e-mail, and the Army's responses.

Thank you in advance for your consideration of this correspondence and forthcoming collaboration between our teams so that we may proceed to find an appropriate solution to this issue.

May you and your family have a very Merry Christmas and a wonderful holiday period.

v/r,

George

**For NMED to evaluate this information, the Permittee must provide:**

**1. *The specific information that was requested from each individual laboratory (e.g., were all available analytical methods evaluated?). Please provide correspondence samples.***

The Army contacted all DoD ELAP-certified laboratories (68 in total) in the United States and Canada. Of the 68 laboratories contacted, 29 laboratories responded. Each laboratory was asked for the following information:

- a. Summary of their analytical performance for SW-846 methods used at FWDA
- b. LODs/LOQs for the following analytical methods and analyses:
  1. 8260 VOCs
  2. 8270 SVOCs (including PAHs by GC/MS in SIM mode)
  3. 8081 Pesticides (or 8270)
  4. 8082 PCBs
  5. 8330B Explosives/Nitroaromatics and Nitramines
  6. 8290 Dioxins
  7. 1613 Dioxins
  8. 6010 Metals
  9. 6020 Metals
  10. 7470 Mercury (water)
  11. 7471 Mercury (soil)
  12. 6860 Perchlorate
  13. 9012 Cyanide
  14. 9056 Nitrate
  15. 8015 GRO
  16. 8015 DRO
- c. Information for both solid (soil) and aqueous matrices

An example of the correspondence sent to each laboratory is appended (Attachment 1).

**2. The specific information provided by each laboratory (e.g., what analytical methods were evaluated for each set of compounds?). Please provide full laboratory responses.**

The information provided by each laboratory is described above in (1). The information provided by the laboratories has been organized into tables as described in (3) and (4) below. Since there may be proprietary and disclosure requirements related to the information provided by the laboratories, we are unable to provide full laboratory responses without further consultation. However, please consider the information provided in (3) and (4) below to see whether this provides sufficient information on which to proceed.

**3. The specific COPCs at FWDA for which there exist no analytical laboratory/method that can provide LOQs that meet the respective screening levels. Please provide a complete list.**

The Army generated the list of specific COPCs at FWDA for which there exist no analytical laboratory/method that can provide LOQs below SLs, using the following compilation/evaluation steps (results shown in Attachment 2):

- a) The initial compound analyte list was taken from the Facility-Wide Groundwater Monitoring Plan (2022).
- b) The hierarchy in Attachment 7 of the FWDA RCRA Permit was used to develop a list of human health screening levels (SLs) and the lowest selected for the screening exercise.
- c) The LOQ result from each lab was compared to the SL, and analytes for which at least 1 of the 29 responding laboratories reported an  $LOQ > SL$  were identified and included in Attachment 2.

The results for the aqueous matrix are shown in Attachment 2, including the number of responding labs that reported an LOQ for that analyte, and the percent of those responding labs that have an LOQ above the SL. The percentages are color graded, with dark orange representing 100% of the labs with an  $LOQ > SL$ , to pale yellow where 1-49% of the responding labs exceeded the criteria. The next two columns show the range of the exceedances, and the magnitude of the exceedances, respectively. As shown in Attachment 2, there are seven (7) analytes for which all responding laboratories have  $LOQ > SL$  for the aqueous matrix.

For purposes of comparing this table to earlier correspondence with NMED regarding analytes for which LOQs could not meet SLs, analytes in this first column that appear in **RED FONT** correspond to 42 constituents for which EMAX (the laboratory for the current Periodic Groundwater Monitoring contract) has been unable to meet the SL (i.e.,  $LOQ > SL$ ). These analytes in **RED FONT** correspond to the 42 compounds mentioned in previous correspondence between Army and NMED.

If the approach above is acceptable to NMED, the Army will perform a similar evaluation for the soil matrix.

**4. The specific LOQs provided for each COPC on the list required by #3 for all available analytical**

***methods for each analytical laboratory. Please provide a table compiling and detailing this information.***

The requested information is compiled in Attachment 3, which is the expanded version of Attachment 2. The laboratories are identified as A-AC to address the disclosure concerns described in (2) above.

## Appendix C: Historical Analytical Data Detection Summary Tables



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1004-SS-M-SO	0	0.25	7439-97-6	Mercury	0.029	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-C-SO	0	0.5	7439-92-1	Lead	540	J	0.91	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-C-SO	0	0.5	7439-92-1	Lead	490	J	0.96	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-C-SO	0	0.5	7439-92-1	Lead	450	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.4	=	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-C-SO	0	0.5	7439-97-6	Mercury	0.031	=	0.016	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-C-SO	0	0.5	7439-92-1	Lead	450	J	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.8	J	2.3	0.61	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-M-SO	0	0.25	7440-39-3	Barium	110	J	1.8	0.07	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.46	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-M-SO	0	0.25	7440-47-3	Chromium	7.7	J	3.2	0.053	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1524LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	432	=	0.147	0.294	0.979	0.943	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1032-SS-C-SO	0	0.5	7439-92-1	Lead	390	J	0.91	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-C-SO	0	0.5	7439-92-1	Lead	380	J	0.97	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-C-SO	0	0.5	7439-92-1	Lead	360	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-C-SO	0	0.5	7440-38-2	Arsenic	5.6	=	2.5	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-C-SO	0	0.5	7440-39-3	Barium	150	=	2	0.077	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.45	J	0.51	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.5	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-C-SO	0	0.5	7439-97-6	Mercury	0.034	=	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-C-SO	0	0.5	7439-92-1	Lead	350	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.4	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-M-SO	0	0.25	7440-39-3	Barium	140	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.15	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-M-SO	0	0.25	7440-47-3	Chromium	8.1	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-M-SO	0	0.25	7439-97-6	Mercury	0.037	=	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-C-SO	0	0.5	7439-92-1	Lead	340	J	0.91	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SO	0	0.5	7439-92-1	Lead	310	J	0.94	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-C-SO	0	0.5	7439-92-1	Lead	300	J	0.88	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.1	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.32	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-C-SO	0	0.5	7440-47-3	Chromium	8.6	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-C-SO	0	0.5	7439-97-6	Mercury	0.025	=	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-C-SO	0	0.5	7439-92-1	Lead	290	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.5	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-M-SO	0	0.25	7440-39-3	Barium	150	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.29	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-M-SO	0	0.25	7440-47-3	Chromium	6.8	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-M-SO	0	0.25	7439-97-6	Mercury	0.024	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-C-SO	0	0.5	7439-92-1	Lead	260	J	0.93	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.8	=	2.2	0.59	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-C-SO	0	0.5	7440-39-3	Barium	150	=	1.8	0.068	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.19	J	0.45	0.037	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-C-SO	0	0.5	7440-47-3	Chromium	8.6	=	3.1	0.052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-C-SO	0	0.5	7439-97-6	Mercury	0.022	=	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-C-SO	0	0.5	7439-92-1	Lead	260	J	0.94	0.28	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1014-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.6	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-M-SO	0	0.25	7440-39-3	Barium	140	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.18	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-M-SO	0	0.25	7440-47-3	Chromium	8.6	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-M-SO	0	0.25	7439-97-6	Mercury	0.036	=	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-C-SO	0	0.5	7439-92-1	Lead	250	J	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SO	0	0.25	7440-38-2	Arsenic	4.3	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SO	0	0.25	7440-39-3	Barium	140	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.19	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SO	0	0.25	7440-47-3	Chromium	8.3	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SO	0	0.25	7439-97-6	Mercury	0.024	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-C-SO	0	0.5	7439-92-1	Lead	250	J	0.94	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	3.9	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SODUP	0	0.25	7440-39-3	Barium	120	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.17	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SODUP	0	0.25	7440-47-3	Chromium	7	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.023	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-C-SO	0	0.5	7439-92-1	Lead	250	=	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-C-SO	0	0.5	7439-92-1	Lead	250	J	0.93	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-C-SO	0	0.5	7439-92-1	Lead	250	J	0.97	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1545LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	242	=	0.139	0.278	0.927	0.901	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1022-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.5	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-C-SO	0	0.5	7440-47-3	Chromium	9.7	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-C-SO	0	0.5	7439-97-6	Mercury	0.03	=	0.016	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SODUP	0	0.5	7439-92-1	Lead	220	J	0.96	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-M-SO	0	0.25	7440-38-2	Arsenic	3	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-M-SO	0	0.25	7440-39-3	Barium	100	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.15	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-M-SO	0	0.25	7440-47-3	Chromium	5.7	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-M-SO	0	0.25	7439-97-6	Mercury	0.029	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-C-SO	0	0.5	7439-92-1	Lead	200	J	0.96	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.6	=	2.3	0.61	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-C-SO	0	0.5	7440-39-3	Barium	120	=	1.8	0.07	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.46	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-C-SO	0	0.5	7440-47-3	Chromium	7.1	=	3.2	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-C-SO	0	0.5	7439-97-6	Mercury	0.023	=	0.017	0.0056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-C-SO	0	0.5	7439-92-1	Lead	190	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.3	J	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-M-SO	0	0.25	7440-39-3	Barium	120	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.19	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-M-SO	0	0.25	7440-47-3	Chromium	6.6	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-M-SO	0	0.25	7439-97-6	Mercury	0.02	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-C-SO	0	0.5	7439-92-1	Lead	180	J	0.97	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-C-SO	0	0.5	7439-92-1	Lead	170	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-C-SO	0	0.5	7439-92-1	Lead	170	=	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-C-SO	0	0.5	7440-38-2	Arsenic	5.2	=	2.3	0.6	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-C-SO	0	0.5	7440-39-3	Barium	120	=	1.8	0.069	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.21	J	0.45	0.037	-	1	Final RCRA Facility Investigation Parcel 6

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FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1003-SS-C-SO	0	0.5	7440-47-3	Chromium	7.3	=	3.2	0.052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-C-SO	0	0.5	7439-97-6	Mercury	0.021	=	0.017	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-C-SO	0	0.5	7439-92-1	Lead	160	J	0.99	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.9	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-M-SO	0	0.25	7440-39-3	Barium	140	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-M-SO	0	0.25	7440-47-3	Chromium	6.5	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-M-SO	0	0.25	7439-97-6	Mercury	0.017	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-C-SO	0	0.5	7439-92-1	Lead	160	J	1	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.7	=	2.7	0.7	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-C-SO	0	0.5	7440-39-3	Barium	130	=	2.1	0.081	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.33	J	0.53	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-C-SO	0	0.5	7440-47-3	Chromium	9.9	J	3.7	0.062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-C-SO	0	0.5	7439-97-6	Mercury	0.034	=	0.019	0.0061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-C-SO	0	0.5	7439-92-1	Lead	150	J	0.83	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.6	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-M-SO	0	0.25	7440-39-3	Barium	130	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.15	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-M-SO	0	0.25	7440-47-3	Chromium	7.9	J	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-C-SO	0	0.5	7439-92-1	Lead	140	J	1	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-C-SO	0	0.5	7440-38-2	Arsenic	3	=	2.3	0.6	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	1.8	0.069	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.25	J	0.45	0.037	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.2	0.053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-C-SO	0	0.5	7439-97-6	Mercury	0.02	=	0.017	0.0056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-C-SO	0	0.5	7439-92-1	Lead	140	J	0.81	0.24	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.5	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-M-SO	0	0.25	7440-39-3	Barium	130	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.18	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-M-SO	0	0.25	7440-47-3	Chromium	7.6	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-M-SO	0	0.25	7439-97-6	Mercury	0.022	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-C-SO	0	0.5	7439-92-1	Lead	140	J	0.99	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.6	=	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-C-SO	0	0.5	7440-39-3	Barium	130	=	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-C-SO	0	0.5	7439-97-6	Mercury	0.026	=	0.018	0.006	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	131	=	0.291	0.145	0.97	0.901	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1012-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.7	=	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SO	0	0.25	7440-39-3	Barium	91	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.087	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SO	0	0.25	7440-47-3	Chromium	5.2	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SO	0	0.25	7439-97-6	Mercury	0.015	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1525LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	131	=	0.145	0.29	0.968	0.926	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1012-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	3	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SODUP	0	0.25	7440-39-3	Barium	180	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.22	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6



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Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1012-SS-M-SODUP	0	0.25	7440-47-3	Chromium	8.3	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.019	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1525LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	131	=	0.134	0.267	0.891	0.862	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1019-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.1	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-M-SO	0	0.25	7440-39-3	Barium	150	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-M-SO	0	0.25	7440-47-3	Chromium	12	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-M-SO	0	0.25	7439-97-6	Mercury	0.024	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-C-SO	0	0.5	7439-92-1	Lead	130	=	0.97	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.8	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-C-SO	0	0.5	7440-39-3	Barium	140	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.35	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-C-SO	0	0.5	7439-97-6	Mercury	0.025	=	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-C-SO	0	0.5	7439-92-1	Lead	130	J	0.99	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.5	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-M-SO	0	0.25	7440-39-3	Barium	170	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-M-SO	0	0.25	7440-47-3	Chromium	9.1	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-M-SO	0	0.25	7439-97-6	Mercury	0.02	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-C-SO	0	0.5	7439-92-1	Lead	120	=	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.7	=	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-C-SO	0	0.5	7440-39-3	Barium	140	=	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-C-SO	0	0.5	7439-97-6	Mercury	0.027	=	0.016	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-C-SO	0	0.5	7439-92-1	Lead	120	J	0.95	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.7	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-C-SO	0	0.5	7440-39-3	Barium	110	=	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.34	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-C-SO	0	0.5	7440-47-3	Chromium	8.6	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-C-SO	0	0.5	7439-97-6	Mercury	0.027	=	0.018	0.0057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-C-SO	0	0.5	7439-92-1	Lead	120	J	1	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SO	0	0.25	7440-38-2	Arsenic	2.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SO	0	0.25	7440-39-3	Barium	77	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.087	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SO	0	0.25	7440-47-3	Chromium	5.6	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SO	0	0.25	7439-97-6	Mercury	0.023	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-C-SO	0	0.5	7439-92-1	Lead	120	J	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	2.8	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SODUP	0	0.25	7440-39-3	Barium	82	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.099	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SODUP	0	0.25	7440-47-3	Chromium	6.3	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.021	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SO	0.17	0.5	7439-92-1	Lead	120	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-C-SO	0	0.5	7439-92-1	Lead	110	J	0.81	0.24	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-C-SO	0	0.5	7439-92-1	Lead	110	=	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.1	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-C-SO	0	0.5	7440-39-3	Barium	120	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1002-SS-C-SO	0	0.5	7440-47-3	Chromium	7.7	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.016	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1543REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	104	=	0.143	0.285	0.951	0.926	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1009-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.3	=	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.79	=	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-C-SO	0	0.5	7439-97-6	Mercury	0.047	=	0.018	0.0057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	101	=	0.313	0.156	1.04	0.926	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1009-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.7	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-M-SO	0	0.25	7440-39-3	Barium	140	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.15	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-M-SO	0	0.25	7440-47-3	Chromium	8.5	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-M-SO	0	0.25	7439-97-6	Mercury	0.027	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-C-SO	0	0.5	7439-92-1	Lead	100	J	0.91	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-C-SO	0	0.5	7439-92-1	Lead	100	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	98.2	=	0.303	0.151	1.01	0.909	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1030-SS-C-SO	0	0.5	7439-92-1	Lead	97	J	0.82	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.2	=	2.6	0.7	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-C-SO	0	0.5	7440-39-3	Barium	130	=	2.1	0.08	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.37	J	0.53	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-C-SO	0	0.5	7440-47-3	Chromium	8.9	=	3.7	0.061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-C-SO	0	0.5	7439-97-6	Mercury	0.028	=	0.017	0.0056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	94.8	J	0.319	0.16	1.06	0.971	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1010-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.7	J	2.4	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-M-SO	0	0.25	7440-39-3	Barium	130	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.18	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-M-SO	0	0.25	7440-47-3	Chromium	7.4	J	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-M-SO	0	0.25	7439-97-6	Mercury	0.031	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-C-SO	0	0.5	7439-97-6	Mercury	0.02	=	0.017	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-C-SO	0	0.5	7439-92-1	Lead	93	=	0.8	0.24	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-M-SO	0	0.25	7440-38-2	Arsenic	2.9	=	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-M-SO	0	0.25	7440-39-3	Barium	180	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.15	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-M-SO	0	0.25	7440-47-3	Chromium	12	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-M-SO	0	0.25	7439-97-6	Mercury	0.026	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005-SS-M-SO	0	0.25	7439-92-1	Lead	92	J	0.83	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SODUP	0	0.5	7439-92-1	Lead	89	J	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-C-SO	0	0.5	7439-92-1	Lead	88	J	0.8	0.24	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-C-SO	0	0.5	7440-38-2	Arsenic	8.1	=	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	2.2	0.082	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1018-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.27	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-C-SO	0	0.5	7439-92-1	Lead	86	J	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.3	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-M-SO	0	0.25	7440-39-3	Barium	140	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-M-SO	0	0.25	7440-47-3	Chromium	9.5	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-M-SO	0	0.25	7439-97-6	Mercury	0.025	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-C-SO	0	0.5	7439-92-1	Lead	83	J	1.1	0.32	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.6	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-C-SO	0	0.5	7439-97-6	Mercury	0.016	J	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	78.5	=	0.296	0.148	0.988	0.909	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1007-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.6	=	2.6	0.69	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-C-SO	0	0.5	7440-39-3	Barium	220	=	2.1	0.079	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.34	J	0.52	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-C-SO	0	0.5	7439-97-6	Mercury	0.027	=	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-C-SO	0	0.5	7439-92-1	Lead	78	=	0.83	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.6	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-M-SO	0	0.25	7440-39-3	Barium	170	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.18	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-M-SO	0	0.25	7440-47-3	Chromium	9	J	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-M-SO	0	0.25	7439-97-6	Mercury	0.025	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	77.1	=	0.299	0.15	0.998	0.917	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1094-SS-C-SO	0	0.5	7439-92-1	Lead	76	=	0.99	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SO	0	0.5	7439-92-1	Lead	69	J	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.1	=	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	2.1	0.079	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.24	J	0.52	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.018	0.0059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	66.1	J	0.31	0.155	1.03	0.971	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1008-SS-M-SO	0	0.25	7440-38-2	Arsenic	4.5	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-M-SO	0	0.25	7440-39-3	Barium	120	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.2	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-M-SO	0	0.25	7440-47-3	Chromium	9.1	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-M-SO	0	0.25	7439-97-6	Mercury	0.028	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-C-SO	0	0.5	7439-92-1	Lead	64	J	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-C-SO	0	0.5	7439-92-1	Lead	64	=	0.97	0.29	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24**  
**FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1011-SS-C-SO	0	0.5	7439-92-1	Lead	63	=	0.82	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.6	=	2.3	0.61	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.42	J	0.46	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-C-SO	0	0.5	7439-97-6	Mercury	0.022	=	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-C-SO	0	0.5	7439-92-1	Lead	63	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.1	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-M-SO	0	0.25	7440-39-3	Barium	150	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.19	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-M-SO	0	0.25	7440-47-3	Chromium	8.6	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-M-SO	0	0.25	7439-97-6	Mercury	0.028	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-C-SO	0	0.5	7439-92-1	Lead	63	J	0.93	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-C-SO	0	0.5	7439-92-1	Lead	63	J	0.94	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	61.8	=	0.328	0.164	1.09	0.971	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1016-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-C-SO	0	0.5	7440-39-3	Barium	230	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.17	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.018	0.0059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-C-SO	0	0.5	7439-92-1	Lead	61	J	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-M-SO	0	0.25	7440-38-2	Arsenic	2.6	=	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-M-SO	0	0.25	7440-39-3	Barium	180	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-M-SO	0	0.25	7439-97-6	Mercury	0.017	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	57	=	0.338	0.169	1.13	0.935	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1017-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.38	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-C-SO	0	0.5	7439-92-1	Lead	57	J	0.95	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.5	=	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-M-SO	0	0.25	7440-39-3	Barium	130	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.16	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-M-SO	0	0.25	7440-47-3	Chromium	6.8	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-M-SO	0	0.25	7439-97-6	Mercury	0.022	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	55.3	J	0.289	0.144	0.963	0.893	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1024-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.4	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-C-SO	0	0.5	7440-39-3	Barium	120	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-C-SO	0	0.5	7440-47-3	Chromium	8.4	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1024-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.017	0.0056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	54.9	=	0.288	0.144	0.962	0.901	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1024-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.8	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-M-SO	0	0.25	7440-39-3	Barium	130	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.17	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-M-SO	0	0.25	7440-47-3	Chromium	7.1	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-M-SO	0	0.25	7439-97-6	Mercury	0.028	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-C-SO	0	0.5	7439-92-1	Lead	54	J	0.98	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.3	0.59	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	1.8	0.069	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.18	J	0.45	0.037	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-C-SO	0	0.5	7440-47-3	Chromium	9.2	=	3.2	0.052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.015	0.005	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	53.1	=	0.312	0.156	1.04	0.926	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1032-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.5	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-C-SO	0	0.5	7440-39-3	Barium	270	=	2	0.077	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.39	J	0.51	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-C-SO	0	0.5	7440-47-3	Chromium	22	=	3.5	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-C-SO	0	0.5	7439-97-6	Mercury	0.022	=	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-C-SO	0	0.5	7439-92-1	Lead	52	J	0.94	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.4	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-M-SO	0	0.25	7440-39-3	Barium	140	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.16	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-M-SO	0	0.25	7440-47-3	Chromium	8.8	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-M-SO	0	0.25	7439-97-6	Mercury	0.02	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-C-SO	0	0.5	7439-92-1	Lead	52	J	1	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1528REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	52	=	0.144	0.287	0.958	0.935	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1079-SS-C-SO	0	0.5	7439-92-1	Lead	50	J	1	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.2	0.59	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-C-SO	0	0.5	7440-39-3	Barium	150	=	1.8	0.067	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.41	J	0.44	0.036	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-C-SO	0	0.5	7440-47-3	Chromium	9.2	=	3.1	0.052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-C-SO	0	0.5	7439-97-6	Mercury	0.018	=	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-C-SO	0	0.5	7439-92-1	Lead	50	J	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.3	=	2.4	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-M-SO	0	0.25	7440-39-3	Barium	140	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-M-SO	0	0.25	7440-47-3	Chromium	7.5	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-M-SO	0	0.25	7439-97-6	Mercury	0.023	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-C-SO	0	0.5	7439-92-1	Lead	49	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SO	0	0.5	7439-92-1	Lead	48	J	0.91	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.8	J	2.8	0.74	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-C-SO	0	0.5	7440-39-3	Barium	220	=	2.3	0.086	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.21	J	0.56	0.046	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1045-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.9	0.065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.019	0.0063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-C-SO	0	0.5	7439-92-1	Lead	47	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.8	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-M-SO	0	0.25	7440-39-3	Barium	220	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-M-SO	0	0.25	7440-47-3	Chromium	10	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-C-SO	0	0.5	7439-92-1	Lead	47	J	0.93	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.069	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-C-SO	0	0.5	7439-97-6	Mercury	0.012	J	0.017	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-C-SO	0	0.5	7439-92-1	Lead	46	=	0.99	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.6	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-M-SO	0	0.25	7440-39-3	Barium	180	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.1	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-M-SO	0	0.25	7440-47-3	Chromium	10	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-C-SO	0	0.5	7439-92-1	Lead	46	J	0.91	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.1	J	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-M-SO	0	0.25	7440-39-3	Barium	220	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.076	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-M-SO	0	0.25	7440-47-3	Chromium	9.1	=	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-M-SO	0	0.25	7439-97-6	Mercury	0.013	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-C-SO	0	0.5	7439-92-1	Lead	45	=	0.81	0.24	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.7	0.72	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-C-SO	0	0.5	7440-39-3	Barium	220	=	2.2	0.083	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.41	J	0.55	0.045	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.8	0.064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-C-SO	0	0.5	7439-97-6	Mercury	0.018	J	0.019	0.0062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-C-SO	0	0.5	7439-92-1	Lead	45	=	0.99	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.1	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-M-SO	0	0.25	7440-39-3	Barium	210	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-M-SO	0	0.25	7440-47-3	Chromium	9.6	J	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-M-SO	0	0.25	7439-97-6	Mercury	0.015	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-C-SO	0	0.5	7439-92-1	Lead	45	J	0.95	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.97	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-C-SO	0	0.5	7440-39-3	Barium	200	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.018	0.0059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1005REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	40	=	0.315	0.157	1.05	0.962	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1061-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.3	J	2.7	0.72	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	2.2	0.083	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.067	J	0.55	0.045	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1061-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.018	0.0059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-C-SO	0	0.5	7439-92-1	Lead	40	J	0.93	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-M-SO	0	0.25	7440-38-2	Arsenic	1	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-M-SO	0	0.25	7440-39-3	Barium	240	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.044	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-M-SO	0	0.25	7440-47-3	Chromium	8	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-M-SO	0	0.25	7439-97-6	Mercury	0.01	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-C-SO	0	0.5	7439-92-1	Lead	39	=	1	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-C-SO	0	0.5	7440-38-2	Arsenic	3	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-C-SO	0	0.5	7440-39-3	Barium	350	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.017	0.0057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-M-SO	0	0.25	7439-92-1	Lead	39	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.5	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-M-SO	0	0.25	7440-39-3	Barium	320	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-M-SO	0	0.25	7440-47-3	Chromium	8.4	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-C-SO	0	0.5	7439-92-1	Lead	38	J	0.97	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-C-SO	0	0.5	7440-39-3	Barium	370	=	2.1	0.079	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.091	J	0.52	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.018	0.006	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-C-SO	0	0.5	7439-92-1	Lead	38	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.74	J	2.6	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-C-SO	0	0.5	7440-39-3	Barium	270	=	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.019	0.0061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	37.3	=	0.282	0.141	0.941	0.901	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1070-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.1	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SO	0	0.25	7440-39-3	Barium	270	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.093	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SO	0	0.25	7440-47-3	Chromium	9.6	J	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SO	0	0.25	7439-97-6	Mercury	0.013	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058REC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	36.5	J	0.299	0.15	0.997	0.935	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1070-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	0.9	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SODUP	0	0.25	7440-39-3	Barium	270	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.081	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SODUP	0	0.25	7440-47-3	Chromium	9.9	J	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.012	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SODUP	0	0.5	7439-92-1	Lead	35	J	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.92	J	2.8	0.74	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-C-SO	0	0.5	7440-39-3	Barium	310	=	2.2	0.085	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.56	0.046	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1071-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.9	0.065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SO	0	0.25	7439-92-1	Lead	35	J	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.3	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-M-SO	0	0.25	7440-39-3	Barium	270	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SODUP	0	0.25	7439-92-1	Lead	35	J	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.8	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.019	0.0063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-C-SO	0	0.5	7439-92-1	Lead	34	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.6	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-M-SO	0	0.25	7440-39-3	Barium	240	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-M-SO	0	0.25	7782-49-2	Selenium	0.87	J	3	0.86	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-M-SO	0	0.25	7439-97-6	Mercury	0.009	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-C-SO	0	0.5	7439-92-1	Lead	34	J	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.8	0.73	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-C-SO	0	0.5	7440-39-3	Barium	250	=	2.2	0.084	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.55	0.045	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-C-SO	0	0.5	7440-47-3	Chromium	19	=	3.9	0.064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0086	J	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SO	0	0.25	7439-92-1	Lead	34	=	0.88	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.1	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-M-SO	0	0.25	7440-39-3	Barium	270	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.1	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-M-SO	0	0.25	7439-97-6	Mercury	0.01	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-C-SO	0	0.5	7439-92-1	Lead	34	=	0.97	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.4	J	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-C-SO	0	0.5	7440-39-3	Barium	280	=	2.1	0.079	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.099	J	0.52	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1013-SS-M-SO	0	0.25	7439-92-1	Lead	33	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-C-SO	0	0.5	7440-38-2	Arsenic	7.2	=	2.6	0.69	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-C-SO	0	0.5	7440-39-3	Barium	1600	J	2.1	0.079	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.19	J	0.52	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-C-SO	0	0.5	7440-47-3	Chromium	4.8	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.018	0.006	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-C-SO	0	0.5	7439-92-1	Lead	33	J	0.88	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-M-SO	0	0.25	7440-38-2	Arsenic	2.7	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-M-SO	0	0.25	7440-39-3	Barium	320	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.11	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-M-SO	0	0.25	7440-47-3	Chromium	9.8	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0087	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-C-SO	0	0.5	7439-92-1	Lead	33	=	0.93	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-C-SO	0	0.5	7440-38-2	Arsenic	2	J	2.8	0.73	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-C-SO	0	0.5	7440-39-3	Barium	270	J	2.2	0.085	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.56	0.046	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.9	0.065	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1088-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0081	J	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SO	0	0.25	7439-92-1	Lead	33	J	0.88	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.9	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-M-SO	0	0.25	7440-39-3	Barium	350	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.11	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-M-SO	0	0.25	7440-47-3	Chromium	7.5	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-M-SO	0	0.25	7439-97-6	Mercury	0.014	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	32.6	=	0.305	0.152	1.02	0.952	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1095-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.2	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SO	0	0.5	7440-39-3	Barium	410	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.094	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0067	J	0.02	0.0064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-C-SO	0	0.5	7439-92-1	Lead	32	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SODUP	0	0.5	7440-38-2	Arsenic	1.6	J	2.7	0.72	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SODUP	0	0.5	7440-39-3	Barium	410	J	2.2	0.083	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SODUP	0	0.5	7440-43-9	Cadmium	0.11	J	0.54	0.045	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SODUP	0	0.5	7440-47-3	Chromium	12	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	31.6	=	0.316	0.158	1.05	0.935	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1095-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.5	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-M-SO	0	0.25	7440-39-3	Barium	330	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-M-SO	0	0.25	7440-47-3	Chromium	9.6	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SODUP	0	0.25	7439-92-1	Lead	30	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.5	J	2.7	0.73	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-C-SO	0	0.5	7440-39-3	Barium	450	J	2.2	0.084	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.24	J	0.55	0.045	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-C-SO	0	0.5	7440-47-3	Chromium	17	=	3.8	0.064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-C-SO	0	0.5	7439-97-6	Mercury	0.012	J	0.017	0.0056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-C-SO	0	0.5	7439-97-6	Mercury	0.021	=	0.016	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SODUP	0	0.25	7439-92-1	Lead	30	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-M-SO	0	0.25	7440-38-2	Arsenic	3	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-M-SO	0	0.25	7440-39-3	Barium	190	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-M-SO	0	0.25	7440-47-3	Chromium	9.2	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-M-SO	0	0.25	7439-97-6	Mercury	0.018	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-C-SO	0	0.5	7439-92-1	Lead	30	J	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.1	=	2.6	0.69	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SO	0	0.5	7440-39-3	Barium	200	=	2.1	0.079	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.52	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.7	0.061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.016	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-C-SO	0	0.5	7439-92-1	Lead	30	=	0.98	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SODUP	0	0.5	7440-38-2	Arsenic	3.1	=	2.7	0.7	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1031-SS-C-SODUP	0	0.5	7440-39-3	Barium	200	=	2.1	0.081	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SODUP	0	0.5	7440-43-9	Cadmium	0.21	J	0.53	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SODUP	0	0.5	7440-47-3	Chromium	14	=	3.7	0.062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-C-SODUP	0	0.5	7439-97-6	Mercury	0.02	=	0.017	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-C-SO	0	0.5	7439-92-1	Lead	29	J	1	0.3	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.1	=	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-M-SO	0	0.25	7440-39-3	Barium	160	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-M-SO	0	0.25	7440-47-3	Chromium	9.8	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-M-SO	0	0.25	7439-97-6	Mercury	0.016	J	0.031	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	28.3	=	0.326	0.163	1.09	0.971	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1021REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	28.2	=	0.28	0.14	0.933	0.885	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1021REC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	28	=	0.275	0.138	0.917	0.87	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1038-SS-C-SO	0	0.5	7440-39-3	Barium	300	=	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.093	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-C-SO	0	0.5	7439-97-6	Mercury	0.012	J	0.019	0.0063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-M-SO	0	0.25	7439-92-1	Lead	28	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.6	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-M-SO	0	0.25	7440-39-3	Barium	260	=	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-M-SO	0	0.25	7440-47-3	Chromium	13	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-M-SO	0	0.25	7439-97-6	Mercury	0.01	J	0.031	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-M-SO	0	0.25	7439-92-1	Lead	28	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.4	J	2.5	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-C-SO	0	0.5	7440-39-3	Barium	240	J	2	0.077	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.51	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-C-SO	0	0.5	7440-47-3	Chromium	17	=	3.5	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-C-SO	0	0.5	7782-49-2	Selenium	0.95	J	3	0.87	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.019	0.0061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	27.5	=	0.3	0.15	1	0.917	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1044-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.7	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SO	0	0.25	7440-47-3	Chromium	13	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SODUP	0	0.25	7439-92-1	Lead	26	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	1.9	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SODUP	0	0.25	7440-39-3	Barium	220	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1044-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.14	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SODUP	0	0.25	7440-47-3	Chromium	12	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1547REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	25.4	=	0.133	0.266	0.887	0.87	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1050-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.6	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-M-SO	0	0.25	7440-39-3	Barium	240	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-M-SO	0	0.25	7440-47-3	Chromium	9.5	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0093	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1019-SS-C-SO	0	0.5	7439-92-1	Lead	25	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.92	J	2.5	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-C-SO	0	0.5	7440-39-3	Barium	220	=	2	0.077	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.23	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-C-SO	0	0.5	7440-47-3	Chromium	18	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-C-SO	0	0.5	7439-97-6	Mercury	0.02	=	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1045-SS-M-SO	0	0.25	7439-92-1	Lead	25	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.3	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-M-SO	0	0.25	7440-39-3	Barium	280	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-M-SO	0	0.25	7440-47-3	Chromium	11	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051-SS-M-SO	0	0.25	7439-97-6	Mercury	0.014	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1087-SS-M-SO	0	0.25	7439-92-1	Lead	25	J	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-M-SO	0	0.25	7439-92-1	Lead	25	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-C-SO	0	0.5	7439-92-1	Lead	24	J	0.91	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SO	0	0.5	7440-39-3	Barium	500	=	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SO	0	0.5	7440-47-3	Chromium	9.8	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SO	0	0.5	7439-97-6	Mercury	0.016	J	0.018	0.0059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1021-SS-M-SO	0	0.25	7439-92-1	Lead	23	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SODUP	0	0.5	7440-38-2	Arsenic	1	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SODUP	0	0.5	7440-39-3	Barium	200	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SODUP	0	0.5	7440-43-9	Cadmium	0.15	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SODUP	0	0.5	7440-47-3	Chromium	11	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-C-SODUP	0	0.5	7439-97-6	Mercury	0.017	J	0.018	0.006	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031-SS-M-SO	0	0.25	7439-92-1	Lead	23	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-C-SO	0	0.5	7440-39-3	Barium	250	J	2.2	0.082	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	J	0.02	0.0067	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1051LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	22.5	=	0.298	0.149	0.994	0.926	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1059-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.3	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.073	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-M-SO	0	0.25	7440-47-3	Chromium	8.9	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-M-SO	0	0.25	7439-97-6	Mercury	0.013	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1021-SS-M-SODUP	0	0.25	7439-92-1	Lead	22	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1078-SS-M-SO	0	0.25	7439-92-1	Lead	22	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	21.6	=	0.315	0.157	1.05	0.962	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1060-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.4	J	2.7	0.7	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	2.1	0.081	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.094	J	0.53	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.7	0.062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	J	0.02	0.0064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1011-SS-M-SO	0	0.25	7439-92-1	Lead	20	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.3	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.053	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-M-SO	0	0.25	7440-47-3	Chromium	10	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.03	0.005	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-M-SO	0	0.25	7440-39-3	Barium	250	=	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.055	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-M-SO	0	0.25	7440-47-3	Chromium	10	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1008-SS-M-SO	0	0.25	7439-92-1	Lead	20	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-C-SO	0	0.5	7440-39-3	Barium	400	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.057	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.019	0.0062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-M-SO	0	0.25	7439-92-1	Lead	20	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-M-SO	0	0.25	7440-38-2	Arsenic	0.95	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-M-SO	0	0.25	7440-39-3	Barium	250	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.063	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-M-SO	0	0.25	7440-47-3	Chromium	10	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0099	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SODUP	0	0.25	7439-92-1	Lead	20	J	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-C-SO	0	0.5	7440-39-3	Barium	250	=	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-C-SO	0	0.5	7439-97-6	Mercury	0.016	J	0.017	0.0056	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1524REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.9	=	0.137	0.273	0.91	0.87	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1069-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.1	J	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-M-SO	0	0.25	7440-39-3	Barium	290	=	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.085	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-M-SO	0	0.25	7440-47-3	Chromium	10	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.7	=	0.303	0.152	1.01	0.952	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1076-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.8	0.73	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1076-SS-C-SO	0	0.5	7440-39-3	Barium	660	=	2.2	0.085	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.56	0.046	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0089	J	0.019	0.0062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.6	=	0.291	0.146	0.97	0.952	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1076-SS-M-SO	0	0.25	7440-38-2	Arsenic	1	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-M-SO	0	0.25	7440-39-3	Barium	280	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.072	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-M-SO	0	0.25	7440-47-3	Chromium	9.6	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0075	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.6	=	0.3	0.15	1	0.943	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1077-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.7	J	2.6	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-C-SO	0	0.5	7440-39-3	Barium	320	=	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.065	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.019	0.0063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002-SS-M-SO	0	0.25	7439-92-1	Lead	19	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-M-SO	0	0.25	7440-38-2	Arsenic	1	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.094	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-M-SO	0	0.25	7440-47-3	Chromium	7.4	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0069	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-M-SO	0	0.25	7440-47-3	Chromium	8.3	=	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-C-SO	0	0.5	7439-92-1	Lead	19	=	0.96	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.5	J	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-C-SO	0	0.5	7440-39-3	Barium	380	=	2.2	0.082	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-C-SO	0	0.5	7439-97-6	Mercury	0.01	J	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1527REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	18.9	=	0.145	0.291	0.968	0.952	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1085-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-M-SO	0	0.25	7440-39-3	Barium	280	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.11	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-M-SO	0	0.25	7440-47-3	Chromium	8.9	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1002LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	18.6	=	0.324	0.162	1.08	0.962	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1086-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.2	J	2.6	0.69	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-C-SO	0	0.5	7440-39-3	Barium	260	=	2.1	0.08	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.32	J	0.53	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.7	0.061	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1086-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0094	J	0.019	0.0062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1006-SS-M-SO	0	0.25	7439-92-1	Lead	18	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.3	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-M-SO	0	0.25	7440-39-3	Barium	310	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-M-SO	0	0.25	7440-47-3	Chromium	9.3	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-M-SO	0	0.25	7439-92-1	Lead	18	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.3	J	2.8	0.73	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-C-SO	0	0.5	7440-39-3	Barium	220	J	2.2	0.084	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.55	0.045	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0089	J	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SO	0	0.25	7439-92-1	Lead	18	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-M-SO	0	0.25	7439-92-1	Lead	18	=	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.1	J	2.8	0.73	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-C-SO	0	0.5	7440-39-3	Barium	340	J	2.2	0.084	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-C-SO	0	0.5	7440-43-9	Cadmium	1.5	=	0.55	0.045	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-C-SO	0	0.5	7439-97-6	Mercury	0.01	J	0.018	0.006	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-C-SO	0	0.5	7439-92-1	Lead	18	J	0.95	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-M-SO	0	0.25	7440-39-3	Barium	290	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-M-SO	0	0.25	7440-47-3	Chromium	10	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-M-SO	0	0.25	7439-97-6	Mercury	0.013	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	17.3	J	0.29	0.145	0.967	0.917	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1025-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.3	=	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SO	0	0.25	7440-39-3	Barium	97	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SO	0	0.25	7440-47-3	Chromium	5.2	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SO	0	0.25	7439-97-6	Mercury	0.019	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1033-SS-M-SO	0	0.25	7439-92-1	Lead	17	=	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	3.7	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SODUP	0	0.25	7440-39-3	Barium	100	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.14	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SODUP	0	0.25	7440-47-3	Chromium	5.7	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.019	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1053-SS-M-SO	0	0.25	7439-92-1	Lead	17	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.5	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-C-SO	0	0.5	7440-39-3	Barium	330	=	2	0.077	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.51	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.5	0.059	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1027-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.016	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1038-SS-C-SO	0	0.5	7439-92-1	Lead	17	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-M-SO	0	0.25	7440-38-2	Arsenic	2	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-M-SO	0	0.25	7440-39-3	Barium	180	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.09	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-M-SO	0	0.25	7440-47-3	Chromium	9	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-M-SO	0	0.25	7439-92-1	Lead	17	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.9	=	2.3	0.6	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-C-SO	0	0.5	7440-39-3	Barium	260	=	1.8	0.069	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.39	J	0.46	0.037	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.2	0.053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-M-SO	0	0.25	7439-92-1	Lead	17	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SO	0	0.25	7440-38-2	Arsenic	2.7	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SO	0	0.25	7440-39-3	Barium	120	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.16	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SO	0	0.25	7440-47-3	Chromium	9.1	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SO	0	0.25	7439-97-6	Mercury	0.016	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	16.7	=	0.316	0.158	1.05	0.971	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1036-SS-M-SODUP	0	0.25	7440-39-3	Barium	110	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.14	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SODUP	0	0.25	7440-47-3	Chromium	8.2	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.017	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	16.1	=	0.308	0.154	1.03	0.952	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1037-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-C-SO	0	0.5	7440-39-3	Barium	310	=	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.19	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-C-SO	0	0.5	7440-47-3	Chromium	17	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.019	0.0061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1014-SS-M-SO	0	0.25	7439-92-1	Lead	16	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.7	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-M-SO	0	0.25	7440-39-3	Barium	250	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.099	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-M-SO	0	0.25	7440-47-3	Chromium	12	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1003-SS-M-SO	0	0.25	7439-92-1	Lead	16	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.2	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-M-SO	0	0.25	7440-39-3	Barium	200	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.11	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-M-SO	0	0.25	7440-47-3	Chromium	8.6	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0098	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1004-SS-M-SO	0	0.25	7439-92-1	Lead	16	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-C-SO	0	0.5	7440-39-3	Barium	250	=	2.1	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1049-SS-C-SO	0	0.5	7440-47-3	Chromium	9.5	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.016	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1010-SS-M-SO	0	0.25	7439-92-1	Lead	16	J	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.6	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-M-SO	0	0.25	7440-39-3	Barium	290	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-M-SO	0	0.25	7440-47-3	Chromium	8.1	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-M-SO	0	0.25	7439-97-6	Mercury	0.014	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1017-SS-M-SO	0	0.25	7439-92-1	Lead	16	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-C-SO	0	0.5	7440-38-2	Arsenic	1	J	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-M-SO	0	0.25	7439-97-6	Mercury	0.017	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1018-SS-M-SO	0	0.25	7439-92-1	Lead	16	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.4	J	2.9	0.77	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-C-SO	0	0.5	7440-39-3	Barium	340	=	2.3	0.089	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.58	0.048	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	4.1	0.068	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-C-SO	0	0.5	7439-97-6	Mercury	0.023	=	0.02	0.0065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1007-SS-M-SO	0	0.25	7439-92-1	Lead	16	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.6	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.15	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-M-SO	0	0.25	7439-97-6	Mercury	0.013	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032-SS-M-SO	0	0.25	7439-92-1	Lead	16	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-C-SO	0	0.5	7440-39-3	Barium	270	=	2.2	0.082	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-C-SO	0	0.5	7439-97-6	Mercury	0.023	=	0.019	0.0062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1044-SS-M-SODUP	0	0.25	7439-92-1	Lead	16	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-M-SO	0	0.25	7440-38-2	Arsenic	0.98	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-M-SO	0	0.25	7440-39-3	Barium	220	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.15	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-M-SO	0	0.25	7440-47-3	Chromium	8.7	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-M-SO	0	0.25	7439-97-6	Mercury	0.017	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-M-SO	0	0.25	7439-92-1	Lead	16	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SO	0	0.25	7439-92-1	Lead	16	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1549REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	15.2	=	0.138	0.275	0.918	0.901	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1019-SS-M-SO	0	0.25	7439-92-1	Lead	15	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.1	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-M-SO	0	0.25	7440-39-3	Barium	330	=	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.1	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-M-SO	0	0.25	7440-47-3	Chromium	11	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1024-SS-M-SO	0	0.25	7439-92-1	Lead	15	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.8	0.73	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-C-SO	0	0.5	7440-39-3	Barium	330	=	2.2	0.084	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1066-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.49	J	0.55	0.045	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.02	0.0065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SODUP	0	0.5	7439-92-1	Lead	15	=	0.98	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.1	J	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-M-SO	0	0.25	7440-39-3	Barium	300	=	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.092	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-M-SO	0	0.25	7440-47-3	Chromium	9.9	J	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-M-SO	0	0.25	7439-97-6	Mercury	0.013	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-M-SO	0	0.25	7439-92-1	Lead	15	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-C-SO	0	0.5	7440-39-3	Barium	340	=	2.1	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.017	0.0056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1069-SS-M-SO	0	0.25	7439-92-1	Lead	15	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-M-SO	0	0.25	7440-38-2	Arsenic	0.95	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1066-SS-M-SO	0	0.25	7439-92-1	Lead	15	=	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.2	=	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-C-SO	0	0.5	7440-39-3	Barium	360	=	2.2	0.082	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.019	0.0062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-M-SO	0	0.25	7439-92-1	Lead	15	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.9	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-M-SO	0	0.25	7440-39-3	Barium	250	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-M-SO	0	0.25	7440-47-3	Chromium	11	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-M-SO	0	0.25	7782-49-2	Selenium	0.87	J	2.9	0.83	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0065	J	0.031	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	14.8	=	0.298	0.149	0.993	0.935	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1075-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.6	0.69	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-C-SO	0	0.5	7440-39-3	Barium	330	=	2.1	0.08	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.53	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.7	0.061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0093	J	0.018	0.006	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	14.4	=	0.294	0.147	0.98	0.893	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1075-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.2	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-M-SO	0	0.25	7440-39-3	Barium	220	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.081	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-M-SO	0	0.25	7440-47-3	Chromium	8.5	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0061	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1051REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	14.1	=	0.306	0.153	1.02	0.962	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1082-SS-M-SO	0	0.25	7440-38-2	Arsenic	1	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.16	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1022-SS-M-SO	0	0.25	7439-92-1	Lead	14	=	0.88	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.4	J	2.8	0.73	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-C-SO	0	0.5	7440-39-3	Barium	280	=	2.2	0.085	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.56	0.046	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.02	0.0065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1020-SS-M-SO	0	0.25	7439-92-1	Lead	14	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.5	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-M-SO	0	0.25	7440-47-3	Chromium	9.4	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1009-SS-M-SO	0	0.25	7439-92-1	Lead	14	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.4	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-C-SO	0	0.5	7440-39-3	Barium	240	=	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0094	J	0.02	0.0065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015-SS-M-SO	0	0.25	7439-92-1	Lead	14	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.6	J	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-M-SO	0	0.25	7440-39-3	Barium	300	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.11	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.3	J	2.7	0.7	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-C-SO	0	0.5	7440-39-3	Barium	140	J	2.1	0.081	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.073	J	0.53	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.7	0.062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0065	J	0.019	0.0061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1023-SS-M-SO	0	0.25	7439-92-1	Lead	14	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.2	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SO	0	0.25	7440-39-3	Barium	160	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.11	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SO	0	0.25	7440-47-3	Chromium	13	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SO	0	0.25	7439-92-1	Lead	14	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	1.2	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SODUP	0	0.25	7440-39-3	Barium	170	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.13	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SODUP	0	0.25	7440-47-3	Chromium	14	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1091-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.011	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1079-SS-M-SO	0	0.25	7439-92-1	Lead	14	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.7	J	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-C-SO	0	0.5	7440-39-3	Barium	270	J	2.1	0.081	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1092-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.087	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.7	0.062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1095-SS-C-SO	0	0.5	7439-92-1	Lead	14	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-M-SO	0	0.25	7440-39-3	Barium	240	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-M-SO	0	0.25	7440-47-3	Chromium	12	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.9	=	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	2.1	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.29	J	0.52	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-C-SO	0	0.5	7439-97-6	Mercury	0.018	=	0.017	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1030-SS-M-SO	0	0.25	7439-92-1	Lead	14	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.3	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-M-SO	0	0.25	7440-39-3	Barium	160	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.21	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-M-SO	0	0.25	7440-47-3	Chromium	8	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034-SS-M-SO	0	0.25	7439-97-6	Mercury	0.019	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1050-SS-M-SO	0	0.25	7439-92-1	Lead	14	J	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1060-SS-M-SO	0	0.25	7439-92-1	Lead	14	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1057-SS-M-SO	0	0.25	7439-92-1	Lead	14	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.5	=	2.3	0.61	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-C-SO	0	0.5	7440-39-3	Barium	150	=	1.8	0.07	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.26	J	0.46	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.2	0.053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-C-SO	0	0.5	7439-97-6	Mercury	0.02	=	0.016	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1058-SS-M-SO	0	0.25	7439-92-1	Lead	14	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-M-SO	0	0.25	7440-38-2	Arsenic	3.7	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-M-SO	0	0.25	7440-39-3	Barium	150	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.15	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-M-SO	0	0.25	7440-47-3	Chromium	7.1	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-M-SO	0	0.25	7439-97-6	Mercury	0.021	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1527LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.8	=	0.137	0.275	0.916	0.901	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1036-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.2	0.59	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	1.8	0.068	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.24	J	0.45	0.037	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.1	0.052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1036-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.016	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1533LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.6	=	0.136	0.273	0.91	0.885	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1047-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.5	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SO	0	0.5	7440-39-3	Barium	180	=	2	0.077	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.14	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.019	0.006	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1531REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.5	=	0.145	0.29	0.967	0.952	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1047-SS-C-SODUP	0	0.5	7440-38-2	Arsenic	1.7	J	2.6	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SODUP	0	0.5	7440-39-3	Barium	180	=	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1047-SS-C-SODUP	0	0.5	7440-43-9	Cadmium	0.083	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SODUP	0	0.5	7440-47-3	Chromium	13	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-C-SODUP	0	0.5	7439-97-6	Mercury	0.012	J	0.017	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.2	=	0.293	0.147	0.978	0.935	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1047-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SO	0	0.25	7440-39-3	Barium	170	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.16	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1016-SS-M-SO	0	0.25	7439-92-1	Lead	13	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	1.2	J	2.3	0.61	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SODUP	0	0.25	7440-39-3	Barium	170	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.23	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SODUP	0	0.25	7440-47-3	Chromium	9.9	=	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1047-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.01	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1046-SS-M-SO	0	0.25	7439-92-1	Lead	13	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.13	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1048-SS-C-SO	0	0.5	7439-97-6	Mercury	0.012	J	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1062-SS-M-SO	0	0.25	7439-92-1	Lead	13	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.2	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-M-SO	0	0.25	7440-39-3	Barium	220	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-M-SO	0	0.25	7440-47-3	Chromium	9.1	J	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-M-SO	0	0.25	7439-97-6	Mercury	0.014	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059-SS-M-SO	0	0.25	7439-92-1	Lead	13	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1037-SS-M-SO	0	0.25	7439-92-1	Lead	13	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1035-SS-M-SO	0	0.25	7439-92-1	Lead	13	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.3	J	2.8	0.74	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-C-SO	0	0.5	7440-39-3	Barium	240	=	2.2	0.085	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.14	J	0.56	0.046	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.065	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-C-SO	0	0.5	7439-97-6	Mercury	0.017	J	0.018	0.0057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-C-SO	0	0.5	7439-92-1	Lead	13	J	0.96	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-M-SO	0	0.25	7440-38-2	Arsenic	1	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-M-SO	0	0.25	7440-39-3	Barium	250	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.11	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-M-SO	0	0.25	7440-47-3	Chromium	9.7	J	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1055-SS-M-SO	0	0.25	7439-97-6	Mercury	0.014	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-M-SO	0	0.25	7439-92-1	Lead	13	J	0.88	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-C-SO	0	0.5	7440-39-3	Barium	360	=	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.055	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.018	0.0057	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	1641K-1541LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13	=	0.15	0.299	0.997	0.971	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1056-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-M-SO	0	0.25	7440-39-3	Barium	250	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.14	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1056-SS-M-SO	0	0.25	7440-47-3	Chromium	9.9	J	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1546LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.8	=	0.145	0.291	0.968	0.952	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1063-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.6	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-M-SO	0	0.25	7440-39-3	Barium	370	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-M-SO	0	0.25	7440-47-3	Chromium	9.2	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-M-SO	0	0.25	7782-49-2	Selenium	1.7	J	2.8	0.82	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-M-SO	0	0.25	7439-97-6	Mercury	0.013	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1529LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.4	=	0.144	0.287	0.957	0.935	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628B-1064-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.8	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-C-SO	0	0.5	7440-39-3	Barium	290	=	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0085	J	0.018	0.0059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.3	=	0.285	0.143	0.951	0.885	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1064-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.1	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-M-SO	0	0.25	7440-39-3	Barium	260	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.061	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-M-SO	0	0.25	7440-47-3	Chromium	9.6	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-M-SO	0	0.25	7439-97-6	Mercury	0.01	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1061-SS-M-SO	0	0.25	7439-92-1	Lead	12	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.8	J	2.6	0.69	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	2.1	0.079	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.11	J	0.52	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-C-SO	0	0.5	7440-47-3	Chromium	6.9	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1065-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.016	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.091	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-M-SO	0	0.25	7440-47-3	Chromium	10	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-M-SO	0	0.25	7439-92-1	Lead	12	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-C-SO	0	0.5	7440-22-4	Silver	0.61	J	1.6	0.17	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-C-SO	0	0.5	7440-39-3	Barium	320	J	2.1	0.08	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.35	J	0.52	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.7	0.061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.018	0.0059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1025-SS-M-SO	0	0.25	7439-92-1	Lead	12	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.9	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.16	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-M-SO	0	0.25	7440-47-3	Chromium	8.6	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-M-SO	0	0.25	7782-49-2	Selenium	0.85	J	3	0.85	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.03	0.005	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1025-SS-M-SODUP	0	0.25	7439-92-1	Lead	12	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1027-SS-M-SO	0	0.25	7439-92-1	Lead	12	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1074-SS-M-SO	0	0.25	7439-92-1	Lead	12	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.2	J	2.8	0.73	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-C-SO	0	0.5	7440-39-3	Barium	290	=	2.2	0.084	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.38	J	0.55	0.045	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.9	0.064	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-M-SO	0	0.25	7439-92-1	Lead	12	J	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.4	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-M-SO	0	0.25	7440-39-3	Barium	260	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.13	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1073-SS-M-SO	0	0.25	7439-97-6	Mercury	0.01	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-C-SO	0	0.5	7439-97-6	Mercury	0.016	J	0.017	0.0056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-M-SO	0	0.25	7439-92-1	Lead	12	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.7	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-M-SO	0	0.25	7440-39-3	Barium	260	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1006-SS-M-SO	0.17	0.5	7439-92-1	Lead	12	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.6	0.7	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-C-SO	0	0.5	7440-39-3	Barium	330	=	2.1	0.08	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.14	J	0.53	0.043	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.7	0.061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.017	0.0057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1034REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	11.9	=	0.271	0.136	0.905	0.855	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1081-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.8	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-M-SO	0	0.25	7440-39-3	Barium	230	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.16	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-M-SO	0	0.25	7440-47-3	Chromium	10	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1081-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.031	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1015LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	11.3	=	0.287	0.144	0.957	0.877	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1082-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.7	J	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-C-SO	0	0.5	7440-39-3	Barium	260	=	2.1	0.081	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.056	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.8	0.062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1082-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.019	0.0061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	11.1	=	0.306	0.153	1.02	0.935	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628B-1089-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.91	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1089-SS-C-SO	0	0.5	7440-39-3	Barium	160	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.14	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-C-SO	0	0.5	7440-47-3	Chromium	8.9	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.019	0.0061	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1052-SS-M-SO	0	0.25	7439-92-1	Lead	11	=	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.5	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-M-SO	0	0.25	7440-39-3	Barium	240	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.089	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-M-SO	0	0.25	7440-47-3	Chromium	14	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1071-SS-M-SO	0	0.25	7439-92-1	Lead	11	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.6	0.67	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-C-SO	0	0.5	7440-39-3	Barium	250	J	2	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.27	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.6	0.059	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0089	J	0.019	0.0062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1054-SS-M-SO	0	0.25	7439-92-1	Lead	11	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.5	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-M-SO	0	0.25	7440-39-3	Barium	260	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.096	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-M-SO	0	0.25	7440-47-3	Chromium	12	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-M-SO	0	0.25	7439-97-6	Mercury	0.01	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1063-SS-M-SO	0	0.25	7439-92-1	Lead	11	=	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1080-SS-M-SO	0	0.25	7439-92-1	Lead	11	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-M-SO	0	0.25	7440-39-3	Barium	340	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-M-SO	0	0.25	7440-47-3	Chromium	11	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1005-SS-M-SO	0.17	0.5	7439-92-1	Lead	11	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.6	0.68	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-C-SO	0	0.5	7440-39-3	Barium	240	J	2.1	0.078	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.51	0.042	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-C-SO	0	0.5	7440-47-3	Chromium	9.5	=	3.6	0.06	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-C-SO	0	0.5	7439-97-6	Mercury	0.03	=	0.018	0.006	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1008-SS-M-SO	0.17	0.5	7439-92-1	Lead	11	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.9	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-M-SO	0	0.25	7440-39-3	Barium	300	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.068	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-M-SO	0	0.25	7440-47-3	Chromium	6.8	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1097-SS-M-SO	0	0.25	7439-97-6	Mercury	0.0092	J	0.031	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1019-SS-M-SO	0.17	0.5	7439-92-1	Lead	11	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.4	J	2.7	0.72	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-C-SO	0	0.5	7440-39-3	Barium	340	J	2.2	0.082	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.13	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-C-SO	0	0.5	7439-97-6	Mercury	0.01	J	0.018	0.0058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1015-SS-M-SO	0.17	0.5	7439-92-1	Lead	11	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-M-SO	0	0.25	7440-39-3	Barium	220	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.1	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628Y-B1018-SS-M-SODUP	0.17	0.5	7439-92-1	Lead	11	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1005-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.6	J	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1005-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1005-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.13	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1005-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1005-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.035	=	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1011-SS-M-SO	0.17	0.5	7439-92-1	Lead	11	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1006-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.6	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1006-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1006-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1006-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9.7	J	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1006-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.036	=	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1012-SS-M-SO	0.17	0.5	7439-92-1	Lead	11	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1008-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.3	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1008-SS-M-SO	0.17	0.5	7440-39-3	Barium	130	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1008-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.14	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1008-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9.5	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1008-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.037	=	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1524LEC-1.0-1.5D-SO	1	1.5	7439-92-1	Lead	10.8	J	0.162	0.324	1.08	0.971	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628Y-B1009-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.6	J	2.4	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1009-SS-M-SO	0.17	0.5	7440-39-3	Barium	110	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1009-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.09	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1009-SS-M-SO	0.17	0.5	7440-47-3	Chromium	8.7	J	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1009-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.027	J	0.031	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SODUP	0	0.25	7439-92-1	Lead	10	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1025-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.9	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1025-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1025-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.11	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1025-SS-M-SO	0.17	0.5	7440-47-3	Chromium	6.5	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1025-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.031	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1070-SS-M-SODUP	0	0.25	7439-92-1	Lead	10	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.9	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SO	0.17	0.5	7440-39-3	Barium	230	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.063	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SO	0.17	0.5	7440-47-3	Chromium	10	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.011	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SO	0.17	0.5	7439-92-1	Lead	10	=	0.85	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SODUP	0.17	0.5	7440-38-2	Arsenic	2.1	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SODUP	0.17	0.5	7440-39-3	Barium	230	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SODUP	0.17	0.5	7440-43-9	Cadmium	0.062	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SODUP	0.17	0.5	7440-47-3	Chromium	10	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SODUP	0.17	0.5	7439-97-6	Mercury	0.011	J	0.03	0.005	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1033-SS-M-SO	0.17	0.5	7439-92-1	Lead	10	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1028-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	2.2	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1028-SS-M-SO	0.17	0.5	7440-39-3	Barium	220	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1028-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.1	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1028-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1028-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.012	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1043-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.012	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1022-SS-M-SO	0.17	0.5	7439-92-1	Lead	9.9	=	0.85	0.25	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628Y-B1045-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.6	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1045-SS-M-SO	0.17	0.5	7440-39-3	Barium	210	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1045-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.066	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1045-SS-M-SO	0.17	0.5	7440-47-3	Chromium	13	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1045-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.01	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1547LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.86	=	0.137	0.275	0.917	0.901	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628Y-B1046-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.5	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1046-SS-M-SO	0.17	0.5	7440-39-3	Barium	220	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1046-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.068	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1046-SS-M-SO	0.17	0.5	7440-47-3	Chromium	12	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1046-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.01	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1021-SS-M-SO	0.17	0.5	7439-92-1	Lead	9.8	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1047-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.5	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1047-SS-M-SO	0.17	0.5	7440-39-3	Barium	200	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1047-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.071	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1047-SS-M-SO	0.17	0.5	7440-47-3	Chromium	13	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1047-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0091	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1059LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.79	=	0.303	0.151	1.01	0.943	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628Y-B1048-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.6	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1048-SS-M-SO	0.17	0.5	7440-39-3	Barium	180	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1048-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.063	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1048-SS-M-SO	0.17	0.5	7440-47-3	Chromium	12	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1048-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0081	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1084-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.3	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1084-SS-M-SO	0.17	0.5	7440-39-3	Barium	290	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1084-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.062	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1084-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1084-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0089	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1049-SS-M-SO	0	0.25	7439-92-1	Lead	9.7	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SO	0.17	0.5	7440-39-3	Barium	340	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.081	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SO	0.17	0.5	7440-47-3	Chromium	8.9	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.01	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1024-SS-M-SO	0.17	0.5	7439-92-1	Lead	9.7	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SODUP	0.17	0.5	7440-38-2	Arsenic	1.3	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SODUP	0.17	0.5	7440-39-3	Barium	330	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SODUP	0.17	0.5	7440-43-9	Cadmium	0.074	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SODUP	0.17	0.5	7440-47-3	Chromium	9.1	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SODUP	0.17	0.5	7439-97-6	Mercury	0.009	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1017-SS-M-SO	0.17	0.5	7439-92-1	Lead	9.7	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1086-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.2	J	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1086-SS-M-SO	0.17	0.5	7440-39-3	Barium	330	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1086-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.086	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1086-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9.7	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1086-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0099	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SO	0	0.25	7439-97-6	Mercury	0.012	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628Y-B1025-SS-M-SO	0.17	0.5	7439-92-1	Lead	9.6	=	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SODUP	0	0.25	7440-38-2	Arsenic	1.4	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SODUP	0	0.25	7440-39-3	Barium	250	=	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SODUP	0	0.25	7440-43-9	Cadmium	0.17	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SODUP	0	0.25	7440-47-3	Chromium	9.5	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SODUP	0	0.25	7439-97-6	Mercury	0.011	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1031LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.55	=	0.31	0.155	1.03	0.971	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628Y-B1002-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.1	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1002-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1002-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.11	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1002-SS-M-SO	0.17	0.5	7440-47-3	Chromium	7.7	J	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1002-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.029	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1032REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.44	=	0.289	0.144	0.963	0.926	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628Y-B1003-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.3	J	2.3	0.61	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1003-SS-M-SO	0.17	0.5	7440-39-3	Barium	78	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1003-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.075	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1003-SS-M-SO	0.17	0.5	7440-47-3	Chromium	5.1	J	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1003-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.02	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1002-SS-M-SO	0.17	0.5	7439-92-1	Lead	9.2	J	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1004-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.1	J	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1004-SS-M-SO	0.17	0.5	7440-39-3	Barium	140	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1004-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.085	J	0.47	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1004-SS-M-SO	0.17	0.5	7440-47-3	Chromium	5.8	J	3.3	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1004-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.032	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1092-SS-C-SO	0	0.5	7439-92-1	Lead	9.1	=	0.96	0.29	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1019-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.6	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1019-SS-M-SO	0.17	0.5	7440-39-3	Barium	140	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1019-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1019-SS-M-SO	0.17	0.5	7440-47-3	Chromium	10	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1019-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.024	J	0.031	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1023-SS-M-SO	0.17	0.5	7439-92-1	Lead	9	J	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1021-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.5	=	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1021-SS-M-SO	0.17	0.5	7440-39-3	Barium	110	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1021-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1021-SS-M-SO	0.17	0.5	7440-47-3	Chromium	8.1	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1021-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.027	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1036-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.9	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1022-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.2	=	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1022-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1022-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1022-SS-M-SO	0.17	0.5	7440-47-3	Chromium	6.8	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1022-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.025	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1029-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.9	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1023-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1023-SS-M-SO	0.17	0.5	7440-39-3	Barium	110	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628Y-B1023-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.13	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1023-SS-M-SO	0.17	0.5	7440-47-3	Chromium	6.9	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1023-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.024	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1009-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.8	J	0.85	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1024-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.3	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1024-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1024-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.11	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1024-SS-M-SO	0.17	0.5	7440-47-3	Chromium	7.1	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1024-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.023	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1030-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.7	=	0.85	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SODUP	0.17	0.5	7440-38-2	Arsenic	1.9	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SODUP	0.17	0.5	7440-39-3	Barium	270	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SODUP	0.17	0.5	7440-43-9	Cadmium	0.073	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SODUP	0.17	0.5	7440-47-3	Chromium	15	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SODUP	0.17	0.5	7439-97-6	Mercury	0.012	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1077-SS-C-SO	0	0.5	7439-92-1	Lead	8.5	J	0.92	0.28	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1040-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	2	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1040-SS-M-SO	0.17	0.5	7440-39-3	Barium	250	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1040-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.064	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1040-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1040-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0088	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1093-SS-M-SO	0	0.25	7439-92-1	Lead	8.5	J	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1041-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.8	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1041-SS-M-SO	0.17	0.5	7440-39-3	Barium	230	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1041-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.071	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1041-SS-M-SO	0.17	0.5	7440-47-3	Chromium	13	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1041-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.012	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1032-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.5	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1042-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	2.1	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1042-SS-M-SO	0.17	0.5	7440-39-3	Barium	220	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1042-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.07	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1042-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1042-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1067-SS-M-SO	0	0.25	7439-92-1	Lead	8.4	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1043-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	2.2	J	2.3	0.61	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1043-SS-M-SO	0.17	0.5	7440-39-3	Barium	230	J	1.8	0.07	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1043-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.056	J	0.46	0.038	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1043-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	=	3.2	0.054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1043-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.2	=	0.83	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1068-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1068-SS-M-SO	0.17	0.5	7440-39-3	Barium	300	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1068-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.051	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1068-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	J	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1068-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.01	J	0.031	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1068-SS-M-SO	0	0.25	7439-92-1	Lead	8.1	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1072-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1072-SS-M-SO	0.17	0.5	7440-39-3	Barium	240	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1072-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.067	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1072-SS-M-SO	0.17	0.5	7440-47-3	Chromium	10	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1072-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0073	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1028-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.1	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628Y-B1074-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1074-SS-M-SO	0.17	0.5	7440-39-3	Barium	280	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1074-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.092	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1074-SS-M-SO	0.17	0.5	7440-47-3	Chromium	10	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1074-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.011	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1045-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.1	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1083-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	0.97	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1083-SS-M-SO	0.17	0.5	7440-39-3	Barium	260	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1083-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.054	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1083-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9.7	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1083-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0077	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1035-SS-M-SO	0.17	0.5	7439-92-1	Lead	8.1	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-M-SO	0	0.25	7440-47-3	Chromium	9.7	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1098-SS-M-SO	0	0.25	7439-97-6	Mercury	0.011	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1001-SS-M-SO	0	0.25	7439-92-1	Lead	8	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.9	=	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-C-SO	0	0.5	7440-39-3	Barium	160	J	2.1	0.081	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.8	0.062	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-C-SO	0	0.5	7439-97-6	Mercury	0.017	J	0.019	0.0063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SODUP	0.17	0.5	7439-92-1	Lead	8	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.8	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-M-SO	0	0.25	7440-39-3	Barium	200	=	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.087	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-M-SO	0	0.25	7440-47-3	Chromium	8.7	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1099-SS-M-SO	0	0.25	7439-97-6	Mercury	0.013	J	0.031	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1041-SS-M-SO	0.17	0.5	7439-92-1	Lead	8	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-C-SO	0	0.5	7440-22-4	Silver	0.31	J	1.6	0.17	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-C-SO	0	0.5	7440-38-2	Arsenic	8.7	=	2.7	0.71	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-C-SO	0	0.5	7440-39-3	Barium	440	J	2.2	0.082	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.37	J	0.54	0.044	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.8	0.063	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1014-SS-M-SO	0.17	0.5	7439-92-1	Lead	8	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SO	0	0.25	7440-38-2	Arsenic	1.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SO	0	0.25	7440-39-3	Barium	260	=	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SO	0	0.25	7440-43-9	Cadmium	0.17	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1100-SS-M-SO	0	0.25	7440-47-3	Chromium	13	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1086-SS-M-SO	0	0.25	7439-92-1	Lead	7.9	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1015-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.2	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1015-SS-M-SO	0.17	0.5	7440-39-3	Barium	110	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1015-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1015-SS-M-SO	0.17	0.5	7440-47-3	Chromium	8.6	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1015-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.034	=	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1004-SS-M-SO	0.17	0.5	7439-92-1	Lead	7.9	J	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1017-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1017-SS-M-SO	0.17	0.5	7440-39-3	Barium	170	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1017-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.11	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1017-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9.9	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1017-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.023	J	0.03	0.005	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1042-SS-M-SO	0.17	0.5	7439-92-1	Lead	7.9	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.8	=	2.4	0.62	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628Y-B1018-SS-M-SO	0.17	0.5	7440-39-3	Barium	130	J	1.9	0.072	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.11	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9.7	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.026	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1076-SS-M-SO	0	0.25	7439-92-1	Lead	7.8	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SODUP	0.17	0.5	7440-38-2	Arsenic	3.9	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SODUP	0.17	0.5	7440-39-3	Barium	150	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SODUP	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SODUP	0.17	0.5	7440-47-3	Chromium	10	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1018-SS-M-SODUP	0.17	0.5	7439-97-6	Mercury	0.027	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1034-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.018	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1090-SS-M-SO	0	0.25	7439-92-1	Lead	7.8	J	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1035-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	5	J	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1035-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1035-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.18	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1035-SS-M-SO	0.17	0.5	7440-47-3	Chromium	6.8	J	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1035-SS-M-SO	0.17	0.5	7782-49-2	Selenium	0.88	J	3	0.85	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1035-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.02	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1060-SS-M-SO	0.17	0.5	7439-92-1	Lead	7.8	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1036-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.9	=	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1036-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1036-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1036-SS-M-SO	0.17	0.5	7440-47-3	Chromium	8	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1036-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.022	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1012-SS-M-SO	0	0.25	7439-92-1	Lead	7.7	=	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1038-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.7	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1038-SS-M-SO	0.17	0.5	7440-39-3	Barium	260	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1038-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.069	J	0.48	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1038-SS-M-SO	0.17	0.5	7440-47-3	Chromium	14	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1038-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.011	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1072-SS-M-SO	0	0.25	7439-92-1	Lead	7.6	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.7	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SO	0.17	0.5	7440-39-3	Barium	270	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.079	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SO	0.17	0.5	7440-47-3	Chromium	13	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.012	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1059-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.062	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1059-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1059-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.012	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1040-SS-M-SO	0.17	0.5	7439-92-1	Lead	7.6	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1060-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.2	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1060-SS-M-SO	0.17	0.5	7440-39-3	Barium	240	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1060-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.042	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1060-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1060-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.012	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1059-SS-M-SO	0.17	0.5	7439-92-1	Lead	7.6	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1061-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1	J	2.4	0.63	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1061-SS-M-SO	0.17	0.5	7440-39-3	Barium	240	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1061-SS-M-SO	0.17	0.5	7440-47-3	Chromium	8.8	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1061-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.008	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	1641K-1540LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	7.53	=	0.142	0.284	0.948	0.926	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628Y-B1066-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.1	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1066-SS-M-SO	0.17	0.5	7440-39-3	Barium	250	=	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1066-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1066-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0087	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1088-SS-M-SO	0	0.25	7439-92-1	Lead	7.5	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1067-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.1	J	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1067-SS-M-SO	0.17	0.5	7440-39-3	Barium	250	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1067-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.072	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1067-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1067-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.012	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SODUP	0.17	0.5	7439-92-1	Lead	7.5	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1011-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.2	J	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1011-SS-M-SO	0.17	0.5	7440-39-3	Barium	120	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1011-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1011-SS-M-SO	0.17	0.5	7440-47-3	Chromium	8.6	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1011-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.035	=	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1094-SS-M-SO	0	0.25	7439-92-1	Lead	7.4	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1012-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4	=	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1012-SS-M-SO	0.17	0.5	7440-39-3	Barium	150	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1012-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.15	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1012-SS-M-SO	0.17	0.5	7440-47-3	Chromium	7.5	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1012-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.029	J	0.03	0.005	-	1	Final RCRA Facility Investigation Parcel 6
6	1641K-1540LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	7.37	=	0.132	0.264	0.88	0.862	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
6	0628Y-B1013-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3	=	2.5	0.66	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SO	0.17	0.5	7440-39-3	Barium	180	J	2	0.076	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.15	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SO	0.17	0.5	7440-47-3	Chromium	7.9	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.019	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1064-SS-M-SO	0	0.25	7439-92-1	Lead	7.3	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SODUP	0.17	0.5	7440-38-2	Arsenic	3.5	=	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SODUP	0.17	0.5	7440-39-3	Barium	90	J	1.9	0.073	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SODUP	0.17	0.5	7440-43-9	Cadmium	0.094	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SODUP	0.17	0.5	7440-47-3	Chromium	5.5	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1013-SS-M-SODUP	0.17	0.5	7439-97-6	Mercury	0.019	J	0.033	0.0055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1084-SS-M-SO	0	0.25	7439-92-1	Lead	7.2	J	0.85	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1014-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.4	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1014-SS-M-SO	0.17	0.5	7440-39-3	Barium	92	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1014-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.092	J	0.49	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1014-SS-M-SO	0.17	0.5	7440-47-3	Chromium	5.7	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1014-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.024	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1096-SS-M-SO	0	0.25	7439-92-1	Lead	7.2	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1029-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	2.1	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1029-SS-M-SO	0.17	0.5	7440-39-3	Barium	220	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1029-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.096	J	0.48	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1029-SS-M-SO	0.17	0.5	7440-47-3	Chromium	10	=	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1029-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.013	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SODUP	0.17	0.5	7439-92-1	Lead	7.2	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1030-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.2	=	2.3	0.62	-	1	Final RCRA Facility Investigation Parcel 6

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628Y-B1030-SS-M-SO	0.17	0.5	7440-39-3	Barium	150	J	1.9	0.071	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1030-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.1	J	0.47	0.039	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1030-SS-M-SO	0.17	0.5	7440-47-3	Chromium	10	=	3.3	0.055	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1030-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.019	J	0.032	0.0053	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1038-SS-M-SO	0.17	0.5	7439-92-1	Lead	7.2	=	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1032-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.3	=	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1032-SS-M-SO	0.17	0.5	7440-39-3	Barium	140	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1032-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.11	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1032-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9.9	=	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1032-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.019	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1089-SS-M-SO	0	0.25	7439-92-1	Lead	7.1	J	0.88	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1033-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	4.3	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1033-SS-M-SO	0.17	0.5	7440-39-3	Barium	130	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1033-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.12	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1033-SS-M-SO	0.17	0.5	7440-47-3	Chromium	8.4	=	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1033-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.029	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1027-SS-M-SO	0.17	0.5	7439-92-1	Lead	7.1	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1034-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	3.1	=	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1034-SS-M-SO	0.17	0.5	7440-39-3	Barium	85	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1034-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.085	J	0.5	0.041	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1034-SS-M-SO	0.17	0.5	7440-47-3	Chromium	5.7	=	3.5	0.058	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1039-SS-M-SO	0.17	0.5	7439-92-1	Lead	7.1	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1051-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.4	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1051-SS-M-SO	0.17	0.5	7440-39-3	Barium	300	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1051-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.067	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1051-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1051-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.011	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1083-SS-M-SO	0	0.25	7439-92-1	Lead	7	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1052-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1	J	2.4	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1052-SS-M-SO	0.17	0.5	7440-39-3	Barium	230	J	2	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1052-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.058	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1052-SS-M-SO	0.17	0.5	7440-47-3	Chromium	9.1	J	3.4	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1052-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.0089	J	0.031	0.0052	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1047-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.9	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1055-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1	J	2.4	0.64	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1055-SS-M-SO	0.17	0.5	7440-39-3	Barium	240	J	1.9	0.074	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1055-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.068	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1055-SS-M-SO	0.17	0.5	7440-47-3	Chromium	10	J	3.4	0.056	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1055-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.012	J	0.032	0.0054	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1048-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.9	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1058-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	0.95	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1058-SS-M-SO	0.17	0.5	7440-39-3	Barium	260	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1058-SS-M-SO	0.17	0.5	7440-43-9	Cadmium	0.081	J	0.49	0.04	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1058-SS-M-SO	0.17	0.5	7440-47-3	Chromium	11	J	3.5	0.057	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1058-SS-M-SO	0.17	0.5	7439-97-6	Mercury	0.011	J	0.03	0.0051	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1067-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.8	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1059-SS-M-SO	0.17	0.5	7440-38-2	Arsenic	1.2	J	2.5	0.65	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1059-SS-M-SO	0.17	0.5	7440-39-3	Barium	250	J	2	0.075	-	1	Final RCRA Facility Investigation Parcel 6



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
6	0628B-1058LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	6.78	=	0.292	0.146	0.973	0.926	Final Permittee-Initiated Interim Measures Report Parcel 6 Area of Concern 28 SWMU 8 Former Building 537 SWMU 20 Feaure 4 (Areas A and B) and Locomotive
6	0628Y-B1068-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.7	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1034-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.6	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1046-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.5	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1085-SS-M-SO	0	0.25	7439-92-1	Lead	6.4	J	0.86	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1051-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.4	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1061-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.3	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1066-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.3	=	0.87	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1003-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.2	J	0.84	0.25	-	1	Final RCRA Facility Investigation Parcel 6
6	0628B-1075-SS-M-SO	0	0.25	7439-92-1	Lead	6.1	J	0.85	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1058-SS-M-SO	0.17	0.5	7439-92-1	Lead	6.1	=	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1074-SS-M-SO	0.17	0.5	7439-92-1	Lead	5.6	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1084-SS-M-SO	0.17	0.5	7439-92-1	Lead	5.5	J	0.9	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1072-SS-M-SO	0.17	0.5	7439-92-1	Lead	5.2	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SO	0.17	0.5	7439-92-1	Lead	5.1	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1055-SS-M-SO	0.17	0.5	7439-92-1	Lead	5.1	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1085-SS-M-SODUP	0.17	0.5	7439-92-1	Lead	5	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1086-SS-M-SO	0.17	0.5	7439-92-1	Lead	5	J	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1083-SS-M-SO	0.17	0.5	7439-92-1	Lead	4.9	J	0.89	0.27	-	1	Final RCRA Facility Investigation Parcel 6
6	0628Y-B1052-SS-M-SO	0.17	0.5	7439-92-1	Lead	4.9	=	0.88	0.26	-	1	Final RCRA Facility Investigation Parcel 6
9	0918A-979SS-C-SO	0	0.5	7439-92-1	Lead	2650	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-981SS-C-SO	0	0.5	7439-92-1	Lead	1110	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-999SS-C-SO	0	0.5	7439-92-1	Lead	1110	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-1000SS-C-SO	0	0.5	7439-92-1	Lead	1070	J	4.8	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-994SS-C-SO	0	0.5	7439-92-1	Lead	860	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-998SS-C-SO	0	0.5	7439-92-1	Lead	703	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-989SS-C-SO	0	0.5	7439-92-1	Lead	645	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-980SS-C-SO	0	0.5	7439-92-1	Lead	577	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-993SS-C-SO	0	0.5	7439-92-1	Lead	536	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-992SS-C-SO	0	0.5	7439-92-1	Lead	476	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-988SS-C-SO	0	0.5	7439-92-1	Lead	440	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-986SS-C-SO	0	0.5	7439-92-1	Lead	429	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-983SS-C-SO	0	0.5	7439-92-1	Lead	427	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-996SS-C-SO	0	0.5	7439-92-1	Lead	413	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-987SS-C-SO	0	0.5	7439-92-1	Lead	322	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-985SS-C-SO	0	0.5	7439-92-1	Lead	321	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-991SS-C-SO	0	0.5	7439-92-1	Lead	307	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-984SS-C-SO	0	0.5	7439-92-1	Lead	300	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-990SS-C-SO	0	0.5	7439-92-1	Lead	242	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-978SS-C-SO	0	0.5	7439-92-1	Lead	165	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-997SS-C-SO	0	0.5	7439-92-1	Lead	148	=	0.98	0.21	-	1	Final Investigation Report Igloo Block A Parcel 9
9	0918A-799SS-C-SO	0	0.5	7439-92-1	Lead	139	=	0.98	0.21	-	1	Final Investigation Report Igloo Block A Parcel 9
9	0918A-995SS-C-SO	0	0.5	7439-92-1	Lead	119	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-982SS-C-SO	0	0.5	7439-92-1	Lead	72.6	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-1000SS-M-SO	0	0.5	7439-92-1	Lead	68.3	=	1	0.22	-	1	Final Investigation Report Igloo Block A Parcel 9
9	0918A-978SS-M-SO	0	0.5	7439-92-1	Lead	26.9	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-992SS-M-SO	0	0.5	7439-92-1	Lead	22.2	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-986SS-M-SO	0	0.5	7439-92-1	Lead	21.7	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
9	0918A-990SS-M-SO	0	0.5	7439-92-1	Lead	21.1	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-991SS-M-SO	0	0.5	7439-92-1	Lead	20.4	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-995SS-M-SO	0	0.5	7439-92-1	Lead	19.5	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-993SS-M-SO	0	0.5	7439-92-1	Lead	19.1	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-996SS-M-SO	0	0.5	7439-92-1	Lead	18.6	=	0.98	0.21	-	1	Final Investigation Report Igloo Block A Parcel 9
9	0918A-985SS-M-SO	0	0.5	7439-92-1	Lead	18	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-982SS-M-SO	0	0.5	7439-92-1	Lead	17.2	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-980SS-M-SO	0	0.5	7439-92-1	Lead	17.2	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-987SS-M-SO	0	0.5	7439-92-1	Lead	17.2	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-994SS-M-SO	0	0.5	7439-92-1	Lead	16.9	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-983SS-M-SO	0	0.5	7439-92-1	Lead	16.8	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A589SS-M-SO	0	0.5	7439-92-1	Lead	16.5	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-984SS-M-SO	0	0.5	7439-92-1	Lead	16.4	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A979SS-M-SO	0	0.5	7439-92-1	Lead	16	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-989SS-M-SO	0	0.5	7439-92-1	Lead	15.4	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-979SS-M-SO	0	0.5	7439-92-1	Lead	15.3	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A985SS-M-SO	0	0.5	7439-92-1	Lead	15.1	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-981SS-M-SO	0	0.5	7439-92-1	Lead	14.7	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-997SS-M-SO	0	0.5	7439-92-1	Lead	14.5	=	0.99	0.21	-	1	Final Investigation Report Igloo Block A Parcel 9
9	0918A-999SS-M-SO	0	0.5	7439-92-1	Lead	13.7	=	0.99	0.21	-	1	Final Investigation Report Igloo Block A Parcel 9
9	0918A-998SS-M-SO	0	0.5	7439-92-1	Lead	12.9	=	0.98	0.21	-	1	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A978SS-M-SO	0	0.5	7439-92-1	Lead	12.7	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A990SS-M-SO	0	0.5	7439-92-1	Lead	12.6	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A982SS-M-SO	0	0.5	7439-92-1	Lead	12.5	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918A-988SS-M-SO	0	0.5	7439-92-1	Lead	11.9	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A983SS-M-SO	0	0.5	7439-92-1	Lead	11.6	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A992SS-M-SO	0	0.5	7439-92-1	Lead	10.5	J	5	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A987SS-M-SO	0	0.5	7439-92-1	Lead	10.4	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A993SS-M-SO	0	0.5	7439-92-1	Lead	9.9	J	4.9	1	-	5	Final Investigation Report Igloo Block A Parcel 9
9	0918Y-A998SS-M-SO	0	0.5	7439-92-1	Lead	9.9	=	0.99	0.21	-	1	Final Investigation Report Igloo Block A Parcel 9
16	1641-K1525R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.018	=	-	0.006	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545L-SS-D-SO	0	0.25	7439-92-1	Lead	4200	J	-	1.5	5.1	5	RCRA Facility Investigation Report Revision 1
16	1641-K1526-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.5	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526-SS-M-SO	0	0.5	7440-39-3	Barium	260	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.16	J	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526-SS-M-SO	0	0.5	7439-97-6	Mercury	0.011	J	-	0.0049	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO	0	0.25	7439-92-1	Lead	960	J	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.9	J	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526L-SS-D-SO	0	0.25	7440-39-3	Barium	250	=	-	0.07	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.21	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526L-SS-D-SO	0	0.25	7440-47-3	Chromium	11	J	-	0.054	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.014	J	-	0.0064	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528R-SS-D-SO	0	0.25	7439-92-1	Lead	960	J	-	0.28	0.93	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526R-SS-D-SO	0	0.25	7440-22-4	Silver	0.14	J	-	0.14	1.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.59	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.068	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526R-SS-D-SO	0	0.25	7440-43-9	Cadmium	1.1	=	-	0.037	0.45	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526R-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.052	3.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.019	J	-	0.0069	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	830	J	-	0.24	0.8	1	RCRA Facility Investigation Report Revision 1

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1527-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.5	J	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527-SS-M-SO	0	0.5	7440-39-3	Barium	280	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.19	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527-SS-M-SO	0	0.5	7439-97-6	Mercury	0.011	J	-	0.0055	0.017	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527R-SS-D-SO	0	0.25	7439-92-1	Lead	810	J	-	0.25	0.82	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.8	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531-SS-M-SO	0	0.5	7440-39-3	Barium	310	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.17	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531-SS-M-SO	0	0.5	7439-97-6	Mercury	0.011	J	-	0.0045	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533L-SS-D-SO	0	0.25	7439-92-1	Lead	780	J	-	0.28	0.95	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531L-SS-D-SO	0	0.25	7440-39-3	Barium	262	=	-	0.0098	0.054	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.082	=	-	0.0065	0.044	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531L-SS-D-SO	0	0.25	7440-47-3	Chromium	7.5	=	-	0.025	0.15	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.011	J	-	0.0037	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525L-SS-D-SO	0	0.25	7439-92-1	Lead	640	J	-	0.27	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.5	=	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO	0	0.25	7440-39-3	Barium	220	J	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.62	=	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO	0	0.25	7440-47-3	Chromium	10	J	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.012	J	-	0.0072	0.022	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546L-SS-D-SO	0	0.25	7439-92-1	Lead	540	=	-	0.29	0.97	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	1.1	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	110	J	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.23	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	5.4	J	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524L-SS-D-SO	0	0.25	7439-92-1	Lead	530	J	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.5	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536-SS-M-SO	0	0.5	7440-39-3	Barium	380	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.15	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0072	J	-	0.0047	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO	0	0.25	7439-92-1	Lead	530	J	-	0.28	0.92	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.2	J	-	0.67	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536L-SS-D-SO	0	0.25	7440-39-3	Barium	410	=	-	0.078	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.23	J	-	0.042	0.51	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536L-SS-D-SO	0	0.25	7440-47-3	Chromium	22	J	-	0.059	3.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.016	J	-	0.0068	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529L-SS-D-SO	0	0.25	7439-92-1	Lead	530	J	-	0.28	0.94	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.6	J	-	0.7	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536R-SS-D-SO	0	0.25	7440-39-3	Barium	490	=	-	0.08	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.3	J	-	0.043	0.53	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536R-SS-D-SO	0	0.25	7440-47-3	Chromium	22	J	-	0.061	3.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.013	J	-	0.0066	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543R-SS-D-SO	0	0.25	7439-92-1	Lead	510	J	-	0.28	0.94	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.6	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537-SS-M-SO	0	0.5	7440-39-3	Barium	280	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.15	J	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537-SS-M-SO	0	0.5	7440-47-3	Chromium	12	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0085	J	-	0.0043	0.013	1	RCRA Facility Investigation Report Revision 1



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1540R-SS-D-SO	0	0.25	7440-39-3	Barium	320	=	-	0.07	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.37	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540R-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.053	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540R-SS-D-SO	0	0.25	7782-49-2	Selenium	0.98	J	-	0.79	2.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.023	=	-	0.0063	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO	0	0.25	7439-92-1	Lead	490	J	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.6	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541-SS-M-SO	0	0.5	7440-39-3	Barium	290	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.19	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541-SS-M-SO	0	0.5	7440-47-3	Chromium	15	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541-SS-M-SO	0	0.5	7439-97-6	Mercury	0.011	J	-	0.0043	0.013	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547L-SS-D-SO	0	0.25	7439-92-1	Lead	490	=	-	0.25	0.84	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541L-SS-D-SO	0	0.25	7440-39-3	Barium	330	J	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.4	J	-	0.039	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541L-SS-D-SO	0	0.25	7440-47-3	Chromium	15	J	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.011	J	-	0.0068	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541L-SS-D-SO	0	0.25	7439-92-1	Lead	480	J	-	0.26	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.59	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541R-SS-D-SO	0	0.25	7440-39-3	Barium	380	=	-	0.068	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.41	J	-	0.037	0.45	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541R-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.052	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0098	J	-	0.0064	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO	0	0.25	7439-92-1	Lead	470	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.9	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542-SS-M-SO	0	0.5	7440-39-3	Barium	300	=	-	0.074	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.2	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542-SS-M-SO	0	0.5	7440-47-3	Chromium	12	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549R-SS-D-SO	0	0.25	7439-92-1	Lead	450	J	-	0.24	0.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.8	=	-	0.71	2.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545R-SS-D-SO	0	0.25	7440-39-3	Barium	370	=	-	0.082	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.38	J	-	0.044	0.54	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545R-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.062	3.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545R-SS-D-SO	0	0.25	7782-49-2	Selenium	1.1	J	-	0.93	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641K-1524LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	432	=	0.147	0.294	0.979	0.943	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1546-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.7	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546-SS-M-SO	0	0.5	7440-39-3	Barium	310	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.21	J	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0088	J	-	0.0053	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544R-SS-D-SO	0	0.25	7439-92-1	Lead	350	J	-	0.28	0.95	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.6	J	-	0.71	2.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546L-SS-D-SO	0	0.25	7440-39-3	Barium	360	=	-	0.082	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.46	J	-	0.044	0.54	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546L-SS-D-SO	0	0.25	7440-47-3	Chromium	14	=	-	0.063	3.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546L-SS-D-SO	0	0.25	7782-49-2	Selenium	1.1	J	-	0.93	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.012	J	-	0.007	0.022	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	350	J	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.6	J	-	0.62	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546R-SS-D-SO	0	0.25	7440-39-3	Barium	470	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1546R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.39	J	-	0.039	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546R-SS-D-SO	0	0.25	7440-47-3	Chromium	14	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.4	J	-	0.68	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO	0	0.25	7440-39-3	Barium	320	=	-	0.078	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.41	J	-	0.042	0.51	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.06	3.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0064	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543L-SS-D-SO	0	0.25	7439-92-1	Lead	340	J	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2.1	J	-	0.6	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	320	J	-	0.069	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.36	J	-	0.037	0.45	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	12	J	-	0.053	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7782-49-2	Selenium	0.97	J	-	0.78	2.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.011	J	-	0.0065	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	330	J	-	0.25	0.83	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.1	J	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525-SS-M-SO	0	0.5	7440-39-3	Barium	340	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.16	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0099	J	-	0.005	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538R-SS-D-SO	0	0.25	7439-92-1	Lead	280	J	-	0.25	0.83	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.1	=	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525L-SS-D-SO	0	0.25	7440-39-3	Barium	310	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.4	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525L-SS-D-SO	0	0.25	7440-47-3	Chromium	15	J	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.0069	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526R-SS-D-SO	0	0.25	7439-92-1	Lead	260	J	-	0.24	0.81	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.6	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.069	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.3	J	-	0.037	0.45	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525R-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.053	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539R-SS-D-SO	0	0.25	7439-92-1	Lead	260	J	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.8	=	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.38	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529R-SS-D-SO	0	0.25	7440-47-3	Chromium	29	J	-	0.057	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.019	J	-	0.0068	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549L-SS-D-SO	0	0.25	7439-92-1	Lead	260	J	-	0.29	0.96	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.9	J	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530-SS-M-SO	0	0.5	7440-39-3	Barium	300	=	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.13	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530-SS-M-SO	0	0.5	7440-47-3	Chromium	10	=	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530-SS-M-SO	0	0.5	7439-97-6	Mercury	0.007	J	-	0.0049	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534L-SS-D-SO	0	0.25	7439-92-1	Lead	250	J	-	0.27	0.91	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.5	J	-	0.62	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530L-SS-D-SO	0	0.25	7440-39-3	Barium	310	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.24	J	-	0.038	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530L-SS-D-SO	0	0.25	7440-47-3	Chromium	17	J	-	0.054	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.014	J	-	0.0063	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641K-1545LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	242	=	0.139	0.278	0.927	0.901	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1530R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.5	J	-	0.58	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530R-SS-D-SO	0	0.25	7440-39-3	Barium	260	=	-	0.067	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.24	J	-	0.036	0.44	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530R-SS-D-SO	0	0.25	7440-47-3	Chromium	19	J	-	0.051	3.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.006	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	240	=	-	0.3	0.99	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2	J	-	0.55	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	350	=	-	0.064	1.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	3.8	=	-	0.034	0.42	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	10	J	-	0.049	2.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0075	J	-	0.0063	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO	0	0.25	7439-92-1	Lead	230	J	-	0.24	0.81	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.7	J	-	0.62	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535-SS-M-SO	0	0.5	7440-39-3	Barium	300	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.17	J	-	0.038	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535-SS-M-SO	0	0.5	7440-47-3	Chromium	12	=	-	0.054	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0097	J	-	0.0052	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529R-SS-D-SO	0	0.25	7439-92-1	Lead	210	J	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.9	=	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535L-SS-D-SO	0	0.25	7440-39-3	Barium	380	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.26	J	-	0.041	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535L-SS-D-SO	0	0.25	7440-47-3	Chromium	16	J	-	0.057	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.018	J	-	0.0062	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	210	J	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.6	=	-	0.65	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535R-SS-D-SO	0	0.25	7440-39-3	Barium	500	=	-	0.074	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.42	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535R-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.02	=	-	0.006	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532R-SS-D-SO	0	0.25	7439-92-1	Lead	210	J	-	0.27	0.91	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.57	=	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539R-SS-D-SO	0	0.25	7440-47-3	Chromium	20	J	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.023	=	-	0.0066	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538L-SS-D-SO	0	0.25	7439-92-1	Lead	200	J	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.8	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540-SS-M-SO	0	0.5	7440-39-3	Barium	310	J	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.19	J	-	0.039	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540-SS-M-SO	0	0.5	7440-47-3	Chromium	14	J	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0071	J	-	0.0044	0.013	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550R-SS-D-SO	0	0.25	7439-92-1	Lead	200	J	-	0.28	0.92	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.7	=	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO	0	0.25	7440-39-3	Barium	310	=	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.58	=	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO	0	0.25	7440-47-3	Chromium	16	J	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.018	=	-	0.006	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535R-SS-D-SO	0	0.25	7439-92-1	Lead	190	J	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2.2	J	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	310	=	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.34	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	13	J	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0069	J	-	0.0065	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542R-SS-D-SO	0	0.25	7439-92-1	Lead	190	J	-	0.25	0.83	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.5	=	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	180	J	-	0.25	0.82	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2	J	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	370	=	-	0.07	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.31	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	14	J	-	0.053	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.013	J	-	0.0057	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535L-SS-D-SO	0	0.25	7439-92-1	Lead	180	J	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.8	J	-	0.7	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544R-SS-D-SO	0	0.25	7440-39-3	Barium	400	=	-	0.08	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.37	J	-	0.043	0.53	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544R-SS-D-SO	0	0.25	7440-47-3	Chromium	22	J	-	0.061	3.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.01	J	-	0.0063	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO	0	0.25	7439-92-1	Lead	180	J	-	0.24	0.79	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545-SS-M-SO	0	0.5	7440-38-2	Arsenic	2	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545-SS-M-SO	0	0.5	7440-39-3	Barium	420	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.21	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545-SS-M-SO	0	0.5	7439-97-6	Mercury	0.01	J	-	0.0045	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548L-SS-D-SO	0	0.25	7439-92-1	Lead	180	J	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545L-SS-D-SO	0	0.25	7440-39-3	Barium	550	J	-	0.43	11	5	RCRA Facility Investigation Report Revision 1
16	1641-K1545L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.39	J	-	0.046	0.57	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545L-SS-D-SO	0	0.25	7440-47-3	Chromium	900	J	-	0.066	4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0078	J	-	0.0076	0.023	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545R-SS-D-SO	0	0.25	7439-92-1	Lead	170	J	-	0.29	0.97	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.5	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524-SS-M-SO	0	0.5	7440-39-3	Barium	280	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.15	J	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0083	J	-	0.005	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	170	J	-	0.23	0.76	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524L-SS-D-SO	0	0.25	7440-39-3	Barium	300	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.39	J	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524L-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0068	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539L-SS-D-SO	0	0.25	7439-92-1	Lead	170	J	-	0.25	0.84	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO	0	0.25	7439-92-1	Lead	170	J	-	0.28	0.92	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.2	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528L-SS-D-SO	0	0.25	7440-39-3	Barium	350	J	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.31	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528L-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0068	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541R-SS-D-SO	0	0.25	7439-92-1	Lead	160	J	-	0.24	0.81	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.8	=	-	0.68	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528R-SS-D-SO	0	0.25	7440-39-3	Barium	370	=	-	0.079	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.53	=	-	0.043	0.52	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528R-SS-D-SO	0	0.25	7440-47-3	Chromium	10	J	-	0.06	3.6	1	RCRA Facility Investigation Report Revision 1

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1528R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.022	=	-	0.0063	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525R-SS-D-SO	0	0.25	7439-92-1	Lead	160	J	-	0.25	0.82	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.8	J	-	0.62	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529-SS-M-SO	0	0.5	7440-39-3	Barium	330	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.16	J	-	0.038	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.054	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0081	J	-	0.0048	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546R-SS-D-SO	0	0.25	7439-92-1	Lead	150	=	-	0.25	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.8	J	-	0.69	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529L-SS-D-SO	0	0.25	7440-39-3	Barium	300	=	-	0.079	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.4	J	-	0.043	0.52	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529L-SS-D-SO	0	0.25	7440-47-3	Chromium	19	J	-	0.06	3.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.014	J	-	0.0064	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.44	J	-	0.043	0.53	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533L-SS-D-SO	0	0.25	7440-47-3	Chromium	17	J	-	0.061	3.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.019	J	-	0.0064	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641K-1525LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	131	=	0.145	0.29	0.968	0.926	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1533R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	=	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533R-SS-D-SO	0	0.25	7440-39-3	Barium	290	=	-	0.07	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.28	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533R-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.053	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.0059	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641K-1525LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	131	=	0.134	0.267	0.891	0.862	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1534-SS-M-SO	0	0.5	7440-38-2	Arsenic	2	J	-	0.65	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534-SS-M-SO	0	0.5	7440-39-3	Barium	350	=	-	0.074	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.18	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534-SS-M-SO	0	0.5	7439-97-6	Mercury	0.011	J	-	0.0051	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530L-SS-D-SO	0	0.25	7439-92-1	Lead	130	J	-	0.25	0.84	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.6	J	-	0.67	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534L-SS-D-SO	0	0.25	7440-39-3	Barium	290	=	-	0.077	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.36	J	-	0.041	0.51	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534L-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.059	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.007	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550L-SS-D-SO	0	0.25	7439-92-1	Lead	130	J	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.5	=	-	0.58	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO	0	0.25	7440-39-3	Barium	460	=	-	0.067	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO	0	0.25	7440-43-9	Cadmium	4.8	=	-	0.036	0.44	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO	0	0.25	7440-47-3	Chromium	11	J	-	0.051	3.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.016	J	-	0.006	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540R-SS-D-SO	0	0.25	7439-92-1	Lead	120	J	-	0.25	0.83	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.5	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538L-SS-D-SO	0	0.25	7440-39-3	Barium	310	J	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.33	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538L-SS-D-SO	0	0.25	7440-47-3	Chromium	21	J	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.0071	0.022	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533R-SS-D-SO	0	0.25	7439-92-1	Lead	120	J	-	0.25	0.83	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.7	J	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.07	1.8	1	RCRA Facility Investigation Report Revision 1

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1538R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.35	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538R-SS-D-SO	0	0.25	7440-47-3	Chromium	20	J	-	0.053	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538R-SS-D-SO	0	0.25	7782-49-2	Selenium	0.8	J	-	0.79	2.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.037	=	-	0.007	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536R-SS-D-SO	0	0.25	7439-92-1	Lead	110	J	-	0.28	0.95	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.1	J	-	0.62	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539-SS-M-SO	0	0.5	7440-39-3	Barium	340	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.2	J	-	0.039	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539-SS-M-SO	0	0.5	7440-47-3	Chromium	17	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539-SS-M-SO	0	0.5	7439-97-6	Mercury	0.01	J	-	0.005	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532L-SS-D-SO	0	0.25	7439-92-1	Lead	110	J	-	0.28	0.93	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539L-SS-D-SO	0	0.25	7440-39-3	Barium	350	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.38	J	-	0.038	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539L-SS-D-SO	0	0.25	7440-47-3	Chromium	20	J	-	0.054	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0061	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641K-1543REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	104	=	0.143	0.285	0.951	0.926	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1543L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.1	J	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543L-SS-D-SO	0	0.25	7440-39-3	Barium	480	J	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.38	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543L-SS-D-SO	0	0.25	7440-47-3	Chromium	20	J	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0098	J	-	0.0061	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548R-SS-D-SO	0	0.25	7439-92-1	Lead	100	J	-	0.28	0.95	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543R-SS-D-SO	0	0.25	7440-38-2	Arsenic	6.1	=	-	0.69	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543R-SS-D-SO	0	0.25	7440-39-3	Barium	400	=	-	0.079	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.5	J	-	0.043	0.52	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543R-SS-D-SO	0	0.25	7440-47-3	Chromium	30	J	-	0.061	3.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543R-SS-D-SO	0	0.25	7782-49-2	Selenium	1.1	J	-	0.9	3.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	87	J	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.2	J	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544-SS-M-SO	0	0.5	7440-39-3	Barium	360	=	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.18	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544-SS-M-SO	0	0.5	7440-47-3	Chromium	15	=	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544-SS-M-SO	0	0.5	7439-97-6	Mercury	0.011	J	-	0.0054	0.017	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528L-SS-D-SO	0	0.25	7439-92-1	Lead	74	J	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.69	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO	0	0.25	7440-39-3	Barium	360	=	-	0.079	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.26	J	-	0.043	0.52	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO	0	0.25	7440-47-3	Chromium	18	J	-	0.06	3.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.013	J	-	0.0062	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1544L-SS-D-SO	0	0.25	7439-92-1	Lead	73	J	-	0.28	0.93	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.4	=	-	0.67	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO	0	0.25	7440-39-3	Barium	260	=	-	0.078	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.54	=	-	0.042	0.51	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO	0	0.25	7440-47-3	Chromium	16	J	-	0.059	3.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0061	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530R-SS-D-SO	0	0.25	7439-92-1	Lead	66	J	-	0.24	0.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2.8	=	-	0.59	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	270	=	-	0.068	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.54	=	-	0.037	0.45	1	RCRA Facility Investigation Report Revision 1



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	15	J	-	0.052	3.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0095	J	-	0.0057	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531L-SS-D-SO	0	0.25	7439-92-1	Lead	59.1	=	-	0.044	0.27	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527R-SS-D-SO	0	0.25	7440-38-2	Arsenic	4	=	-	0.6	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.069	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.64	=	-	0.037	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527R-SS-D-SO	0	0.25	7440-47-3	Chromium	15	J	-	0.053	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.016	J	-	0.006	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526L-SS-D-SO	0	0.25	7439-92-1	Lead	58	J	-	0.25	0.83	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528-SS-M-SO	0	0.5	7440-38-2	Arsenic	2	J	-	0.62	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528-SS-M-SO	0	0.5	7440-39-3	Barium	340	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.18	J	-	0.038	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528-SS-M-SO	0	0.5	7440-47-3	Chromium	12	=	-	0.054	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528-SS-M-SO	0	0.5	7439-97-6	Mercury	0.01	J	-	0.0055	0.017	1	RCRA Facility Investigation Report Revision 1
16	1641K-1528REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	52	=	0.144	0.287	0.958	0.935	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1532-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.7	J	-	0.6	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532-SS-M-SO	0	0.5	7440-39-3	Barium	310	=	-	0.07	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.15	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.053	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0094	J	-	0.0046	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542-SS-M-SO	0	0.5	7439-92-1	Lead	50	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.7	J	-	0.68	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532L-SS-D-SO	0	0.25	7440-39-3	Barium	330	=	-	0.079	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.23	J	-	0.042	0.52	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532L-SS-D-SO	0	0.25	7440-47-3	Chromium	18	J	-	0.06	3.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.013	J	-	0.007	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537R-SS-D-SO	0	0.25	7439-92-1	Lead	45	J	-	0.24	0.79	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.67	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532R-SS-D-SO	0	0.25	7440-39-3	Barium	260	=	-	0.077	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.43	J	-	0.042	0.51	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532R-SS-D-SO	0	0.25	7440-47-3	Chromium	17	J	-	0.059	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1532R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0069	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO	0	0.25	7439-92-1	Lead	41	J	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.8	J	-	0.62	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533-SS-M-SO	0	0.5	7440-39-3	Barium	340	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.17	J	-	0.039	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533-SS-M-SO	0	0.5	7440-47-3	Chromium	15	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0096	J	-	0.0049	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536L-SS-D-SO	0	0.25	7439-92-1	Lead	37	J	-	0.28	0.92	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.6	=	-	0.69	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533L-SS-D-SO	0	0.25	7440-39-3	Barium	270	=	-	0.08	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	37	J	-	0.24	0.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.1	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO	0	0.25	7440-39-3	Barium	220	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.19	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.013	J	-	0.0059	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1534-SS-M-SO	0	0.5	7439-92-1	Lead	33	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	1.4	J	-	0.59	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	260	=	-	0.068	1.8	1	RCRA Facility Investigation Report Revision 1

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.16	J	-	0.037	0.45	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	9.5	J	-	0.052	3.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1530-SS-M-SO	0	0.5	7439-92-1	Lead	29	=	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.3	J	-	0.58	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537R-SS-D-SO	0	0.25	7440-39-3	Barium	310	=	-	0.067	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.28	J	-	0.036	0.44	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537R-SS-D-SO	0	0.25	7440-47-3	Chromium	17	J	-	0.051	3.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0061	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1527-SS-M-SO	0	0.5	7439-92-1	Lead	27	=	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.7	J	-	0.62	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538-SS-M-SO	0	0.5	7440-39-3	Barium	260	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.18	J	-	0.039	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538-SS-M-SO	0	0.5	7440-47-3	Chromium	17	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538-SS-M-SO	0	0.5	7439-97-6	Mercury	0.012	J	-	0.0045	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0096	J	-	0.0049	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641K-1547REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	25.4	=	0.133	0.266	0.887	0.87	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1542L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.2	=	-	0.6	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO	0	0.25	7440-39-3	Barium	250	=	-	0.069	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.49	=	-	0.037	0.45	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.052	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.007	J	-	0.0064	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1526-SS-M-SO	0	0.5	7439-92-1	Lead	23	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	3.2	=	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	240	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.52	=	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	10	J	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0083	J	-	0.0058	0.018	1	RCRA Facility Investigation Report Revision 1
16	1641-K1539-SS-M-SO	0	0.5	7439-92-1	Lead	23	=	-	0.25	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.7	J	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542R-SS-D-SO	0	0.25	7440-39-3	Barium	140	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.31	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-K1542R-SS-D-SO	0	0.25	7440-47-3	Chromium	8.1	J	-	0.054	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1535-SS-M-SO	0	0.5	7439-92-1	Lead	22	=	-	0.25	0.84	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543-SS-M-SO	0	0.5	7440-38-2	Arsenic	2	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543-SS-M-SO	0	0.5	7440-39-3	Barium	510	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.15	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543-SS-M-SO	0	0.5	7440-47-3	Chromium	15	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0075	J	-	0.0049	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550-SS-M-SO	0	0.5	7439-92-1	Lead	21	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.7	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547-SS-M-SO	0	0.5	7440-39-3	Barium	380	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.18	J	-	0.039	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0083	J	-	0.0045	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-K1525-SS-M-SO	0	0.5	7439-92-1	Lead	20	=	-	0.27	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.1	J	-	0.62	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547L-SS-D-SO	0	0.25	7440-39-3	Barium	360	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.57	J	-	0.038	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547L-SS-D-SO	0	0.25	7440-47-3	Chromium	11	=	-	0.054	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0069	J	-	0.0062	0.019	1	RCRA Facility Investigation Report Revision 1

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1532-SS-M-SO	0	0.5	7439-92-1	Lead	20	=	-	0.25	0.82	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.65	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO	0	0.25	7440-39-3	Barium	410	=	-	0.074	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.61	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO	0	0.25	7440-47-3	Chromium	17	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.012	J	-	0.0067	0.021	1	RCRA Facility Investigation Report Revision 1
16	1641K-1524REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.9	=	0.137	0.273	0.91	0.87	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2	J	-	0.73	2.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	420	=	-	0.084	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.48	J	-	0.045	0.55	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	20	=	-	0.064	3.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0088	J	-	0.0063	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.01	J	-	0.0061	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641K-1527REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	18.9	=	0.145	0.291	0.968	0.952	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-Y1524-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1524-SS-M-SO	0	0.5	7440-39-3	Barium	250	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1524-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1524-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1524-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0055	J	-	0.005	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1524-SS-M-SO	0	0.5	7439-92-1	Lead	18	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO	0	0.5	7440-39-3	Barium	230	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.49	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO	0	0.5	7440-47-3	Chromium	12	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0061	J	-	0.0052	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1531-SS-M-SO	0	0.5	7439-92-1	Lead	17	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO-DUP	0	0.5	7440-38-2	Arsenic	2.5	J	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO-DUP	0	0.5	7440-39-3	Barium	230	=	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO-DUP	0	0.5	7440-43-9	Cadmium	0.5	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO-DUP	0	0.5	7440-47-3	Chromium	13	=	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO-DUP	0	0.5	7439-97-6	Mercury	0.0064	J	-	0.005	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1540-SS-M-SO	0	0.5	7439-92-1	Lead	17	=	-	0.26	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1526-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1526-SS-M-SO	0	0.5	7440-39-3	Barium	270	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1526-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.49	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1526-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1528-SS-M-SO	0	0.5	7439-92-1	Lead	17	=	-	0.25	0.84	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO-DUP	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO-DUP	0	0.5	7440-39-3	Barium	270	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO-DUP	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO-DUP	0	0.5	7440-47-3	Chromium	19	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO-DUP	0	0.5	7439-97-6	Mercury	0.009	J	-	0.0053	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1533-SS-M-SO	0	0.5	7439-92-1	Lead	16	=	-	0.25	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1543-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.4	J	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1543-SS-M-SO	0	0.5	7440-39-3	Barium	450	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1543-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.12	J	-	0.038	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1543-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.054	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1543-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0056	J	-	0.0052	0.016	1	RCRA Facility Investigation Report Revision 1



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641K-1549REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	15.2	=	0.138	0.275	0.918	0.901	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-Y1544-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.7	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1544-SS-M-SO	0	0.5	7440-39-3	Barium	360	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1544-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.15	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1544-SS-M-SO	0	0.5	7440-47-3	Chromium	17	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1544-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0061	J	-	0.0051	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1537-SS-M-SO	0	0.5	7439-92-1	Lead	15	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1547-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.8	=	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1547-SS-M-SO	0	0.5	7440-39-3	Barium	350	=	-	0.07	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1547-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.2	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1547-SS-M-SO	0	0.5	7440-47-3	Chromium	11	=	-	0.054	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1547-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0091	J	-	0.0052	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1541-SS-M-SO	0	0.5	7439-92-1	Lead	15	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1549-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.9	J	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549L-SS-D-SO	0	0.25	7440-39-3	Barium	370	=	-	0.081	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.3	J	-	0.044	0.53	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549L-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.062	3.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0095	J	-	0.0063	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1546-SS-M-SO	0	0.5	7439-92-1	Lead	15	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.7	J	-	0.59	2.2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549R-SS-D-SO	0	0.25	7440-39-3	Barium	430	=	-	0.068	1.8	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.3	J	-	0.036	0.44	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549R-SS-D-SO	0	0.25	7440-47-3	Chromium	19	J	-	0.052	3.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0064	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-K1529-SS-M-SO	0	0.5	7439-92-1	Lead	15	=	-	0.25	0.84	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.9	J	-	0.65	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550-SS-M-SO	0	0.5	7440-39-3	Barium	480	=	-	0.074	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.21	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0062	J	-	0.0052	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1538-SS-M-SO	0	0.5	7439-92-1	Lead	15	=	-	0.25	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550L-SS-D-SO	0	0.25	7440-39-3	Barium	330	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.39	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550L-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.057	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0079	J	-	0.0062	0.019	1	RCRA Facility Investigation Report Revision 1
16	1641-K1536-SS-M-SO	0	0.5	7439-92-1	Lead	14	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.68	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550R-SS-D-SO	0	0.25	7440-39-3	Barium	300	=	-	0.078	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.58	=	-	0.042	0.51	1	RCRA Facility Investigation Report Revision 1
16	1641-K1550R-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.059	3.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1545-SS-M-SO	0	0.5	7439-92-1	Lead	14	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1538-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.5	J	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1538-SS-M-SO	0	0.5	7440-39-3	Barium	260	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1538-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.49	J	-	0.041	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1538-SS-M-SO	0	0.5	7440-47-3	Chromium	21	=	-	0.057	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1538-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0083	J	-	0.0053	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549-SS-M-SO	0	0.5	7439-92-1	Lead	14	=	-	0.25	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1539-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1539-SS-M-SO	0	0.5	7440-39-3	Barium	270	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-Y1539-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1539-SS-M-SO	0	0.5	7440-47-3	Chromium	24	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641K-1527LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.8	=	0.137	0.275	0.916	0.901	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-Y1540-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1540-SS-M-SO	0	0.5	7440-39-3	Barium	280	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1540-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1540-SS-M-SO	0	0.5	7440-47-3	Chromium	17	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1540-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0095	J	-	0.0051	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641K-1533LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.6	=	0.136	0.273	0.91	0.885	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-Y1541-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO	0	0.5	7440-39-3	Barium	240	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO	0	0.5	7440-47-3	Chromium	18	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO	0	0.5	7439-97-6	Mercury	0.01	J	-	0.0054	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641K-1531REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.5	=	0.145	0.29	0.967	0.952	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1548-SS-M-SO	0	0.5	7439-92-1	Lead	13	=	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641K-1541LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13	=	0.15	0.299	0.997	0.971	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641K-1546LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.8	=	0.145	0.291	0.968	0.952	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641K-1529LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.4	=	0.144	0.287	0.957	0.935	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-K1544-SS-M-SO	0	0.5	7439-92-1	Lead	12	=	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1526-SS-M-SO	0	0.5	7439-92-1	Lead	11	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548-SS-M-SO	0	0.5	7440-38-2	Arsenic	2	J	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548-SS-M-SO	0	0.5	7440-39-3	Barium	400	=	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.2	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548-SS-M-SO	0	0.5	7439-97-6	Mercury	0.011	J	-	0.0046	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO-DUP	0	0.5	7439-92-1	Lead	11	=	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548L-SS-D-SO	0	0.25	7440-39-3	Barium	350	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.34	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548L-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.024	=	-	0.0066	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1538-SS-M-SO	0	0.5	7439-92-1	Lead	11	=	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.1	J	-	0.69	2.6	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548R-SS-D-SO	0	0.25	7440-39-3	Barium	360	=	-	0.08	2.1	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.32	J	-	0.043	0.53	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548R-SS-D-SO	0	0.25	7440-47-3	Chromium	16	J	-	0.061	3.7	1	RCRA Facility Investigation Report Revision 1
16	1641-K1548R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.008	J	-	0.0067	0.02	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1537-SS-M-SO	0	0.5	7439-92-1	Lead	11	J	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549-SS-M-SO	0	0.5	7440-38-2	Arsenic	1.6	J	-	0.62	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549-SS-M-SO	0	0.5	7440-39-3	Barium	390	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.21	J	-	0.038	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549-SS-M-SO	0	0.5	7440-47-3	Chromium	19	=	-	0.054	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-K1549-SS-M-SO	0	0.5	7439-97-6	Mercury	0.014	=	-	0.0045	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1530-SS-M-SO	0	0.5	7439-92-1	Lead	11	=	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-K1549L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.71	2.7	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1531-SS-M-SO	0	0.5	7439-92-1	Lead	11	J	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1533-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.62	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1533-SS-M-SO	0	0.5	7440-39-3	Barium	270	=	-	0.072	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1533-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.47	J	-	0.039	0.47	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1533-SS-M-SO	0	0.5	7440-47-3	Chromium	16	=	-	0.055	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1532-SS-M-SO	0	0.5	7439-92-1	Lead	11	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1534-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1534-SS-M-SO	0	0.5	7440-39-3	Barium	270	=	-	0.074	2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1534-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.49	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1534-SS-M-SO	0	0.5	7440-47-3	Chromium	16	=	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1534-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0056	J	-	0.0053	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO	0	0.5	7439-92-1	Lead	11	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1536-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.5	J	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1536-SS-M-SO	0	0.5	7440-39-3	Barium	680	J	-	0.38	9.9	5	RCRA Facility Investigation Report Revision 1
16	1641-Y1536-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.5	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1536-SS-M-SO	0	0.5	7440-47-3	Chromium	15	=	-	0.057	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO-DUP	0	0.5	7439-92-1	Lead	11	=	-	0.25	0.83	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1537-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.5	J	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1537-SS-M-SO	0	0.5	7440-39-3	Barium	270	J	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1537-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.5	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1537-SS-M-SO	0	0.5	7440-47-3	Chromium	21	J	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641K-1524LEC-1.0-1.5D-SO	1	1.5	7439-92-1	Lead	10.8	J	0.162	0.324	1.08	0.971	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-YK4-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-YK4-SS-M-SO	0	0.5	7440-39-3	Barium	240	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-YK4-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-YK4-SS-M-SO	0	0.5	7440-47-3	Chromium	12	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-K1543-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-YK5-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-YK5-SS-M-SO	0	0.5	7440-39-3	Barium	250	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-YK5-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.49	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-YK5-SS-M-SO	0	0.5	7440-47-3	Chromium	11	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-YK5-SS-M-SO	0	0.5	7439-97-6	Mercury	0.006	J	-	0.005	0.015	1	RCRA Facility Investigation Report Revision 1
16	1641-K1547-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1524-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO-DUP	0	0.5	7439-92-1	Lead	10	=	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1539-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1541-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1533-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.25	0.85	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1534-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-YK4-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1527-SS-M-SO	0	0.5	7439-92-1	Lead	10	J	-	0.27	0.9	1	RCRA Facility Investigation Report Revision 1
16	1641-YK2-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-YK3-SS-M-SO	0	0.5	7439-92-1	Lead	10	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1525-SS-M-SO	0	0.5	7439-92-1	Lead	9.9	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641K-1547LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.86	=	0.137	0.275	0.917	0.901	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-YK5-SS-M-SO	0	0.5	7439-92-1	Lead	9.8	=	-	0.26	0.88	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1544-SS-M-SO	0	0.5	7439-92-1	Lead	9	=	-	0.26	0.87	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1527-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.5	J	-	0.66	2.5	1	RCRA Facility Investigation Report Revision 1



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24**  
**FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
16	1641-Y1527-SS-M-SO	0	0.5	7440-39-3	Barium	260	J	-	0.076	2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1527-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.5	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1527-SS-M-SO	0	0.5	7440-47-3	Chromium	15	J	-	0.058	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1527-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0054	J	-	0.0051	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1540-SS-M-SO	0	0.5	7439-92-1	Lead	8.2	=	-	0.26	0.86	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1530-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.5	J	-	0.65	2.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1530-SS-M-SO	0	0.5	7440-39-3	Barium	300	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1530-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.49	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1530-SS-M-SO	0	0.5	7440-47-3	Chromium	26	=	-	0.057	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1530-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0084	J	-	0.0054	0.017	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1543-SS-M-SO	0	0.5	7439-92-1	Lead	8	=	-	0.25	0.84	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1531-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1531-SS-M-SO	0	0.5	7440-39-3	Barium	260	J	-	0.074	2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1531-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.49	J	-	0.04	0.49	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1531-SS-M-SO	0	0.5	7440-47-3	Chromium	19	J	-	0.057	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1531-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0086	J	-	0.0055	0.017	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1536-SS-M-SO	0	0.5	7439-92-1	Lead	7.9	=	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1532-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1532-SS-M-SO	0	0.5	7440-39-3	Barium	260	=	-	0.074	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1532-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1532-SS-M-SO	0	0.5	7440-47-3	Chromium	15	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1549-SS-M-SO	0	0.5	7440-39-3	Barium	240	=	-	0.075	2	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1549-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.094	J	-	0.041	0.5	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1549-SS-M-SO	0	0.5	7440-47-3	Chromium	8	=	-	0.057	3.5	1	RCRA Facility Investigation Report Revision 1
16	1641K-1540LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	7.53	=	0.142	0.284	0.948	0.926	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-YK1-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO	0	0.5	7440-39-3	Barium	270	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO	0	0.5	7440-47-3	Chromium	15	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0055	J	-	0.005	0.016	1	RCRA Facility Investigation Report Revision 1
16	1641K-1540LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	7.37	=	0.132	0.264	0.88	0.862	Final Permittee- Initiated Interim Measures Report Parcel 16 Revision 1.0
16	1641-YK1-SS-M-SO-DUP	0	0.5	7440-38-2	Arsenic	2.3	J	-	0.61	2.3	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO-DUP	0	0.5	7440-39-3	Barium	260	=	-	0.071	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO-DUP	0	0.5	7440-43-9	Cadmium	0.46	J	-	0.038	0.46	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO-DUP	0	0.5	7440-47-3	Chromium	15	=	-	0.054	3.2	1	RCRA Facility Investigation Report Revision 1
16	1641-YK1-SS-M-SO-DUP	0	0.5	7439-97-6	Mercury	0.0062	J	-	0.0045	0.014	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1547-SS-M-SO	0	0.5	7439-92-1	Lead	6.7	=	-	0.25	0.83	1	RCRA Facility Investigation Report Revision 1
16	1641-YK2-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.63	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-YK2-SS-M-SO	0	0.5	7440-39-3	Barium	240	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-YK2-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.039	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-YK2-SS-M-SO	0	0.5	7440-47-3	Chromium	14	=	-	0.056	3.3	1	RCRA Facility Investigation Report Revision 1
16	1641-Y1549-SS-M-SO	0	0.5	7439-92-1	Lead	6.2	=	-	0.27	0.89	1	RCRA Facility Investigation Report Revision 1
16	1641-YK3-SS-M-SO	0	0.5	7440-38-2	Arsenic	2.4	J	-	0.64	2.4	1	RCRA Facility Investigation Report Revision 1
16	1641-YK3-SS-M-SO	0	0.5	7440-39-3	Barium	290	=	-	0.073	1.9	1	RCRA Facility Investigation Report Revision 1
16	1641-YK3-SS-M-SO	0	0.5	7440-43-9	Cadmium	0.48	J	-	0.04	0.48	1	RCRA Facility Investigation Report Revision 1
16	1641-YK3-SS-M-SO	0	0.5	7440-47-3	Chromium	13	=	-	0.056	3.4	1	RCRA Facility Investigation Report Revision 1
16	1641-YK3-SS-M-SO	0	0.5	7439-97-6	Mercury	0.0057	J	-	0.0046	0.014	1	RCRA Facility Investigation Report Revision 1
24	2418A-906SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	8.53	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRF-SO	0	0.25	7439-92-1	Lead	11540	=	-	-	-	1	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A941-EFR-D-SO	1	1.5	7439-92-1	Lead	6350	=	44.4	22.2	88.7	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-906SS-R-XRF-SO	0	0.25	7440-39-3	Barium	497	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-906SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	12.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-935SS-L-XRF-SO	0	0.25	7439-92-1	Lead	5290	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	3900	J	-	0.28	0.94	1	Release Assessment Report Parcel 24
24	2418A-907SS-L-XRF-SO	0	0.25	7440-39-3	Barium	450	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-907SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	19.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-907SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A918-EFR-D-SO	1	1.5	7439-92-1	Lead	2870	=	26	13	51.9	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-907SS-R-XRF-SO	0	0.25	7439-92-1	Lead	2691	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-907SS-R-XRF-SO	0	0.25	7440-39-3	Barium	160	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-907SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	17.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A943-EFR-D-SO	1	1.5	7439-92-1	Lead	2540	=	21.6	10.8	43.1	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-947SS-R-XRF-SO	0	0.25	7439-92-1	Lead	2404	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-908SS-L-XRF-SO	0	0.25	7440-39-3	Barium	499	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-908SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	19.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-914SS-R-XRF-SO	0	0.25	7440-39-3	Barium	235	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-955SS-L-XRF-SO	0	0.25	7439-92-1	Lead	2327	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-914SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.64	1.5	1	Release Assessment Report Parcel 24
24	2418A-914SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	240	=	-	0.074	1.9	1	Release Assessment Report Parcel 24
24	2418A-914SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.17	J	-	0.04	0.48	1	Release Assessment Report Parcel 24
24	2418A-914SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	11	=	-	0.056	1.9	1	Release Assessment Report Parcel 24
24	2418A-914SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.0081	J	-	0.0055	0.017	1	Release Assessment Report Parcel 24
24	2418A-924SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	2300	J	-	0.28	0.94	1	Release Assessment Report Parcel 24
24	2418A-946SS-R-XRF-SO	0	0.25	7439-92-1	Lead	2142	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-915SS-L-XRF-SO	0	0.25	7440-39-3	Barium	328	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-915SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	9.03	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-933SS-C-SO	0	0.5	7439-92-1	Lead	1790	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A969-EFL-D-SO	1	1.5	7439-92-1	Lead	1630	=	22.1	11.1	44.3	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-915SS-R-XRF-SO	0	0.25	7440-39-3	Barium	276	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-915SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	13.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A944-EFR-D-SO	1	1.5	7439-92-1	Lead	1590	=	21.4	10.7	42.8	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-909SS-L-XRF-SO	0	0.25	7439-92-1	Lead	1582	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-916SS-L-XRF-SO	0	0.25	7440-39-3	Barium	260	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-916SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	11.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-916SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A926-EFL-D-SO	1	1.5	7439-92-1	Lead	1490	=	24.4	12.2	48.9	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A951-EFR-D-SO	1	1.5	7439-92-1	Lead	1470	=	22.1	11.1	44.3	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-923SS-L-XRF-SO	0	0.25	7440-39-3	Barium	444	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-923SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	18.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-946SS-C-SO	0	0.5	7439-92-1	Lead	1460	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	1400	J	-	0.26	0.88	1	Release Assessment Report Parcel 24
24	2418A-923SS-R-XRF-SO	0	0.25	7440-39-3	Barium	549	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-923SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	13	=	-	-	-	1	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-923SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	11	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-929SS-C-SO	0	0.5	7439-92-1	Lead	1390	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-939SS-C-SO	0	0.5	7439-92-1	Lead	1340	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-924SS-L-XRF-SO	0	0.25	7440-39-3	Barium	745	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-924SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-903SS-L-XRF-SO	0	0.25	7439-92-1	Lead	1333	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A955-EFR-D-SO	1	1.5	7439-92-1	Lead	1100	=	21.3	10.6	42.5	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-924SS-R-XRF-SO	0	0.25	7440-39-3	Barium	128	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-924SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	19.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-918SS-C-SO	0	0.5	7439-92-1	Lead	1090	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-924SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	3.2	=	-	0.69	1.6	1	Release Assessment Report Parcel 24
24	2418A-924SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	180	=	-	0.079	2.1	1	Release Assessment Report Parcel 24
24	2418A-924SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.46	J	-	0.043	0.52	1	Release Assessment Report Parcel 24
24	2418A-924SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	11	=	-	0.06	2.1	1	Release Assessment Report Parcel 24
24	2418A-924SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.024	=	-	0.0053	0.016	1	Release Assessment Report Parcel 24
24	2418A-941SS-R-XRF-SO	0	0.25	7439-92-1	Lead	1021	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-952SS-C-SO	0	0.5	7439-92-1	Lead	1020	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A929-EFL-D-SO	1	1.5	7439-92-1	Lead	1010	=	21.2	10.6	42.5	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-915SS-C-SO	0	0.5	7439-92-1	Lead	1000	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-950SS-R-XRF-SO	0	0.25	7439-92-1	Lead	995	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-969SS-C-SO	0	0.5	7439-92-1	Lead	977	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-932SS-L-XRF-SO	0	0.25	7440-39-3	Barium	462	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-932SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	16	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-932SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	9.85	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-909SS-C-SO	0	0.5	7439-92-1	Lead	954	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-916SS-C-SO	0	0.5	7439-92-1	Lead	948	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-932SS-R-XRF-SO	0	0.25	7440-39-3	Barium	518	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-932SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	18.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A920-EFL-D-SO	1	1.5	7439-92-1	Lead	829	=	21.9	10.9	43.7	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-977SS-L-XRF-SO	0	0.25	7439-92-1	Lead	828	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-933SS-L-XRF-SO	0	0.25	7440-39-3	Barium	287	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-933SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-C-SO	0	0.5	7439-92-1	Lead	824	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-933SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	1.6	=	-	0.67	1.5	1	Release Assessment Report Parcel 24
24	2418A-933SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	150	=	-	0.078	2	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRF-SO	0	0.25	7440-39-3	Barium	448	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	21.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	14	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-955SS-R-XRF-SO	0	0.25	7439-92-1	Lead	784	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	3.6	=	-	0.69	1.6	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	180	=	-	0.08	2.1	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	10	=	-	0.061	2.1	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.022	=	-	0.0059	0.018	1	Release Assessment Report Parcel 24
24	2418A-903SS-C-SO	0	0.5	7439-92-1	Lead	775	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-943SS-L-XRF-SO	0	0.25	7439-92-1	Lead	764	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-939SS-L-XRF-SO	0	0.25	7440-39-3	Barium	267	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-939SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	15.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-925SS-C-SO	0	0.5	7439-92-1	Lead	762	=	5	1	-	5	Release Assessment Report Parcel 24



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FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-439SS-C-SO	0	0.5	7439-92-1	Lead	746	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-939SS-R-XRF-SO	0	0.25	7440-39-3	Barium	355	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-939SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	17.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-941SS-C-SO	0	0.5	7439-92-1	Lead	741	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-964SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	740	J	-	0.26	0.86	1	Release Assessment Report Parcel 24
24	2418A-971SS-C-SO	0	0.5	7439-92-1	Lead	720	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-943SS-C-SO	0	0.5	7439-92-1	Lead	669	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	660	J	-	0.27	0.9	1	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRF-SO	0	0.25	7440-39-3	Barium	309	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	22.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-299SS-C-SO	0	0.5	7439-92-1	Lead	657	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	4.1	=	-	0.7	1.6	1	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	190	=	-	0.08	2.1	1	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.41	J	-	0.043	0.53	1	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	14	=	-	0.061	2.1	1	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.028	=	-	0.0053	0.016	1	Release Assessment Report Parcel 24
24	24A922-EFR-D-SO	1	1.5	7439-92-1	Lead	644	=	21.6	10.8	43.2	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-914SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	640	=	-	0.26	0.87	1	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRF-SO	0	0.25	7440-38-2	Arsenic	45.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRF-SO	0	0.25	7440-39-3	Barium	630	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	11.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-922SS-C-SO	0	0.5	7439-92-1	Lead	626	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	3.1	=	-	0.65	1.5	1	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	200	=	-	0.075	2	1	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.17	J	-	0.041	0.5	1	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	11	=	-	0.057	2	1	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.025	=	-	0.0064	0.02	1	Release Assessment Report Parcel 24
24	2418A-917SS-C-SO	0	0.5	7439-92-1	Lead	609	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-977SS-C-SO	0	0.5	7439-92-1	Lead	606	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-906SS-L-XRF-SO	0	0.25	7440-39-3	Barium	421	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-906SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	15.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-912SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.18	J	-	0.046	0.57	1	Release Assessment Report Parcel 24
24	2418A-912SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	9.8	=	-	0.066	2.3	1	Release Assessment Report Parcel 24
24	2418A-912SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.02	=	-	0.0056	0.017	1	Release Assessment Report Parcel 24
24	2418A-948SS-C-SO	0	0.5	7439-92-1	Lead	603	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A955-EFL-D-SO2	1.5	2	7439-92-1	Lead	591	=	0.23	0.12	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-913SS-L-XRF-SO	0	0.25	7440-39-3	Barium	429	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-913SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	15.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-913SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-923SS-C-SO	0	0.5	7439-92-1	Lead	582	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-962SS-L-XRF-SO	0	0.25	7439-92-1	Lead	523	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-913SS-R-XRF-SO	0	0.25	7440-39-3	Barium	438	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-913SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	19.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-922SS-R-XRF-SO	0	0.25	7439-92-1	Lead	514	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-927SS-L-XRF-SO	0	0.25	7439-92-1	Lead	512	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-914SS-L-XRF-SO	0	0.25	7440-39-3	Barium	319	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-914SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10588	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-935SS-C-SO	0	0.5	7439-92-1	Lead	506	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-914SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	2.9	=	-	0.64	1.5	1	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-914SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	210	=	-	0.074	2	1	Release Assessment Report Parcel 24
24	2418A-914SS-L-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.14	J	-	0.04	0.49	1	Release Assessment Report Parcel 24
24	2418A-914SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	10	=	-	0.057	2	1	Release Assessment Report Parcel 24
24	2418A-914SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.012	J	-	0.0057	0.018	1	Release Assessment Report Parcel 24
24	2418A-951SS-C-SO	0	0.5	7439-92-1	Lead	499	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-920SS-L-XRF-SO	0	0.25	7439-92-1	Lead	497	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	10	=	-	0.057	2	1	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.011	J	-	0.0055	0.017	1	Release Assessment Report Parcel 24
24	2418A-970SS-C-SO	0	0.5	7439-92-1	Lead	494	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-969SS-R-XRF-SO	0	0.25	7439-92-1	Lead	491	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-976SS-C-SO	0	0.5	7439-92-1	Lead	481	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-909SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	480	=	-	0.26	0.88	1	Release Assessment Report Parcel 24
24	2418A-922SS-L-XRF-SO	0	0.25	7440-39-3	Barium	344	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-922SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	15.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A923-EFR-D-SO	1	1.5	7439-92-1	Lead	478	=	21.3	10.7	42.7	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-926SS-C-SO	0	0.5	7439-92-1	Lead	464	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-922SS-R-XRF-SO	0	0.25	7440-39-3	Barium	473	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-922SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	8.31	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A948-EFL-D-SO	1	1.5	7439-92-1	Lead	458	=	22.4	11.2	44.7	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFL-D-SO	1	1.5	7439-92-1	Lead	457	=	22.3	11.1	44.6	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-975SS-R-XRF-SO	0	0.25	7439-92-1	Lead	447	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRF-SO	0	0.25	7439-92-1	Lead	445	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-929SS-L-XRF-SO	0	0.25	7440-39-3	Barium	471	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-929SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	18.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-965SS-L-XRF-SO	0	0.25	7439-92-1	Lead	444	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-912SS-C-SO	0	0.5	7439-92-1	Lead	443	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRF-SO	0	0.25	7440-39-3	Barium	560	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	27.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	440	=	-	0.28	0.95	1	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	4	=	-	0.69	1.6	1	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	190	=	-	0.079	2.1	1	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.83	=	-	0.043	0.52	1	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	15	=	-	0.06	2.1	1	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.019	=	-	0.0053	0.016	1	Release Assessment Report Parcel 24
24	2418A-914SS-C-SO	0	0.5	7439-92-1	Lead	438	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-944SS-C-SO	0	0.5	7439-92-1	Lead	434	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-930SS-L-XRF-SO	0	0.25	7440-39-3	Barium	640	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-930SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	17.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-930SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	19.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	430	J	-	0.28	0.95	1	Release Assessment Report Parcel 24
24	2418A-942SS-C-SO	0	0.5	7439-92-1	Lead	429	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-930SS-R-XRF-SO	0	0.25	7440-39-3	Barium	199	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-930SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	13.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-962SS-C-SO	0	0.5	7439-92-1	Lead	428	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-930SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	2.9	=	-	0.69	1.6	1	Release Assessment Report Parcel 24
24	2418A-930SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	210	=	-	0.08	2.1	1	Release Assessment Report Parcel 24
24	2418A-930SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.42	J	-	0.043	0.52	1	Release Assessment Report Parcel 24
24	2418A-930SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	12	=	-	0.061	2.1	1	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-930SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.029	=	-	0.0057	0.018	1	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRF-SO	0	0.25	7440-38-2	Arsenic	1088	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRF-SO	0	0.25	7440-39-3	Barium	383	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	21.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-950SS-C-SO	0	0.5	7439-92-1	Lead	423	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	2.9	=	-	0.6	1.4	1	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	180	=	-	0.069	1.8	1	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.26	J	-	0.037	0.46	1	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	9.7	=	-	0.053	1.8	1	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.022	=	-	0.0058	0.018	1	Release Assessment Report Parcel 24
24	2418A-509SS-C-SO	0	0.5	7439-92-1	Lead	419	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A976-EFR-D-SO	1	1.5	7439-92-1	Lead	416	=	4.15	2.07	8.3	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-937SS-L-XRF-SO	0	0.25	7440-39-3	Barium	536	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-937SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	20.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-913SS-C-SO	0	0.5	7439-92-1	Lead	415	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-955SS-C-SO	0	0.5	7439-92-1	Lead	413	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-937SS-R-XRF-SO	0	0.25	7440-39-3	Barium	240	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-937SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	14.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-964SS-C-SO	0	0.5	7439-92-1	Lead	407	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRF-SO	0	0.25	7439-92-1	Lead	399	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-L-XRF-SO	0	0.25	7439-97-6	Mercury	13.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-L-XRF-SO	0	0.25	7440-39-3	Barium	310	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-956SS-C-SO	0	0.5	7439-92-1	Lead	395	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-918SS-R-XRF-SO	0	0.25	7439-92-1	Lead	391	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-902SS-R-XRF-SO	0	0.25	7440-39-3	Barium	406	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-902SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	17	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-919SS-C-SO	0	0.5	7439-92-1	Lead	385	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-905SS-C-SO	0	0.5	7439-92-1	Lead	383	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-903SS-L-XRF-SO	0	0.25	7440-39-3	Barium	292	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-903SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	23.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-964SS-R-XRF-SO	0	0.25	7439-92-1	Lead	381	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-929SS-R-XRF-SO	0	0.25	7439-92-1	Lead	376	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-903SS-R-XRF-SO	0	0.25	7440-39-3	Barium	286	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-903SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	22.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-C-SO	0	0.5	7439-92-1	Lead	376	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-910SS-C-SO	0	0.5	7439-92-1	Lead	371	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-904SS-L-XRF-SO	0	0.25	7440-39-3	Barium	440	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-904SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	11.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-973SS-C-SO	0	0.5	7439-92-1	Lead	369	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A938-EFR-D-SO	1	1.5	7439-92-1	Lead	365	=	2.21	1.11	4.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-945SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	360	J	-	0.24	0.79	1	Release Assessment Report Parcel 24
24	2418A-906SS-C-SO	0	0.5	7439-92-1	Lead	359	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-910SS-R-XRF-SO	0	0.25	7440-39-3	Barium	511	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-910SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	20.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-910SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	12	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-904SS-C-SO	0	0.5	7439-92-1	Lead	357	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A922-EFL-D-SO	1	1.5	7439-92-1	Lead	353	=	2.3	1.15	4.59	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-918SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	350	=	-	0.26	0.87	1	Release Assessment Report Parcel 24
24	2418A-947SS-C-SO	0	0.5	7439-92-1	Lead	350	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-912SS-L-XRF-SO	0	0.25	7440-39-3	Barium	709	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-912SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	35	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-912SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	9.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-909SS-R-XRF-SO	0	0.25	7439-92-1	Lead	348	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-934SS-C-SO	0	0.5	7439-92-1	Lead	347	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-912SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	13461	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-905SS-R-XRF-SO	0	0.25	7439-92-1	Lead	341	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-912SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	3.5	=	-	0.75	1.7	1	Release Assessment Report Parcel 24
24	2418A-912SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	180	=	-	0.086	2.3	1	Release Assessment Report Parcel 24
24	2418A-918SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.16	J	-	0.04	0.49	1	Release Assessment Report Parcel 24
24	2418A-918SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	11	=	-	0.056	1.9	1	Release Assessment Report Parcel 24
24	2418A-918SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.016	J	-	0.0057	0.017	1	Release Assessment Report Parcel 24
24	2418A-965SS-C-SO	0	0.5	7439-92-1	Lead	337	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-974SS-C-SO	0	0.5	7439-92-1	Lead	334	J	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-919SS-L-XRF-SO	0	0.25	7440-39-3	Barium	270	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-919SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-968SS-C-SO	0	0.5	7439-92-1	Lead	333	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-936SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	330	J	-	0.25	0.82	1	Release Assessment Report Parcel 24
24	2418A-919SS-R-XRF-SO	0	0.25	7440-39-3	Barium	68.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-919SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	29.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-930SS-C-SO	0	0.5	7439-92-1	Lead	324	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-948SS-R-XRF-SO	0	0.25	7439-92-1	Lead	322	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-L-XRF-SO	0	0.25	7440-39-3	Barium	577	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	15.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	15.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-954SS-L-XRF-SO	0	0.25	7439-92-1	Lead	316	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-949SS-C-SO	0	0.5	7439-92-1	Lead	316	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRF-SO	0	0.25	7440-22-4	Silver	16.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRF-SO	0	0.25	7440-39-3	Barium	672	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	39	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	8.65	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRF-SO	0	0.25	7439-92-1	Lead	314	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	3.2	=	-	0.65	1.5	1	Release Assessment Report Parcel 24
24	2418A-920SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	220	=	-	0.074	2	1	Release Assessment Report Parcel 24
24	2418A-924SS-R-XRF-SO	0	0.25	7439-92-1	Lead	302	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-L-XRF-SO	0	0.25	7439-92-1	Lead	302	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-927SS-R-XRF-SO	0	0.25	7440-39-3	Barium	358	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-927SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	15.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-958SS-C-SO	0	0.5	7439-92-1	Lead	296	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-908SS-C-SO	0	0.5	7439-92-1	Lead	294	J	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-928SS-L-XRF-SO	0	0.25	7440-39-3	Barium	418	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-928SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	6.97	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-937SS-C-SO	0	0.5	7439-92-1	Lead	294	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-938SS-C-SO	0	0.5	7439-92-1	Lead	292	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-928SS-R-XRF-SO	0	0.25	7440-39-3	Barium	406	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-928SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	20.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A945-EFL-D-SO	1	1.5	7439-92-1	Lead	291	=	2.21	1.1	4.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-905SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	290	=	-	0.27	0.89	1	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-902SS-C-SO	0	0.5	7439-92-1	Lead	287	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-935SS-L-XRF-SO	0	0.25	7440-39-3	Barium	237	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-935SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-920SS-C-SO	0	0.5	7439-92-1	Lead	286	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-935SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.66	1.5	1	Release Assessment Report Parcel 24
24	2418A-935SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	170	=	-	0.076	2	1	Release Assessment Report Parcel 24
24	2418A-935SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	8.3	=	-	0.058	2	1	Release Assessment Report Parcel 24
24	2418A-935SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.023	=	-	0.0059	0.018	1	Release Assessment Report Parcel 24
24	24A944-EFL-D-SO	1	1.5	7439-92-1	Lead	286	=	2.32	1.16	4.63	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-933SS-L-XRF-SO	0	0.25	7439-92-1	Lead	282	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-935SS-R-XRF-SO	0	0.25	7440-39-3	Barium	577	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-935SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	17.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-935SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	10.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-959SS-M-SO	0	0.5	7439-92-1	Lead	281	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-905SS-L-XRF-SO	0	0.25	7439-92-1	Lead	279	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRF-SO	0	0.25	7440-38-2	Arsenic	20.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRF-SO	0	0.25	7440-39-3	Barium	401	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	12.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-R-XRF-SO	0	0.25	7439-92-1	Lead	276	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	1.5	=	-	0.66	1.5	1	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	420	=	-	0.076	2	1	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	12	=	-	0.058	2	1	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.011	J	-	0.0055	0.017	1	Release Assessment Report Parcel 24
24	2418A-907SS-C-SO	0	0.5	7439-92-1	Lead	275	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A962-EFL-D-SO	1	1.5	7439-92-1	Lead	275	=	2.2	1.1	4.4	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A977-EFR-D-SO2	1.5	2	7439-92-1	Lead	275	=	0.26	0.13	0.52	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-927SS-C-SO	0	0.5	7439-92-1	Lead	273	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-948SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	270	=	-	0.33	1.1	1	Release Assessment Report Parcel 24
24	24A925-EFR-D-SO	1	1.5	7439-92-1	Lead	270	=	2.42	1.21	4.85	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-902SS-L-XRF-SO	0	0.25	7440-39-3	Barium	447	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-902SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	19.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-902SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-914SS-R-XRF-SO	0	0.25	7439-92-1	Lead	266	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-956SS-L-XRF-SO	0	0.25	7439-92-1	Lead	265	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-924SS-C-SO	0	0.5	7439-92-1	Lead	260	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-908SS-R-XRF-SO	0	0.25	7440-39-3	Barium	927	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-908SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	19.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-908SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	10.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-930SS-R-XRF-SO	0	0.25	7439-92-1	Lead	260	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-930SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	260	=	-	0.28	0.94	1	Release Assessment Report Parcel 24
24	2418A-909SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A939-EFL-D-SO	1	1.5	7439-92-1	Lead	258	=	2.19	1.09	4.37	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-928SS-C-SO	0	0.5	7439-92-1	Lead	249	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-909SS-R-XRF-SO	0	0.25	7440-39-3	Barium	96.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-909SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	10.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-962SS-R-XRF-SO	0	0.25	7439-92-1	Lead	248	=	-	-	-	1	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-909SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	3	=	-	0.65	1.5	1	Release Assessment Report Parcel 24
24	2418A-909SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	160	=	-	0.074	2	1	Release Assessment Report Parcel 24
24	2418A-909SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.35	J	-	0.04	0.49	1	Release Assessment Report Parcel 24
24	2418A-909SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	8.9	=	-	0.057	2	1	Release Assessment Report Parcel 24
24	2418A-909SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.022	=	-	0.0057	0.018	1	Release Assessment Report Parcel 24
24	2418A-932SS-C-SO	0	0.5	7439-92-1	Lead	246	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-938SS-L-XRF-SO	0	0.25	7439-92-1	Lead	246	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-910SS-L-XRF-SO	0	0.25	7440-39-3	Barium	663	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-910SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	21.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-910SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	8.38	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-916SS-R-XRF-SO	0	0.25	7440-39-3	Barium	479	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-916SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	13.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-927SS-R-XRF-SO	0	0.25	7439-92-1	Lead	244	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-917SS-L-XRF-SO	0	0.25	7440-39-3	Barium	352	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-952SS-R-XRF-SO	0	0.25	7439-92-1	Lead	243	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-954SS-C-SO	0	0.5	7439-92-1	Lead	241	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-917SS-R-XRF-SO	0	0.25	7440-39-3	Barium	344	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-917SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	9.73	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-934SS-R-XRF-SO	0	0.25	7439-92-1	Lead	240	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-943SS-R-XRF-SO	0	0.25	7439-92-1	Lead	238	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-918SS-L-XRF-SO	0	0.25	7440-39-3	Barium	277	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-977SS-R-XRF-SO	0	0.25	7439-92-1	Lead	234	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A976-EFL-D-SO	1	1.5	7439-92-1	Lead	227	=	2.17	1.09	4.35	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-918SS-R-XRF-SO	0	0.25	7440-39-3	Barium	398	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-918SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	18.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-902SS-R-XRF-SO	0	0.25	7439-92-1	Lead	223	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-918SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	2.9	=	-	0.64	1.5	1	Release Assessment Report Parcel 24
24	2418A-918SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	250	=	-	0.074	1.9	1	Release Assessment Report Parcel 24
24	2418A-925SS-L-XRF-SO	0	0.25	7440-39-3	Barium	803	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-925SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	35.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A952-EFR-D-SO	1	1.5	7439-92-1	Lead	223	=	2.12	1.06	4.24	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-963SS-C-SO	0	0.5	7439-92-1	Lead	223	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-925SS-R-XRF-SO	0	0.25	7440-39-3	Barium	955	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-925SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	14.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-932SS-R-XRF-SO	0	0.25	7439-92-1	Lead	217	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A918-EFL-D-SO	1	1.5	7439-92-1	Lead	217	=	2.65	1.33	5.3	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-926SS-L-XRF-SO	0	0.25	7440-39-3	Barium	436	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-926SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	9.65	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-967SS-C-SO	0	0.5	7439-92-1	Lead	215	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A924-EFR-D-SO	1	1.5	7439-92-1	Lead	214	=	2.64	1.32	5.29	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-926SS-R-XRF-SO	0	0.25	7440-39-3	Barium	440	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-926SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	13.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-918SS-L-XRF-SO	0	0.25	7439-92-1	Lead	212	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-957SS-C-SO	0	0.5	7439-92-1	Lead	208	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-927SS-L-XRF-SO	0	0.25	7440-39-3	Barium	425	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-927SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	16.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-933SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	8.7	=	-	0.059	2	1	Release Assessment Report Parcel 24



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-933SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.018	=	-	0.0059	0.018	1	Release Assessment Report Parcel 24
24	2418A-975SS-C-SO	0	0.5	7439-92-1	Lead	208	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-941SS-L-XRF-SO	0	0.25	7439-92-1	Lead	207	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-933SS-R-XRF-SO	0	0.25	7440-39-3	Barium	337	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-922SS-L-XRF-SO	0	0.25	7439-92-1	Lead	206	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-954SS-R-XRF-SO	0	0.25	7439-92-1	Lead	204	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-925SS-R-XRF-SO	0	0.25	7439-92-1	Lead	203	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRF-SO	0	0.25	7440-39-3	Barium	420	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	11.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	200	J	-	0.28	0.94	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.7	1.6	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	190	=	-	0.08	2.1	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	13	=	-	0.061	2.1	1	Release Assessment Report Parcel 24
24	2418A-934SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.019	=	-	0.0057	0.018	1	Release Assessment Report Parcel 24
24	2418A-914SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	200	=	-	0.26	0.88	1	Release Assessment Report Parcel 24
24	24A936-EFL-D-SO	1	1.5	7439-92-1	Lead	196	=	2.11	1.05	4.22	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-934SS-R-XRF-SO	0	0.25	7440-39-3	Barium	407	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-934SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	14.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-940SS-C-SO	0	0.5	7439-92-1	Lead	194	J	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-973SS-R-XRF-SO	0	0.25	7439-92-1	Lead	194	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-968SS-L-XRF-SO	0	0.25	7439-92-1	Lead	194	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-941SS-L-XRF-SO	0	0.25	7440-39-3	Barium	429	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-941SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	11.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-912SS-L-XRF-SO	0	0.25	7439-92-1	Lead	192	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	190	J	-	0.29	0.96	1	Release Assessment Report Parcel 24
24	2418A-941SS-R-XRF-SO	0	0.25	7440-39-3	Barium	226	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-941SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	17.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-939SS-R-XRF-SO	0	0.25	7439-92-1	Lead	187	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-919SS-R-XRF-SO	0	0.25	7439-92-1	Lead	187	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-942SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	11	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-921SS-C-SO	0	0.5	7439-92-1	Lead	186	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-915SS-L-XRF-SO	0	0.25	7439-92-1	Lead	184	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-946SS-R-XRF-SO	0	0.25	7440-39-3	Barium	109	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-937SS-R-XRF-SO	0	0.25	7439-92-1	Lead	184	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A939-EFR-D-SO	1	1.5	7439-92-1	Lead	180	=	2.06	1.03	4.11	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-947SS-L-XRF-SO	0	0.25	7440-39-3	Barium	549	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-947SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	18.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-947SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	9.52	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-972SS-C-SO	0	0.5	7439-92-1	Lead	179	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-936SS-L-XRF-SO	0	0.25	7439-92-1	Lead	178	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-947SS-R-XRF-SO	0	0.25	7440-39-3	Barium	261	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-947SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	10	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-910SS-R-XRF-SO	0	0.25	7439-92-1	Lead	174	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-911SS-C-SO	0	0.5	7439-92-1	Lead	170	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-948SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	14.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A929-EFR-D-SO	1	1.5	7439-92-1	Lead	170	=	2.06	1.03	4.13	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A-EF-D-SO-DUP03	1	1.5	7439-92-1	Lead	170	J	2.2	1.1	4.39	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-948SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	15.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-769SS-C-SO	0	0.5	7439-92-1	Lead	168	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-948SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	4.3	=	-	0.79	1.8	1	Release Assessment Report Parcel 24
24	2418A-948SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	180	=	-	0.091	2.4	1	Release Assessment Report Parcel 24
24	24A909-EFL-D-SO	1	1.5	7439-92-1	Lead	164	=	2.18	1.09	4.36	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A935-EFL-D-SO	1	1.5	7439-92-1	Lead	162	=	2.2	1.1	4.41	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-955SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	17.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-956SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	160	J	-	0.26	0.88	1	Release Assessment Report Parcel 24
24	2418A-967SS-R-XRF-SO	0	0.25	7439-92-1	Lead	156	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-956SS-L-XRF-SO	0	0.25	7440-39-3	Barium	388	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-956SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	12.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-916SS-L-XRF-SO	0	0.25	7439-92-1	Lead	155	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-956SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	3.1	=	-	0.64	1.5	1	Release Assessment Report Parcel 24
24	2418A-956SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	190	=	-	0.074	2	1	Release Assessment Report Parcel 24
24	2418A-956SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	11	=	-	0.057	2	1	Release Assessment Report Parcel 24
24	2418A-956SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.022	=	-	0.0057	0.017	1	Release Assessment Report Parcel 24
24	2418A-976SS-L-XRF-SO	0	0.25	7439-92-1	Lead	155	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-952SS-L-XRF-SO	0	0.25	7439-92-1	Lead	154	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-956SS-R-XRF-SO	0	0.25	7440-39-3	Barium	389	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-956SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	19.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-930SS-L-XRF-SO	0	0.25	7439-92-1	Lead	152	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-049SS-C-SO	0	0.5	7439-92-1	Lead	151	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-957SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-964SS-R-XRF-SO	0	0.25	7440-39-3	Barium	77.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-964SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	10	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A936-EFR-D-SO	1	1.5	7439-92-1	Lead	151	=	2.1	1.05	4.21	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-964SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	2.5	=	-	0.63	1.4	1	Release Assessment Report Parcel 24
24	2418A-964SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	210	=	-	0.073	1.9	1	Release Assessment Report Parcel 24
24	2418A-964SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.31	J	-	0.039	0.48	1	Release Assessment Report Parcel 24
24	2418A-964SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	12	=	-	0.056	1.9	1	Release Assessment Report Parcel 24
24	2418A-964SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.028	=	-	0.0059	0.018	1	Release Assessment Report Parcel 24
24	24A947-EFR-D-SO	1	1.5	7439-92-1	Lead	150	=	2.2	1.1	4.39	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-942SS-L-XRF-SO	0	0.25	7439-92-1	Lead	148	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-965SS-L-XRF-SO	0	0.25	7440-39-3	Barium	464	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-965SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	14	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-939SS-L-XRF-SO	0	0.25	7439-92-1	Lead	146	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-907SS-L-XRF-SO	0	0.25	7439-92-1	Lead	145	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-965SS-R-XRF-SO	0	0.25	7440-39-3	Barium	473	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-965SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	12.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-965SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	9.64	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A946-EFR-D-SO	1	1.5	7439-92-1	Lead	145	=	2.13	1.07	4.27	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-931SS-C-SO	0	0.5	7439-92-1	Lead	144	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A934-EFL-D-SO	1	1.5	7439-92-1	Lead	144	=	2.15	1.08	4.31	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A969-EFR-D-SO	1	1.5	7439-92-1	Lead	143	=	3.18	1.59	6.37	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-973SS-R-XRF-SO	0	0.25	7440-39-3	Barium	598	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-973SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	25.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-973SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	11.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-949SS-R-XRF-SO	0	0.25	7439-92-1	Lead	141	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-954SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	140	J	-	0.25	0.83	1	Release Assessment Report Parcel 24
24	2418A-974SS-L-XRF-SO	0	0.25	7440-39-3	Barium	196	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-974SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	12.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-961SS-C-SO	0	0.5	7439-92-1	Lead	140	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-902SS-L-XRF-SO	0	0.25	7439-92-1	Lead	139	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-974SS-R-XRF-SO	0	0.25	7440-39-3	Barium	436	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-906SS-R-XRF-SO	0	0.25	7439-92-1	Lead	135	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-901SS-C-SO	0	0.5	7439-92-1	Lead	134	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-975SS-L-XRF-SO	0	0.25	7440-39-3	Barium	461	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-975SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-971SS-R-XRF-SO	0	0.25	7439-92-1	Lead	133	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-958SS-R-XRF-SO	0	0.25	7439-92-1	Lead	133	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-957SS-L-XRF-SO	0	0.25	7439-92-1	Lead	132	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A964-EFR-D-SO	1	1.5	7439-92-1	Lead	131	=	2.17	1.08	4.34	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-965SS-R-XRF-SO	0	0.25	7439-92-1	Lead	128	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A927-EFL-D-SO	1	1.5	7439-92-1	Lead	127	=	2.44	1.22	4.87	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-913SS-L-XRF-SO	0	0.25	7439-92-1	Lead	126	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A926-EFR-D-SO	1	1.5	7439-92-1	Lead	126	=	2.77	1.38	5.53	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-926SS-R-XRF-SO	0	0.25	7439-92-1	Lead	123	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-973SS-L-XRF-SO	0	0.25	7439-92-1	Lead	123	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-915SS-R-XRF-SO	0	0.25	7439-92-1	Lead	121	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-964SS-L-XRF-SO	0	0.25	7439-92-1	Lead	120	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-949SS-L-XRF-SO	0	0.25	7439-92-1	Lead	119	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-951SS-L-XRF-SO	0	0.25	7439-92-1	Lead	118	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-950SS-L-XRF-SO	0	0.25	7439-92-1	Lead	117	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-944SS-L-XRF-SO	0	0.25	7439-92-1	Lead	116	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A952-EFL-D-SO	1	1.5	7439-92-1	Lead	113	=	2.18	1.09	4.35	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-924SS-L-XRF-SO	0	0.25	7439-92-1	Lead	111	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-969SS-L-XRF-SO	0	0.25	7439-92-1	Lead	110	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A939-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.42	=	0.21	0.1	0.41	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A939-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.02	=	0.012	0.005	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-937SS-L-XRF-SO	0	0.25	7439-92-1	Lead	108	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A941-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.22	J	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A941-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.011	J	0.012	0.0047	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-919SS-L-XRF-SO	0	0.25	7439-92-1	Lead	105	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A941-EFR-D-SO	1	1.5	7440-38-2	Arsenic	6.55	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A941-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.028	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-935SS-R-XRF-SO	0	0.25	7439-92-1	Lead	104	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A941-EFR-D-SO2	3	3.5	7440-38-2	Arsenic	3.79	=	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A941-EFR-D-SO2	3	3.5	7439-97-6	Mercury	0.042	=	0.014	0.0055	0.014	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A951-EFL-D-SO	1	1.5	7439-92-1	Lead	104	=	2.19	1.09	4.38	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A942-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.65	J	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A942-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A925-EFL-D-SO	1	1.5	7439-92-1	Lead	104	=	2.5	1.25	5	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A942-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.24	J	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A942-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.014	0.0055	0.014	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-916SS-R-XRF-SO	0	0.25	7439-92-1	Lead	102	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A943-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.66	J	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A943-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.027	=	0.014	0.0054	0.014	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-963SS-L-XRF-SO	0	0.25	7439-92-1	Lead	102	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A943-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.65	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A943-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.033	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-933SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	100	J	-	0.28	0.92	1	Release Assessment Report Parcel 24
24	24A943-EFR-D-SO2	3.5	4	7440-38-2	Arsenic	4.55	=	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A943-EFR-D-SO2	3.5	4	7439-97-6	Mercury	0.045	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-935SS-L-XRFC-SO	0	0.25	7439-92-1	Lead	100	J	-	0.27	0.9	1	Release Assessment Report Parcel 24
24	24A944-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.01	J	0.23	0.12	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A944-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.033	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-956SS-R-XRF-SO	0	0.25	7439-92-1	Lead	98.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A944-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.73	J	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A944-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.028	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A905-EFR-D-SO	1	1.5	7439-92-1	Lead	96.8	=	2.26	1.13	4.51	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A944-EFR-D-SO2	2	2.5	7440-38-2	Arsenic	4.03	=	0.23	0.12	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A944-EFR-D-SO2	2	2.5	7439-97-6	Mercury	0.028	=	0.012	0.0046	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-953SS-C-SO	0	0.5	7439-92-1	Lead	94.3	=	5	1	-	5	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A945-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.98	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A945-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.029	=	0.013	0.005	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-947SS-L-XRF-SO	0	0.25	7439-92-1	Lead	94	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A946-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.58	J	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A946-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.04	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A975-EFR-D-SO	1	1.5	7439-92-1	Lead	93.7	=	2.09	1.05	4.18	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A946-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.99	J	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A946-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.038	=	0.012	0.0048	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-912SS-R-XRFC-SO	0	0.25	7439-92-1	Lead	93	=	-	0.31	1	1	Release Assessment Report Parcel 24
24	24A947-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.53	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A947-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.048	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-929SS-L-XRF-SO	0	0.25	7439-92-1	Lead	92.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A948-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.49	=	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A948-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.032	=	0.011	0.0045	0.011	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-968SS-R-XRF-SO	0	0.25	7439-92-1	Lead	92	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A948-EFL-D-SO2	1.5	2	7440-38-2	Arsenic	4.26	=	0.28	0.14	0.56	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A948-EFL-D-SO2	1.5	2	7439-97-6	Mercury	0.046	=	0.016	0.0066	0.016	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-908SS-L-XRF-SO	0	0.25	7439-92-1	Lead	90.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A948-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.38	=	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A948-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A970-EFR-D-SO	1	1.5	7439-92-1	Lead	90.7	=	2.21	1.11	4.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A950-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.13	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A950-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-963SS-R-XRF-SO	0	0.25	7439-92-1	Lead	87.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A950-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.56	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A950-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.018	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-917SS-R-XRF-SO	0	0.25	7439-92-1	Lead	87	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A951-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.96	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A951-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.018	=	0.012	0.0048	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-966SS-C-SO	0	0.5	7439-92-1	Lead	84.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A951-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.47	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A951-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.017	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A977-EFR-D-SO	1	1.5	7439-92-1	Lead	83	=	2.16	1.08	4.33	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A951-EFR-D-SO2	2	2.5	7440-38-2	Arsenic	2.76	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A951-EFR-D-SO2	2	2.5	7439-97-6	Mercury	0.015	=	0.012	0.005	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-928SS-R-XRF-SO	0	0.25	7439-92-1	Lead	82.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A952-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.32	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A952-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-948SS-L-XRF-SO	0	0.25	7439-92-1	Lead	82.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A952-EFR-D-SO	1	1.5	7440-38-2	Arsenic	1.82	=	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A952-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.016	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A971-EFL-D-SO	1	1.5	7439-92-1	Lead	81.2	=	2.23	1.12	4.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.86	J	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.032	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A965-EFL-D-SO	1	1.5	7439-92-1	Lead	81	=	2.16	1.08	4.33	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFL-D-SO2	1.5	2	7440-38-2	Arsenic	3.64	=	0.23	0.12	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFL-D-SO2	1.5	2	7439-97-6	Mercury	0.026	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A923-EFL-D-SO	1	1.5	7439-92-1	Lead	79	=	2.25	1.13	4.51	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFL-D-SO3	2	2.5	7440-38-2	Arsenic	3.42	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFL-D-SO3	2	2.5	7439-97-6	Mercury	0.031	=	0.012	0.0049	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-914SS-L-XRF-SO	0	0.25	7439-92-1	Lead	76.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A955-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.72	J	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.03	=	0.013	0.005	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-912SS-R-XRF-SO	0	0.25	7439-92-1	Lead	75.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A955-EFR-D-SO2	2	2.5	7440-38-2	Arsenic	4.53	=	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFR-D-SO2	2	2.5	7439-97-6	Mercury	0.026	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-923SS-L-XRF-SO	0	0.25	7439-92-1	Lead	73.2	=	-	-	-	1	Release Assessment Report Parcel 24



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A962-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.92	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A962-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.027	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-928SS-L-XRF-SO	0	0.25	7439-92-1	Lead	71.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A962-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.09	J	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A962-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.023	=	0.011	0.0043	0.011	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-910SS-L-XRF-SO	0	0.25	7439-92-1	Lead	70.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-933SS-R-XRF-SO	0	0.25	7439-92-1	Lead	68.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-913SS-R-XRF-SO	0	0.25	7439-92-1	Lead	68.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-L-XRF-SO	0	0.25	7440-38-2	Arsenic	43.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	25.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A942-EFL-D-SO	1	1.5	7439-92-1	Lead	66.6	=	2.26	1.13	4.52	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-945SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	3	=	-	0.7	1.6	1	Release Assessment Report Parcel 24
24	2418A-945SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	170	=	-	0.081	2.1	1	Release Assessment Report Parcel 24
24	2418A-945SS-L-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.22	J	-	0.044	0.53	1	Release Assessment Report Parcel 24
24	2418A-945SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	12	=	-	0.062	2.1	1	Release Assessment Report Parcel 24
24	2418A-945SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.024	=	-	0.0056	0.017	1	Release Assessment Report Parcel 24
24	2418A-974SS-L-XRF-SO	0	0.25	7439-92-1	Lead	65.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-951SS-R-XRF-SO	0	0.25	7439-92-1	Lead	64.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-R-XRF-SO	0	0.25	7440-39-3	Barium	527	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	22.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	9.35	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-906SS-L-XRF-SO	0	0.25	7439-92-1	Lead	63.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-945SS-R-XRFC-SO	0	0.25	7440-38-2	Arsenic	3.8	=	-	0.58	1.3	1	Release Assessment Report Parcel 24
24	2418A-945SS-R-XRFC-SO	0	0.25	7440-39-3	Barium	190	=	-	0.067	1.8	1	Release Assessment Report Parcel 24
24	2418A-945SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	12	=	-	0.051	1.8	1	Release Assessment Report Parcel 24
24	2418A-945SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.023	=	-	0.0056	0.017	1	Release Assessment Report Parcel 24
24	2418A-974SS-R-XRF-SO	0	0.25	7439-92-1	Lead	62.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A917-EFR-D-SO	1	1.5	7439-92-1	Lead	62.7	J	2.23	1.12	4.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-946SS-L-XRF-SO	0	0.25	7440-39-3	Barium	313	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-946SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	16	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A903-EFL-D-SO	1	1.5	7439-92-1	Lead	61.7	=	2.26	1.13	4.52	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-926SS-L-XRF-SO	0	0.25	7439-92-1	Lead	61.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-904SS-L-XRF-SO	0	0.25	7439-92-1	Lead	61.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A933-EFR-D-SO	1	1.5	7439-92-1	Lead	61.2	=	2.16	1.08	4.32	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A-EF-D-SO-DUP04	1	1.5	7439-92-1	Lead	60.5	=	2.25	1.12	4.49	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A977-EFL-D-SO	1	1.5	7439-92-1	Lead	60.3	=	2.27	1.13	4.53	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-954SS-L-XRF-SO	0	0.25	7440-39-3	Barium	541	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-954SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	17.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-954SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	9.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A942-EFR-D-SO	1	1.5	7439-92-1	Lead	58.7	=	2.27	1.14	4.54	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-954SS-L-XRFC-SO	0	0.25	7440-38-2	Arsenic	2	=	-	0.61	1.4	1	Release Assessment Report Parcel 24
24	2418A-954SS-L-XRFC-SO	0	0.25	7440-39-3	Barium	230	=	-	0.07	1.8	1	Release Assessment Report Parcel 24
24	2418A-954SS-L-XRFC-SO	0	0.25	7440-47-3	Chromium	11	=	-	0.053	1.8	1	Release Assessment Report Parcel 24
24	2418A-954SS-L-XRFC-SO	0	0.25	7439-97-6	Mercury	0.012	J	-	0.0053	0.016	1	Release Assessment Report Parcel 24
24	24A920-EFR-D-SO	1	1.5	7439-92-1	Lead	58.5	=	2.12	1.06	4.23	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A907-EFR-D-SO	1	1.5	7439-92-1	Lead	57.9	=	2.17	1.09	4.34	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-954SS-R-XRF-SO	0	0.25	7440-39-3	Barium	403	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-954SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	17.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-957SS-R-XRF-SO	0	0.25	7439-92-1	Lead	57.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-942SS-R-XRF-SO	0	0.25	7439-92-1	Lead	56.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-955SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-971SS-L-XRF-SO	0	0.25	7439-92-1	Lead	56	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A970-EFL-D-SO	1	1.5	7439-92-1	Lead	55.7	=	2.12	1.06	4.23	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-962SS-R-XRF-SO	0	0.25	7440-39-3	Barium	324	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-962SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	17.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-923SS-R-XRF-SO	0	0.25	7439-92-1	Lead	55	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A905-EFL-D-SO	1	1.5	7439-92-1	Lead	55	=	2.18	1.09	4.36	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-963SS-L-XRF-SO	0	0.25	7440-38-2	Arsenic	26.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-963SS-L-XRF-SO	0	0.25	7440-39-3	Barium	255	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-963SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	26.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-970SS-L-XRF-SO	0	0.25	7439-92-1	Lead	54.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A971-EFR-D-SO	1	1.5	7439-92-1	Lead	53.4	=	2.12	1.06	4.24	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-963SS-R-XRF-SO	0	0.25	7440-39-3	Barium	292	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-963SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	14.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-958SS-L-XRF-SO	0	0.25	7439-92-1	Lead	51.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-975SS-L-XRF-SO	0	0.25	7439-92-1	Lead	50.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-964SS-L-XRF-SO	0	0.25	7440-39-3	Barium	360	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-964SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	18.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A-EF-D-SO-DUP01	1	1.5	7439-92-1	Lead	48.7	J	2.17	1.08	4.33	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A950-EFL-D-SO	1	1.5	7439-92-1	Lead	47.7	=	2.21	1.11	4.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A935-EFR-D-SO	1	1.5	7439-92-1	Lead	47.2	=	2.13	1.07	4.26	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A903-EFR-D-SO	1	1.5	7439-92-1	Lead	47.1	J	2.14	1.07	4.28	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-971SS-L-XRF-SO	0	0.25	7440-39-3	Barium	276	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-971SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	9.88	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-967SS-L-XRF-SO	0	0.25	7439-92-1	Lead	46.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A962SS-M-SO	0	0.5	7439-92-1	Lead	46	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-971SS-R-XRF-SO	0	0.25	7440-39-3	Barium	464	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-971SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	26.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-971SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	9.31	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-941SS-M-SO	0	0.5	7439-92-1	Lead	45.2	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A915-EFR-D-SO	1	1.5	7439-92-1	Lead	44.2	=	2.17	1.09	4.35	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A913-EFR-D-SO	1	1.5	7439-92-1	Lead	41.9	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A941-EFL-D-SO	1	1.5	7439-92-1	Lead	40	=	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-973SS-L-XRF-SO	0	0.25	7440-39-3	Barium	285	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-973SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A912-EFR-D-SO	1	1.5	7439-92-1	Lead	39.5	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A912-EFL-D-SO	1	1.5	7439-92-1	Lead	39.2	=	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-970SS-R-XRF-SO	0	0.25	7439-92-1	Lead	38.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A943-EFL-D-SO	1	1.5	7439-92-1	Lead	37.4	=	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A950-EFR-D-SO	1	1.5	7439-92-1	Lead	35.6	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-944SS-M-SO	0	0.5	7439-92-1	Lead	35.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-946SS-L-XRF-SO	0	0.25	7439-92-1	Lead	35.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A962-EFR-D-SO	1	1.5	7439-92-1	Lead	33.6	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-901SS-M-SO	0	0.5	7439-92-1	Lead	32.2	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-904SS-R-XRF-SO	0	0.25	7439-92-1	Lead	32	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A-EF-D-SO-DUP02	1	1.5	7439-92-1	Lead	31	=	2.24	1.12	4.49	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A917-EFL-D-SO	1	1.5	7439-92-1	Lead	30.5	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A916-EFR-D-SO	1	1.5	7439-92-1	Lead	29.8	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-944SS-R-XRF-SO	0	0.25	7439-92-1	Lead	28.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A914-EFR-D-SO	1	1.5	7439-92-1	Lead	28.6	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-968SS-M-SO	0	0.5	7439-92-1	Lead	28.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-908SS-M-SO	0	0.5	7439-92-1	Lead	26.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-925SS-L-XRF-SO	0	0.25	7439-92-1	Lead	26.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-947SS-M-SO	0	0.5	7439-92-1	Lead	26.3	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A909-EFR-D-SO	1	1.5	7439-92-1	Lead	25.3	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A917-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.75	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A917-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.025	=	0.014	0.0054	0.014	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-932SS-L-XRF-SO	0	0.25	7439-92-1	Lead	25	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A-EF-D-SO-DUP01	1	1.5	7440-38-2	Arsenic	2.68	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A-EF-D-SO-DUP01	1	1.5	7439-97-6	Mercury	0.032	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-914SS-M-SO	0	0.5	7439-92-1	Lead	24.9	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A917-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.09	J	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A917-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-945SS-M-SO	0	0.5	7439-92-1	Lead	23.9	=	4.9	1	-	5	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A918-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.89	=	0.27	0.13	0.53	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A918-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.043	=	0.016	0.0062	0.016	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-921SS-M-SO	0	0.5	7439-92-1	Lead	23.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A918-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.25	=	0.26	0.13	0.52	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A918-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.033	=	0.015	0.0061	0.015	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A948-EFL-D-SO2	1.5	2	7439-92-1	Lead	23.8	=	0.28	0.14	0.56	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A918-EFR-D-SO2	1.5	2	7440-38-2	Arsenic	3.4	=	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A918-EFR-D-SO2	1.5	2	7439-97-6	Mercury	0.023	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A915-EFL-D-SO	1	1.5	7439-92-1	Lead	23.8	=	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A920-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.73	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A920-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.026	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-912SS-M-SO	0	0.5	7439-92-1	Lead	23.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A920-EFL-D-SO2	1.5	2	7440-38-2	Arsenic	4.99	=	0.24	0.12	0.48	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A920-EFL-D-SO2	1.5	2	7439-97-6	Mercury	0.044	=	0.015	0.0058	0.015	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-976SS-R-XRF-SO	0	0.25	7439-92-1	Lead	23.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A920-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.69	=	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A920-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.012	0.0048	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-926SS-M-SO	0	0.5	7439-92-1	Lead	22.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A922-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.33	=	0.23	0.11	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A922-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.039	=	0.014	0.0056	0.014	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A955-EFR-D-SO2	2	2.5	7439-92-1	Lead	22.6	=	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A922-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.51	=	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A922-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-903SS-R-XRF-SO	0	0.25	7439-92-1	Lead	22.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A922-EFR-D-SO2	4	4.5	7440-38-2	Arsenic	5.02	=	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A922-EFR-D-SO2	4	4.5	7439-97-6	Mercury	0.06	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-903SS-M-SO	0	0.5	7439-92-1	Lead	22.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A923-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.14	=	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A923-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.005	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A946-EFL-D-SO	1	1.5	7439-92-1	Lead	22.1	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A923-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.95	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A923-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A963-EFL-D-SO	1	1.5	7439-92-1	Lead	22.1	=	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A923-EFR-D-SO2	2	2.5	7440-38-2	Arsenic	3.51	=	0.21	0.1	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A923-EFR-D-SO2	2	2.5	7439-97-6	Mercury	0.014	=	0.012	0.0047	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-902SS-M-SO	0	0.5	7439-92-1	Lead	20.9	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A924-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.17	=	0.26	0.13	0.53	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A924-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.058	=	0.016	0.0062	0.016	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-943SS-M-SO	0	0.5	7439-92-1	Lead	20.9	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A925-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.52	=	0.25	0.12	0.5	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A925-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.033	=	0.014	0.0057	0.014	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-910SS-M-SO	0	0.5	7439-92-1	Lead	20.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A925-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.02	=	0.24	0.12	0.48	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A925-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.024	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-971SS-M-SO	0	0.5	7439-92-1	Lead	19.9	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A926-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.48	=	0.24	0.12	0.49	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A926-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.037	=	0.014	0.0056	0.014	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-974SS-M-SO	0	0.5	7439-92-1	Lead	19.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A926-EFL-D-SO2	2	2.5	7440-38-2	Arsenic	3.52	=	0.23	0.11	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A926-EFL-D-SO2	2	2.5	7439-97-6	Mercury	0.027	=	0.014	0.0055	0.014	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-920SS-M-SO	0	0.5	7439-92-1	Lead	19.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A926-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.39	=	0.28	0.14	0.55	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A926-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.015	0.0061	0.015	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-904SS-M-SO	0	0.5	7439-92-1	Lead	19.5	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A927-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.35	=	0.24	0.12	0.49	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A927-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.039	=	0.015	0.0059	0.015	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-917SS-M-SO	0	0.5	7439-92-1	Lead	19.5	=	5	1	-	5	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A929-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.1	=	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A929-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.012	0.0049	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-909SS-M-SO	0	0.5	7439-92-1	Lead	19.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A929-EFL-D-SO2	1	1.5	7440-38-2	Arsenic	3.72	=	0.24	0.12	0.47	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A929-EFL-D-SO2	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-930SS-M-SO	0	0.5	7439-92-1	Lead	19.2	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A929-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.13	=	0.21	0.1	0.41	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A929-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.032	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-954SS-M-SO	0	0.5	7439-92-1	Lead	19.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A933-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.81	=	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A933-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.02	=	0.012	0.0049	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-932SS-M-SO	0	0.5	7439-92-1	Lead	19	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A933-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.95	=	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A933-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.012	0.0047	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A914-EFL-D-SO	1	1.5	7439-92-1	Lead	18.9	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A934-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.98	=	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A934-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A922-EFR-D-SO2	4	4.5	7439-92-1	Lead	18.7	=	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A935-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.29	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A935-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.012	0.0048	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A913-EFL-D-SO	1	1.5	7439-92-1	Lead	18.7	=	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A935-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.99	=	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A935-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.042	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-927SS-M-SO	0	0.5	7439-92-1	Lead	18.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A936-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.99	=	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A936-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-942SS-M-SO	0	0.5	7439-92-1	Lead	18.3	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A936-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.41	=	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A936-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.012	0.0049	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-955SS-M-SO	0	0.5	7439-92-1	Lead	18	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A938-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.37	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A938-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A943-EFR-D-SO2	3.5	4	7439-92-1	Lead	18	=	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A939-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.76	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A939-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.027	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-942SS-R-XRF-SO	0	0.25	7440-39-3	Barium	473	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A955-EFL-D-SO3	2	2.5	7439-92-1	Lead	18	=	0.23	0.12	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-970SS-M-SO	0	0.5	7439-92-1	Lead	17.9	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-943SS-L-XRF-SO	0	0.25	7440-39-3	Barium	530	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-943SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	13.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-905SS-M-SO	0	0.5	7439-92-1	Lead	17.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-949SS-M-SO	0	0.5	7439-92-1	Lead	17.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-943SS-R-XRF-SO	0	0.25	7440-39-3	Barium	143	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-916SS-M-SO	0	0.5	7439-92-1	Lead	17.6	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-906SS-M-SO	0	0.5	7439-92-1	Lead	17.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-944SS-L-XRF-SO	0	0.25	7440-39-3	Barium	498	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-944SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	22.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-944SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A941SS-M-SO	0	0.5	7439-92-1	Lead	17.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-922SS-M-SO	0	0.5	7439-92-1	Lead	17.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-944SS-R-XRF-SO	0	0.25	7440-39-3	Barium	679	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-944SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	14.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-944SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	12	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-923SS-M-SO	0	0.5	7439-92-1	Lead	17.3	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-953SS-M-SO	0	0.5	7439-92-1	Lead	17.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-951SS-L-XRF-SO	0	0.25	7440-39-3	Barium	658	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-951SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	22.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-951SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A958SS-M-SO	0	0.5	7439-92-1	Lead	16.9	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-931SS-M-SO	0	0.5	7439-92-1	Lead	16.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-951SS-R-XRF-SO	0	0.25	7440-39-3	Barium	248	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-951SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	11	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-958SS-M-SO	0	0.5	7439-92-1	Lead	16.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A921SS-M-SO	0	0.5	7439-92-1	Lead	16.5	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-952SS-L-XRF-SO	0	0.25	7439-97-6	Mercury	11.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-952SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	17.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-924SS-M-SO	0	0.5	7439-92-1	Lead	16.3	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A969-EFL-D-SO2	2	2.5	7439-92-1	Lead	16.3	=	0.24	0.12	0.47	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-952SS-R-XRF-SO	0	0.25	7440-39-3	Barium	309	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-952SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	14.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-937SS-M-SO	0	0.5	7439-92-1	Lead	16.2	=	4.9	1	-	5	Release Assessment Report Parcel 24

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FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A926-EFL-D-SO2	2	2.5	7439-92-1	Lead	16.2	=	0.23	0.11	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-969SS-M-SO	0	0.5	7439-92-1	Lead	16.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A849SS-M-SO	0	0.5	7439-92-1	Lead	16.1	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-957SS-M-SO	0	0.5	7439-92-1	Lead	16.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A956SS-M-SO	0	0.5	7439-92-1	Lead	16	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-962SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	15.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A944-EFR-D-SO2	2	2.5	7439-92-1	Lead	15.9	=	0.23	0.12	0.46	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A970SS-M-SO	0	0.5	7439-92-1	Lead	15.9	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-969SS-L-XRF-SO	0	0.25	7440-39-3	Barium	514	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-969SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	16.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-969SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	9.09	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-913SS-M-SO	0	0.5	7439-92-1	Lead	15.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A961SS-M-SO	0	0.5	7439-92-1	Lead	15.8	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-969SS-R-XRF-SO	0	0.25	7440-39-3	Barium	329	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-969SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	7.75	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-951SS-M-SO	0	0.5	7439-92-1	Lead	15.8	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A918-EFR-D-SO2	1.5	2	7439-92-1	Lead	15.7	=	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-970SS-L-XRF-SO	0	0.25	7439-97-6	Mercury	17	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-970SS-L-XRF-SO	0	0.25	7440-39-3	Barium	373	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-970SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	10.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A916-EFL-D-SO	1	1.5	7439-92-1	Lead	15.7	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-977SS-M-SO	0	0.5	7439-92-1	Lead	15.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-970SS-R-XRF-SO	0	0.25	7440-39-3	Barium	555	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-970SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	18.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-970SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	12.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-977SS-R-XRF-SO	0	0.25	7440-39-3	Barium	475	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-977SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	16.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-935SS-M-SO	0	0.5	7439-92-1	Lead	15.6	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A901SS-M-SO	0	0.5	7439-92-1	Lead	15.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-915SS-M-SO	0	0.5	7439-92-1	Lead	15.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-934SS-M-SO	0	0.5	7439-92-1	Lead	15.3	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-973SS-M-SO	0	0.5	7439-92-1	Lead	15.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A941-EFR-D-SO2	3	3.5	7439-92-1	Lead	15.3	=	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-976SS-M-SO	0	0.5	7439-92-1	Lead	15	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-925SS-M-SO	0	0.5	7439-92-1	Lead	14.9	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-929SS-M-SO	0	0.5	7439-92-1	Lead	14.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A908SS-M-SO	0	0.5	7439-92-1	Lead	14.8	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A933SS-M-SO	0	0.5	7439-92-1	Lead	14.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-919SS-M-SO	0	0.5	7439-92-1	Lead	14.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-962SS-M-SO	0	0.5	7439-92-1	Lead	14.5	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A920-EFL-D-SO2	1.5	2	7439-92-1	Lead	14.5	=	0.24	0.12	0.48	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A920ASS-M-SO	0	0.5	7439-92-1	Lead	14.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A973SS-M-SO	0	0.5	7439-92-1	Lead	14.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A905SS-M-SO	0	0.5	7439-92-1	Lead	14.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A079SS-M-SO	0	0.5	7439-92-1	Lead	14.4	=	5	1	-	5	Release Assessment Report Parcel 24

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418Y-A929SS-M-SO	0	0.5	7439-92-1	Lead	14.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A930SS-M-SO	0	0.5	7439-92-1	Lead	14.4	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A901ASS-M-SO	0	0.5	7439-92-1	Lead	14.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A-EF-D-SO-DUP04	1	1.5	7440-38-2	Arsenic	4.1	J	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A-EF-D-SO-DUP04	1	1.5	7439-97-6	Mercury	0.034	=	0.012	0.0049	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A914SS-M-SO	0	0.5	7439-92-1	Lead	14.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A903-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.09	J	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A903-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.029	=	0.012	0.0048	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-918SS-M-SO	0	0.5	7439-92-1	Lead	14.3	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A-EF-D-SO-DUP03	1	1.5	7440-38-2	Arsenic	2.27	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A-EF-D-SO-DUP03	1	1.5	7439-97-6	Mercury	0.031	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A929-EFL-D-SO2	1	1.5	7439-92-1	Lead	14.3	=	0.24	0.12	0.47	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A903-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.33	J	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A903-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.0072	J	0.012	0.0046	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-960SS-M-SO	0	0.5	7439-92-1	Lead	14.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A905-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.09	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A905-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.016	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-950SS-M-SO	0	0.5	7439-92-1	Lead	14.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A905-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.5	J	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A905-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.025	=	0.013	0.005	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A954SS-M-SO	0	0.5	7439-92-1	Lead	14.2	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A907-EFR-D-SO	1	1.5	7440-38-2	Arsenic	1.7	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A907-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.011	J	0.012	0.0049	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-975SS-M-SO	0	0.5	7439-92-1	Lead	14.2	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A909-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.3	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A909-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.01	J	0.012	0.0049	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A957SS-M-SO	0	0.5	7439-92-1	Lead	14.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A909-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.11	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A909-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.019	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-948SS-M-SO	0	0.5	7439-92-1	Lead	14	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A912-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.19	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A912-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.0091	J	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A903SS-M-SO	0	0.5	7439-92-1	Lead	14	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A912-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.08	J	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A912-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.019	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A945SS-M-SO	0	0.5	7439-92-1	Lead	14	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A913-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.86	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A913-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.0055	J	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A920SS-M-SO	0	0.5	7439-92-1	Lead	13.9	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A913-EFR-D-SO	1	1.5	7440-38-2	Arsenic	1.77	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A913-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.01	J	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A944SS-M-SO	0	0.5	7439-92-1	Lead	13.9	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A914-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.33	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A914-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.0072	J	0.011	0.0044	0.011	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A964-EFL-D-SO	1	1.5	7439-92-1	Lead	13.9	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A914-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.68	J	0.21	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A914-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.014	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A931SS-M-SO	0	0.5	7439-92-1	Lead	13.8	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A915-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.02	J	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A915-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.018	=	0.013	0.005	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-911SS-M-SO	0	0.5	7439-92-1	Lead	13.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A915-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.28	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A915-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.016	=	0.012	0.005	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-928SS-M-SO	0	0.5	7439-92-1	Lead	13.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A916-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.75	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A916-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.019	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A907SS-M-SO	0	0.5	7439-92-1	Lead	13.6	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A916-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.12	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A916-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-964SS-M-SO	0	0.5	7439-92-1	Lead	13.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A-EF-D-SO-DUP02	1	1.5	7440-38-2	Arsenic	3.78	J	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	24A-EF-D-SO-DUP02	1	1.5	7439-97-6	Mercury	0.033	=	0.013	0.0054	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-948SS-R-XRFC-SO	0	0.25	7440-43-9	Cadmium	0.28	J	-	0.049	0.6	1	Release Assessment Report Parcel 24
24	2418A-948SS-R-XRFC-SO	0	0.25	7440-47-3	Chromium	12	=	-	0.07	2.4	1	Release Assessment Report Parcel 24
24	2418A-948SS-R-XRFC-SO	0	0.25	7439-97-6	Mercury	0.03	=	-	0.006	0.019	1	Release Assessment Report Parcel 24
24	2418A-907SS-M-SO	0	0.5	7439-92-1	Lead	13.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A904SS-M-SO	0	0.5	7439-92-1	Lead	13.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-949SS-L-XRF-SO	0	0.25	7440-39-3	Barium	328	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-949SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	11	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-949SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	15.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A901BSS-M-SO	0	0.5	7439-92-1	Lead	13.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A968SS-M-SO	0	0.5	7439-92-1	Lead	13.3	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-949SS-R-XRF-SO	0	0.25	7440-39-3	Barium	454	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-949SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	18.4	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A913SS-M-SO	0	0.5	7439-92-1	Lead	13.2	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A937SS-M-SO	0	0.5	7439-92-1	Lead	13.1	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-950SS-L-XRF-SO	0	0.25	7440-39-3	Barium	462	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-950SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	14.1	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A927SS-M-SO	0	0.5	7439-92-1	Lead	13.1	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-960SS-C-SO	0	0.5	7439-92-1	Lead	13.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-950SS-R-XRF-SO	0	0.25	7440-39-3	Barium	428	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-950SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	12.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A918SS-M-SO	0	0.5	7439-92-1	Lead	13.1	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A935ASS-M-SO	0	0.5	7439-92-1	Lead	13	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-957SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	15.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A919SS-M-SO	0	0.5	7439-92-1	Lead	12.9	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-939SS-M-SO	0	0.5	7439-92-1	Lead	12.8	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-958SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	11.5	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-936SS-M-SO	0	0.5	7439-92-1	Lead	12.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-956SS-M-SO	0	0.5	7439-92-1	Lead	12.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-958SS-R-XRF-SO	0	0.25	7440-39-3	Barium	180	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-958SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	12.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A948-EFR-D-SO	1	1.5	7439-92-1	Lead	12.7	=	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A923-EFR-D-SO2	2	2.5	7439-92-1	Lead	12.7	=	0.21	0.1	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A902SS-M-SO	0	0.5	7439-92-1	Lead	12.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A948SS-M-SO	0	0.5	7439-92-1	Lead	12.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A971SS-M-SO	0	0.5	7439-92-1	Lead	12.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-967SS-L-XRF-SO	0	0.25	7440-39-3	Barium	362	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-967SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	11.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	24A976-EFR-D-SO2	3	3.5	7439-92-1	Lead	12.7	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-965SS-M-SO	0	0.5	7439-92-1	Lead	12.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-967SS-R-XRF-SO	0	0.25	7440-39-3	Barium	168	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-967SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	15.9	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-967SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	8.62	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-940SS-M-SO	0	0.5	7439-92-1	Lead	12.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A922SS-M-SO	0	0.5	7439-92-1	Lead	12.4	=	0.98	0.21	-	1	Release Assessment Report Parcel 24
24	2418A-968SS-L-XRF-SO	0	0.25	7440-39-3	Barium	361	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-968SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	20	=	-	-	-	1	Release Assessment Report Parcel 24



**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418A-963SS-M-SO	0	0.5	7439-92-1	Lead	12.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A926SS-M-SO	0	0.5	7439-92-1	Lead	12.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-968SS-R-XRF-SO	0	0.25	7440-39-3	Barium	516	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-968SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	12.2	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A379SS-M-SO	0	0.5	7439-92-1	Lead	11.9	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A943SS-M-SO	0	0.5	7439-92-1	Lead	11.9	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-975SS-R-XRF-SO	0	0.25	7440-39-3	Barium	376	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-975SS-R-XRF-SO	0	0.25	7440-47-3	Chromium	8.58	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-938SS-M-SO	0	0.5	7439-92-1	Lead	11.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-946SS-M-SO	0	0.5	7439-92-1	Lead	11.7	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-976SS-L-XRF-SO	0	0.25	7440-39-3	Barium	678	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-976SS-L-XRF-SO	0	0.25	7440-43-9	Cadmium	18.7	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-976SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	14.3	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A912SS-M-SO	0	0.5	7439-92-1	Lead	11.6	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A928SS-M-SO	0	0.5	7439-92-1	Lead	11.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-976SS-R-XRF-SO	0	0.25	7440-39-3	Barium	395	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-976SS-R-XRF-SO	0	0.25	7440-43-9	Cadmium	17.6	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A976SS-M-SO	0	0.5	7439-92-1	Lead	11.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-959SS-C-SO	0	0.5	7439-92-1	Lead	11.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-977SS-L-XRF-SO	0	0.25	7440-39-3	Barium	188	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418A-977SS-L-XRF-SO	0	0.25	7440-47-3	Chromium	15.8	=	-	-	-	1	Release Assessment Report Parcel 24
24	2418Y-A938SS-M-SO	0	0.5	7439-92-1	Lead	11.6	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A949SS-M-SO	0	0.5	7439-92-1	Lead	11.5	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A963SS-M-SO	0	0.5	7439-92-1	Lead	11.4	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-961SS-M-SO	0	0.5	7439-92-1	Lead	11.4	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A951SS-M-SO	0	0.5	7439-92-1	Lead	11.4	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A917SS-M-SO	0	0.5	7439-92-1	Lead	11.4	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A936SS-M-SO	0	0.5	7439-92-1	Lead	11.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-972SS-M-SO	0	0.5	7439-92-1	Lead	11.2	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418A-952SS-M-SO	0	0.5	7439-92-1	Lead	11.2	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A924SS-M-SO	0	0.5	7439-92-1	Lead	11.2	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-967SS-M-SO	0	0.5	7439-92-1	Lead	11.2	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A955SS-M-SO	0	0.5	7439-92-1	Lead	11.1	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A916SS-M-SO	0	0.5	7439-92-1	Lead	11.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A960SS-M-SO	0	0.5	7439-92-1	Lead	11	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A917ASS-M-SO	0	0.5	7439-92-1	Lead	11	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418A-933SS-M-SO	0	0.5	7439-92-1	Lead	10.9	=	5	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A950SS-M-SO	0	0.5	7439-92-1	Lead	10.9	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A951-EFR-D-SO2	2	2.5	7439-92-1	Lead	10.8	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A902ASS-M-SO	0	0.5	7439-92-1	Lead	10.8	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	2418Y-A940SS-M-SO	0	0.5	7439-92-1	Lead	10.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A963-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.64	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A963-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.028	=	0.012	0.0048	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A942SS-M-SO	0	0.5	7439-92-1	Lead	10.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A964-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.89	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A964-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.025	=	0.013	0.005	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418Y-A935SS-M-SO	0	0.5	7439-92-1	Lead	10.5	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A964-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.72	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A964-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.029	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A197SS-M-SO	0	0.5	7439-92-1	Lead	10.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A965-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.19	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A965-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.016	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A952SS-M-SO	0	0.5	7439-92-1	Lead	10.2	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A969-EFL-D-SO	1	1.5	7440-38-2	Arsenic	7.1	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A969-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.041	=	0.011	0.0044	0.011	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418A-966SS-M-SO	0	0.5	7439-92-1	Lead	10.1	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A969-EFL-D-SO2	2	2.5	7440-38-2	Arsenic	4.46	=	0.24	0.12	0.47	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A969-EFL-D-SO2	2	2.5	7439-97-6	Mercury	0.034	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A911SS-M-SO	0	0.5	7439-92-1	Lead	10.1	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A969-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.69	J	0.32	0.16	0.64	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A969-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.04	=	0.019	0.0077	0.019	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A974SS-M-SO	0	0.5	7439-92-1	Lead	10.1	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A970-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.43	J	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A970-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.023	=	0.013	0.0051	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A910SS-M-SO	0	0.5	7439-92-1	Lead	10	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A970-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.75	J	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A970-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.031	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A933-EFL-D-SO	1	1.5	7439-92-1	Lead	10	=	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A971-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.05	J	0.22	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A971-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.053	=	0.012	0.005	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A911ASS-M-SO	0	0.5	7439-92-1	Lead	9.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A971-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.7	J	0.21	0.11	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A971-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.045	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A932SS-M-SO	0	0.5	7439-92-1	Lead	9.5	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A975-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.34	J	0.21	0.1	0.42	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A975-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.012	0.005	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A

**Appendix C Table 1: Summary of RCRA 8 Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution	Document
24	2418Y-A964SS-M-SO	0	0.5	7439-92-1	Lead	9.5	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A976-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.7	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A976-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.024	=	0.013	0.005	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A969SS-M-SO	0	0.5	7439-92-1	Lead	9.3	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A976-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3	J	0.21	0.1	0.41	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A976-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.023	=	0.012	0.0049	0.012	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A966SS-M-SO	0	0.5	7439-92-1	Lead	8.8	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A976-EFR-D-SO2	3	3.5	7440-38-2	Arsenic	4.2	=	0.22	0.11	0.44	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A976-EFR-D-SO2	3	3.5	7439-97-6	Mercury	0.017	=	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A909SS-M-SO	0	0.5	7439-92-1	Lead	8.7	=	5	1	-	5	Release Assessment Report Parcel 24
24	24A977-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.61	J	0.23	0.11	0.45	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A977-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.013	J	0.013	0.0053	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A953SS-M-SO	0	0.5	7439-92-1	Lead	8	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A977-EFR-D-SO	1	1.5	7440-38-2	Arsenic	0.964	J	0.22	0.11	0.43	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A977-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.014	=	0.013	0.0052	0.013	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	2418Y-A359SS-M-SO	0	0.5	7439-92-1	Lead	7.3	=	4.9	1	-	5	Release Assessment Report Parcel 24
24	24A977-EFR-D-SO2	1.5	2	7440-38-2	Arsenic	1.58	=	0.26	0.13	0.52	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A
24	24A977-EFR-D-SO2	1.5	2	7439-97-6	Mercury	0.0086	J	0.015	0.006	0.015	1	Final Revision 2 Permittee-Initiated Interim Measures report Parcel 24- Igloos Block A

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	0628B-1051-SS-C-SO	0	0.5	7439-92-1	Lead	540	J	0.91	0.27	-	1
6	0628B-1004-SS-C-SO	0	0.5	7439-92-1	Lead	490	J	0.96	0.29	-	1
6	0628B-1021-SS-C-SO	0	0.5	7439-92-1	Lead	450	=	0.9	0.27	-	1
6	0628B-1005-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.4	=	2.6	0.68	-	1
6	0628B-1005-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	2	0.078	-	1
6	0628B-1005-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.51	0.042	-	1
6	0628B-1005-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.6	0.059	-	1
6	0628B-1005-SS-C-SO	0	0.5	7439-97-6	Mercury	0.031	=	0.016	0.0053	-	1
6	0628B-1009-SS-C-SO	0	0.5	7439-92-1	Lead	450	J	0.92	0.28	-	1
6	1641K-1524LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	432	=	0.147	0.294	0.979	0.943
6	0628B-1032-SS-C-SO	0	0.5	7439-92-1	Lead	390	J	0.91	0.27	-	1
6	0628B-1058-SS-C-SO	0	0.5	7439-92-1	Lead	380	J	0.97	0.29	-	1
6	0628B-1002-SS-C-SO	0	0.5	7439-92-1	Lead	360	J	0.87	0.26	-	1
6	0628B-1006-SS-C-SO	0	0.5	7440-38-2	Arsenic	5.6	=	2.5	0.67	-	1
6	0628B-1006-SS-C-SO	0	0.5	7440-39-3	Barium	150	=	2	0.077	-	1
6	0628B-1006-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.45	J	0.51	0.041	-	1
6	0628B-1006-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.5	0.059	-	1
6	0628B-1006-SS-C-SO	0	0.5	7439-97-6	Mercury	0.034	=	0.017	0.0055	-	1
6	0628B-1001-SS-C-SO	0	0.5	7439-92-1	Lead	350	J	0.88	0.26	-	1
6	0628B-1006-SS-C-SO	0	0.5	7439-92-1	Lead	340	J	0.91	0.27	-	1
6	0628B-1031-SS-C-SO	0	0.5	7439-92-1	Lead	310	J	0.94	0.28	-	1
6	0628B-1054-SS-C-SO	0	0.5	7439-92-1	Lead	300	J	0.88	0.27	-	1
6	0628B-1013-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.1	=	2.4	0.64	-	1
6	0628B-1013-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	2	0.074	-	1
6	0628B-1013-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.32	J	0.49	0.04	-	1
6	0628B-1013-SS-C-SO	0	0.5	7440-47-3	Chromium	8.6	=	3.4	0.057	-	1
6	0628B-1013-SS-C-SO	0	0.5	7439-97-6	Mercury	0.025	=	0.017	0.0055	-	1
6	0628B-1017-SS-C-SO	0	0.5	7439-92-1	Lead	290	=	0.9	0.27	-	1
6	0628B-1008-SS-C-SO	0	0.5	7439-92-1	Lead	260	J	0.93	0.28	-	1
6	0628B-1014-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.8	=	2.2	0.59	-	1
6	0628B-1014-SS-C-SO	0	0.5	7440-39-3	Barium	150	=	1.8	0.068	-	1
6	0628B-1014-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.19	J	0.45	0.037	-	1
6	0628B-1014-SS-C-SO	0	0.5	7440-47-3	Chromium	8.6	=	3.1	0.052	-	1
6	0628B-1014-SS-C-SO	0	0.5	7439-97-6	Mercury	0.022	=	0.017	0.0055	-	1
6	0628B-1072-SS-C-SO	0	0.5	7439-92-1	Lead	260	J	0.94	0.28	-	1
6	0628B-1005-SS-C-SO	0	0.5	7439-92-1	Lead	250	J	0.92	0.28	-	1
6	0628B-1007-SS-C-SO	0	0.5	7439-92-1	Lead	250	J	0.94	0.28	-	1
6	0628B-1015-SS-C-SO	0	0.5	7439-92-1	Lead	250	=	0.84	0.25	-	1
6	0628B-1034-SS-C-SO	0	0.5	7439-92-1	Lead	250	J	0.93	0.28	-	1
6	0628B-1059-SS-C-SO	0	0.5	7439-92-1	Lead	250	J	0.97	0.29	-	1
6	1641K-1545LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	242	=	0.139	0.278	0.927	0.901
6	0628B-1022-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.5	=	2.4	0.63	-	1
6	0628B-1022-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	1.9	0.072	-	1
6	0628B-1022-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.47	0.039	-	1
6	0628B-1022-SS-C-SO	0	0.5	7440-47-3	Chromium	9.7	=	3.3	0.055	-	1
6	0628B-1022-SS-C-SO	0	0.5	7439-97-6	Mercury	0.03	=	0.016	0.0052	-	1
6	0628B-1031-SS-C-SODUP	0	0.5	7439-92-1	Lead	220	J	0.96	0.29	-	1
6	0628B-1060-SS-C-SO	0	0.5	7439-92-1	Lead	200	J	0.96	0.29	-	1
6	0628B-1023-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.6	=	2.3	0.61	-	1
6	0628B-1023-SS-C-SO	0	0.5	7440-39-3	Barium	120	=	1.8	0.07	-	1
6	0628B-1023-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.46	0.038	-	1
6	0628B-1023-SS-C-SO	0	0.5	7440-47-3	Chromium	7.1	=	3.2	0.054	-	1
6	0628B-1023-SS-C-SO	0	0.5	7439-97-6	Mercury	0.023	=	0.017	0.0056	-	1
6	0628B-1048-SS-C-SO	0	0.5	7439-92-1	Lead	190	J	0.9	0.27	-	1
6	0628B-1074-SS-C-SO	0	0.5	7439-92-1	Lead	180	J	0.97	0.29	-	1
6	0628B-1013-SS-C-SO	0	0.5	7439-92-1	Lead	170	=	0.88	0.26	-	1
6	0628B-1022-SS-C-SO	0	0.5	7439-92-1	Lead	170	=	0.85	0.26	-	1
6	0628B-1003-SS-C-SO	0	0.5	7440-38-2	Arsenic	5.2	=	2.3	0.6	-	1
6	0628B-1003-SS-C-SO	0	0.5	7440-39-3	Barium	120	=	1.8	0.069	-	1
6	0628B-1003-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.21	J	0.45	0.037	-	1
6	0628B-1003-SS-C-SO	0	0.5	7440-47-3	Chromium	7.3	=	3.2	0.052	-	1
6	0628B-1003-SS-C-SO	0	0.5	7439-97-6	Mercury	0.021	=	0.017	0.0054	-	1
6	0628B-1066-SS-C-SO	0	0.5	7439-92-1	Lead	160	J	0.99	0.3	-	1
6	0628B-1055-SS-C-SO	0	0.5	7439-92-1	Lead	160	J	1	0.3	-	1
6	0628B-1004-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.7	=	2.7	0.7	-	1
6	0628B-1004-SS-C-SO	0	0.5	7440-39-3	Barium	130	=	2.1	0.081	-	1
6	0628B-1004-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.33	J	0.53	0.044	-	1
6	0628B-1004-SS-C-SO	0	0.5	7440-47-3	Chromium	9.9	J	3.7	0.062	-	1
6	0628B-1004-SS-C-SO	0	0.5	7439-97-6	Mercury	0.034	=	0.019	0.0061	-	1
6	0628B-1035-SS-C-SO	0	0.5	7439-92-1	Lead	150	J	0.83	0.25	-	1
6	0628B-1045-SS-C-SO	0	0.5	7439-92-1	Lead	140	J	1	0.3	-	1
6	0628B-1011-SS-C-SO	0	0.5	7440-38-2	Arsenic	3	=	2.3	0.6	-	1
6	0628B-1011-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	1.8	0.069	-	1
6	0628B-1011-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.25	J	0.45	0.037	-	1



**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	0628B-1011-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.2	0.053	-	1
6	0628B-1011-SS-C-SO	0	0.5	7439-97-6	Mercury	0.02	=	0.017	0.0056	-	1
6	0628B-1036-SS-C-SO	0	0.5	7439-92-1	Lead	140	J	0.81	0.24	-	1
6	0628B-1073-SS-C-SO	0	0.5	7439-92-1	Lead	140	J	0.99	0.3	-	1
6	0628B-1012-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.6	=	2.6	0.68	-	1
6	0628B-1012-SS-C-SO	0	0.5	7440-39-3	Barium	130	=	2	0.078	-	1
6	0628B-1012-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.51	0.042	-	1
6	0628B-1012-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.6	0.059	-	1
6	0628B-1012-SS-C-SO	0	0.5	7439-97-6	Mercury	0.026	=	0.018	0.006	-	1
6	0628B-1006REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	131	=	0.291	0.145	0.97	0.901
6	1641K-1525LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	131	=	0.145	0.29	0.968	0.926
6	1641K-1525LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	131	=	0.134	0.267	0.891	0.862
6	0628B-1018-SS-C-SO	0	0.5	7439-92-1	Lead	130	=	0.97	0.29	-	1
6	0628B-1020-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.8	=	2.4	0.64	-	1
6	0628B-1020-SS-C-SO	0	0.5	7440-39-3	Barium	140	=	1.9	0.073	-	1
6	0628B-1020-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.35	J	0.48	0.04	-	1
6	0628B-1020-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.4	0.056	-	1
6	0628B-1020-SS-C-SO	0	0.5	7439-97-6	Mercury	0.025	=	0.018	0.0058	-	1
6	0628B-1053-SS-C-SO	0	0.5	7439-92-1	Lead	130	J	0.99	0.3	-	1
6	0628B-1012-SS-C-SO	0	0.5	7439-92-1	Lead	120	=	0.92	0.28	-	1
6	0628B-1021-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.7	=	2.5	0.66	-	1
6	0628B-1021-SS-C-SO	0	0.5	7440-39-3	Barium	140	=	2	0.076	-	1
6	0628B-1021-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.5	0.041	-	1
6	0628B-1021-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.5	0.058	-	1
6	0628B-1021-SS-C-SO	0	0.5	7439-97-6	Mercury	0.027	=	0.016	0.0052	-	1
6	0628B-1010-SS-C-SO	0	0.5	7439-92-1	Lead	120	J	0.95	0.28	-	1
6	0628B-1001-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.7	=	2.4	0.64	-	1
6	0628B-1001-SS-C-SO	0	0.5	7440-39-3	Barium	110	=	2	0.074	-	1
6	0628B-1001-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.34	J	0.49	0.04	-	1
6	0628B-1001-SS-C-SO	0	0.5	7440-47-3	Chromium	8.6	=	3.4	0.057	-	1
6	0628B-1001-SS-C-SO	0	0.5	7439-97-6	Mercury	0.027	=	0.018	0.0057	-	1
6	0628B-1071-SS-C-SO	0	0.5	7439-92-1	Lead	120	J	1	0.3	-	1
6	0628B-1050-SS-C-SO	0	0.5	7439-92-1	Lead	120	J	0.84	0.25	-	1
6	0628B-1003-SS-C-SO	0	0.5	7439-92-1	Lead	110	J	0.81	0.24	-	1
6	0628B-1090-SS-C-SO	0	0.5	7439-92-1	Lead	110	=	0.92	0.28	-	1
6	0628B-1002-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.1	=	2.4	0.64	-	1
6	0628B-1002-SS-C-SO	0	0.5	7440-39-3	Barium	120	=	1.9	0.073	-	1
6	0628B-1002-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.48	0.039	-	1
6	0628B-1002-SS-C-SO	0	0.5	7440-47-3	Chromium	7.7	=	3.4	0.056	-	1
6	0628B-1002-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.016	0.0051	-	1
6	1641K-1543REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	104	=	0.143	0.285	0.951	0.926
6	0628B-1009-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.3	=	2.6	0.68	-	1
6	0628B-1009-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	2	0.078	-	1
6	0628B-1009-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.79	=	0.51	0.042	-	1
6	0628B-1009-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.6	0.059	-	1
6	0628B-1009-SS-C-SO	0	0.5	7439-97-6	Mercury	0.047	=	0.018	0.0057	-	1
6	0628B-1009REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	101	=	0.313	0.156	1.04	0.926
6	0628B-1044-SS-C-SO	0	0.5	7439-92-1	Lead	100	J	0.91	0.27	-	1
6	0628B-1037-SS-C-SO	0	0.5	7439-92-1	Lead	100	J	0.9	0.27	-	1
6	0628B-1006LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	98.2	=	0.303	0.151	1.01	0.909
6	0628B-1030-SS-C-SO	0	0.5	7439-92-1	Lead	97	J	0.82	0.25	-	1
6	0628B-1010-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.2	=	2.6	0.7	-	1
6	0628B-1010-SS-C-SO	0	0.5	7440-39-3	Barium	130	=	2.1	0.08	-	1
6	0628B-1010-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.37	J	0.53	0.043	-	1
6	0628B-1010-SS-C-SO	0	0.5	7440-47-3	Chromium	8.9	=	3.7	0.061	-	1
6	0628B-1010-SS-C-SO	0	0.5	7439-97-6	Mercury	0.028	=	0.017	0.0056	-	1
6	0628B-1005LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	94.8	J	0.319	0.16	1.06	0.971
6	0628B-1017-SS-C-SO	0	0.5	7439-97-6	Mercury	0.02	=	0.017	0.0054	-	1
6	0628B-1014-SS-C-SO	0	0.5	7439-92-1	Lead	93	=	0.8	0.24	-	1
6	0628B-1052-SS-C-SODUP	0	0.5	7439-92-1	Lead	89	J	0.86	0.26	-	1
6	0628B-1033-SS-C-SO	0	0.5	7439-92-1	Lead	88	J	0.8	0.24	-	1
6	0628B-1018-SS-C-SO	0	0.5	7440-38-2	Arsenic	8.1	=	2.7	0.71	-	1
6	0628B-1018-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	2.2	0.082	-	1
6	0628B-1018-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.27	J	0.54	0.044	-	1
6	0628B-1018-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.8	0.063	-	1
6	0628B-1070-SS-C-SO	0	0.5	7439-92-1	Lead	86	J	0.92	0.28	-	1
6	0628B-1057-SS-C-SO	0	0.5	7439-92-1	Lead	83	J	1.1	0.32	-	1
6	0628B-1019-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.6	=	2.4	0.63	-	1
6	0628B-1019-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	1.9	0.072	-	1
6	0628B-1019-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.48	0.039	-	1
6	0628B-1019-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.3	0.055	-	1
6	0628B-1019-SS-C-SO	0	0.5	7439-97-6	Mercury	0.016	J	0.017	0.0055	-	1
6	0628B-1008LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	78.5	=	0.296	0.148	0.988	0.909
6	0628B-1007-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.6	=	2.6	0.69	-	1



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FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	0628B-1007-SS-C-SO	0	0.5	7440-39-3	Barium	220	=	2.1	0.079	-	1
6	0628B-1007-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.34	J	0.52	0.043	-	1
6	0628B-1007-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.6	0.06	-	1
6	0628B-1007-SS-C-SO	0	0.5	7439-97-6	Mercury	0.027	=	0.018	0.0058	-	1
6	0628B-1023-SS-C-SO	0	0.5	7439-92-1	Lead	78	=	0.83	0.25	-	1
6	0628B-1004LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	77.1	=	0.299	0.15	0.998	0.917
6	0628B-1094-SS-C-SO	0	0.5	7439-92-1	Lead	76	=	0.99	0.3	-	1
6	0628B-1052-SS-C-SO	0	0.5	7439-92-1	Lead	69	J	0.92	0.28	-	1
6	0628B-1008-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.1	=	2.6	0.68	-	1
6	0628B-1008-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	2.1	0.079	-	1
6	0628B-1008-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.24	J	0.52	0.042	-	1
6	0628B-1008-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.6	0.06	-	1
6	0628B-1008-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.018	0.0059	-	1
6	0628B-1058REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	66.1	J	0.31	0.155	1.03	0.971
6	0628B-1062-SS-C-SO	0	0.5	7439-92-1	Lead	64	J	0.86	0.26	-	1
6	0628B-1100-SS-C-SO	0	0.5	7439-92-1	Lead	64	=	0.97	0.29	-	1
6	0628B-1011-SS-C-SO	0	0.5	7439-92-1	Lead	63	=	0.82	0.25	-	1
6	0628B-1015-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.6	=	2.3	0.61	-	1
6	0628B-1015-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	1.9	0.071	-	1
6	0628B-1015-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.42	J	0.46	0.038	-	1
6	0628B-1015-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.3	0.054	-	1
6	0628B-1015-SS-C-SO	0	0.5	7439-97-6	Mercury	0.022	=	0.018	0.0058	-	1
6	0628B-1024-SS-C-SO	0	0.5	7439-92-1	Lead	63	=	0.89	0.27	-	1
6	0628B-1049-SS-C-SO	0	0.5	7439-92-1	Lead	63	J	0.93	0.28	-	1
6	0628B-1065-SS-C-SO	0	0.5	7439-92-1	Lead	63	J	0.94	0.28	-	1
6	0628B-1008REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	61.8	=	0.328	0.164	1.09	0.971
6	0628B-1016-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.4	0.63	-	1
6	0628B-1016-SS-C-SO	0	0.5	7440-39-3	Barium	230	=	1.9	0.073	-	1
6	0628B-1016-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.17	J	0.48	0.039	-	1
6	0628B-1016-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.4	0.056	-	1
6	0628B-1016-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.018	0.0059	-	1
6	0628B-1069-SS-C-SO	0	0.5	7439-92-1	Lead	61	J	0.92	0.28	-	1
6	0628B-1007LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	57	=	0.338	0.169	1.13	0.935
6	0628B-1017-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.5	0.66	-	1
6	0628B-1017-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	2	0.076	-	1
6	0628B-1017-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.38	J	0.5	0.041	-	1
6	0628B-1017-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.5	0.058	-	1
6	0628B-1086-SS-C-SO	0	0.5	7439-92-1	Lead	57	J	0.95	0.28	-	1
6	0628B-1005LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	55.3	J	0.289	0.144	0.963	0.893
6	0628B-1024-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.4	=	2.5	0.65	-	1
6	0628B-1024-SS-C-SO	0	0.5	7440-39-3	Barium	120	=	2	0.075	-	1
6	0628B-1024-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.49	0.041	-	1
6	0628B-1024-SS-C-SO	0	0.5	7440-47-3	Chromium	8.4	=	3.5	0.057	-	1
6	0628B-1024-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.017	0.0056	-	1
6	0628B-1001LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	54.9	=	0.288	0.144	0.962	0.901
6	0628B-1061-SS-C-SO	0	0.5	7439-92-1	Lead	54	J	0.98	0.29	-	1
6	0628B-1025-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.3	0.59	-	1
6	0628B-1025-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	1.8	0.069	-	1
6	0628B-1025-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.18	J	0.45	0.037	-	1
6	0628B-1025-SS-C-SO	0	0.5	7440-47-3	Chromium	9.2	=	3.2	0.052	-	1
6	0628B-1025-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.015	0.005	-	1
6	0628B-1007REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	53.1	=	0.312	0.156	1.04	0.926
6	0628B-1032-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.5	0.67	-	1
6	0628B-1032-SS-C-SO	0	0.5	7440-39-3	Barium	270	=	2	0.077	-	1
6	0628B-1032-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.39	J	0.51	0.041	-	1
6	0628B-1032-SS-C-SO	0	0.5	7440-47-3	Chromium	22	=	3.5	0.059	-	1
6	0628B-1032-SS-C-SO	0	0.5	7439-97-6	Mercury	0.022	=	0.017	0.0055	-	1
6	0628B-1087-SS-C-SO	0	0.5	7439-92-1	Lead	52	J	0.94	0.28	-	1
6	0628B-1083-SS-C-SO	0	0.5	7439-92-1	Lead	52	J	1	0.3	-	1
6	1641K-1528REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	52	=	0.144	0.287	0.958	0.935
6	0628B-1079-SS-C-SO	0	0.5	7439-92-1	Lead	50	J	1	0.3	-	1
6	0628B-1033-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.3	=	2.2	0.59	-	1
6	0628B-1033-SS-C-SO	0	0.5	7440-39-3	Barium	150	=	1.8	0.067	-	1
6	0628B-1033-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.41	J	0.44	0.036	-	1
6	0628B-1033-SS-C-SO	0	0.5	7440-47-3	Chromium	9.2	=	3.1	0.052	-	1
6	0628B-1033-SS-C-SO	0	0.5	7439-97-6	Mercury	0.018	=	0.017	0.0055	-	1
6	0628B-1067-SS-C-SO	0	0.5	7439-92-1	Lead	50	J	0.92	0.28	-	1
6	0628B-1078-SS-C-SO	0	0.5	7439-92-1	Lead	49	J	0.87	0.26	-	1
6	0628B-1047-SS-C-SO	0	0.5	7439-92-1	Lead	48	J	0.91	0.27	-	1
6	0628B-1045-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.8	J	2.8	0.74	-	1
6	0628B-1045-SS-C-SO	0	0.5	7440-39-3	Barium	220	=	2.3	0.086	-	1
6	0628B-1045-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.21	J	0.56	0.046	-	1
6	0628B-1045-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.9	0.065	-	1
6	0628B-1045-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.019	0.0063	-	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	0628B-1020-SS-C-SO	0	0.5	7439-92-1	Lead	47	=	0.87	0.26	-	1
6	0628B-1063-SS-C-SO	0	0.5	7439-92-1	Lead	47	J	0.93	0.28	-	1
6	0628B-1046-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.4	0.63	-	1
6	0628B-1046-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	1.9	0.073	-	1
6	0628B-1046-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.069	J	0.48	0.039	-	1
6	0628B-1046-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.3	0.055	-	1
6	0628B-1046-SS-C-SO	0	0.5	7439-97-6	Mercury	0.012	J	0.017	0.0054	-	1
6	0628B-1096-SS-C-SO	0	0.5	7439-92-1	Lead	46	=	0.99	0.3	-	1
6	0628B-1027-SS-C-SO	0	0.5	7439-92-1	Lead	46	J	0.91	0.27	-	1
6	0628B-1025-SS-C-SO	0	0.5	7439-92-1	Lead	45	=	0.81	0.24	-	1
6	0628B-1053-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.7	0.72	-	1
6	0628B-1053-SS-C-SO	0	0.5	7440-39-3	Barium	220	=	2.2	0.083	-	1
6	0628B-1053-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.41	J	0.55	0.045	-	1
6	0628B-1053-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.8	0.064	-	1
6	0628B-1053-SS-C-SO	0	0.5	7439-97-6	Mercury	0.018	J	0.019	0.0062	-	1
6	0628B-1093-SS-C-SO	0	0.5	7439-92-1	Lead	45	=	0.99	0.3	-	1
6	0628B-1075-SS-C-SO	0	0.5	7439-92-1	Lead	45	J	0.95	0.28	-	1
6	0628B-1054-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.97	J	2.5	0.65	-	1
6	0628B-1054-SS-C-SO	0	0.5	7440-39-3	Barium	200	=	2	0.075	-	1
6	0628B-1054-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.49	0.04	-	1
6	0628B-1054-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.4	0.057	-	1
6	0628B-1054-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.018	0.0059	-	1
6	0628B-1005REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	40	=	0.315	0.157	1.05	0.962
6	0628B-1061-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.3	J	2.7	0.72	-	1
6	0628B-1061-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	2.2	0.083	-	1
6	0628B-1061-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.067	J	0.55	0.045	-	1
6	0628B-1061-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.8	0.063	-	1
6	0628B-1061-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.018	0.0059	-	1
6	0628B-1080-SS-C-SO	0	0.5	7439-92-1	Lead	40	J	0.93	0.28	-	1
6	0628B-1088-SS-C-SO	0	0.5	7439-92-1	Lead	39	=	1	0.3	-	1
6	0628B-1062-SS-C-SO	0	0.5	7440-38-2	Arsenic	3	=	2.4	0.63	-	1
6	0628B-1062-SS-C-SO	0	0.5	7440-39-3	Barium	350	=	1.9	0.073	-	1
6	0628B-1062-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.4	0.056	-	1
6	0628B-1062-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.017	0.0057	-	1
6	0628B-1085-SS-C-SO	0	0.5	7439-92-1	Lead	38	J	0.97	0.29	-	1
6	0628B-1063-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.6	0.68	-	1
6	0628B-1063-SS-C-SO	0	0.5	7440-39-3	Barium	370	=	2.1	0.079	-	1
6	0628B-1063-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.091	J	0.52	0.042	-	1
6	0628B-1063-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.6	0.06	-	1
6	0628B-1063-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.018	0.006	-	1
6	0628B-1089-SS-C-SO	0	0.5	7439-92-1	Lead	38	=	0.87	0.26	-	1
6	0628B-1070-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.74	J	2.6	0.67	-	1
6	0628B-1070-SS-C-SO	0	0.5	7440-39-3	Barium	270	=	2	0.078	-	1
6	0628B-1070-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.059	-	1
6	0628B-1070-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.019	0.0061	-	1
6	0628B-1001REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	37.3	=	0.282	0.141	0.941	0.901
6	0628B-1058REC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	36.5	J	0.299	0.15	0.997	0.935
6	0628B-1047-SS-C-SODUP	0	0.5	7439-92-1	Lead	35	J	0.92	0.28	-	1
6	0628B-1071-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.92	J	2.8	0.74	-	1
6	0628B-1071-SS-C-SO	0	0.5	7440-39-3	Barium	310	=	2.2	0.085	-	1
6	0628B-1071-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.56	0.046	-	1
6	0628B-1071-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.9	0.065	-	1
6	0628B-1071-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.018	0.0058	-	1
6	0628B-1078-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.8	J	2.4	0.64	-	1
6	0628B-1078-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	1.9	0.073	-	1
6	0628B-1078-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.48	0.039	-	1
6	0628B-1078-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.4	0.056	-	1
6	0628B-1078-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.019	0.0063	-	1
6	0628B-1016-SS-C-SO	0	0.5	7439-92-1	Lead	34	=	0.86	0.26	-	1
6	0628B-1046-SS-C-SO	0	0.5	7439-92-1	Lead	34	J	0.86	0.26	-	1
6	0628B-1079-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.8	0.73	-	1
6	0628B-1079-SS-C-SO	0	0.5	7440-39-3	Barium	250	=	2.2	0.084	-	1
6	0628B-1079-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.55	0.045	-	1
6	0628B-1079-SS-C-SO	0	0.5	7440-47-3	Chromium	19	=	3.9	0.064	-	1
6	0628B-1079-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0086	J	0.017	0.0055	-	1
6	0628B-1099-SS-C-SO	0	0.5	7439-92-1	Lead	34	=	0.97	0.29	-	1
6	0628B-1080-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.4	J	2.6	0.68	-	1
6	0628B-1080-SS-C-SO	0	0.5	7440-39-3	Barium	280	=	2.1	0.079	-	1
6	0628B-1080-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.099	J	0.52	0.042	-	1
6	0628B-1087-SS-C-SO	0	0.5	7440-38-2	Arsenic	7.2	=	2.6	0.69	-	1
6	0628B-1087-SS-C-SO	0	0.5	7440-39-3	Barium	1600	J	2.1	0.079	-	1
6	0628B-1087-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.19	J	0.52	0.043	-	1
6	0628B-1087-SS-C-SO	0	0.5	7440-47-3	Chromium	4.8	=	3.6	0.06	-	1
6	0628B-1087-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.018	0.006	-	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	0628B-1068-SS-C-SO	0	0.5	7439-92-1	Lead	33	J	0.88	0.27	-	1
6	0628B-1097-SS-C-SO	0	0.5	7439-92-1	Lead	33	=	0.93	0.28	-	1
6	0628B-1088-SS-C-SO	0	0.5	7440-38-2	Arsenic	2	J	2.8	0.73	-	1
6	0628B-1088-SS-C-SO	0	0.5	7440-39-3	Barium	270	J	2.2	0.085	-	1
6	0628B-1088-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.56	0.046	-	1
6	0628B-1088-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.9	0.065	-	1
6	0628B-1088-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0081	J	0.017	0.0055	-	1
6	0628B-1021LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	32.6	=	0.305	0.152	1.02	0.952
6	0628B-1095-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.2	J	2.5	0.65	-	1
6	0628B-1095-SS-C-SO	0	0.5	7440-39-3	Barium	410	J	2	0.075	-	1
6	0628B-1095-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.094	J	0.49	0.04	-	1
6	0628B-1095-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.4	0.057	-	1
6	0628B-1095-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0067	J	0.02	0.0064	-	1
6	0628B-1064-SS-C-SO	0	0.5	7439-92-1	Lead	32	J	0.87	0.26	-	1
6	0628B-1095-SS-C-SODUP	0	0.5	7440-38-2	Arsenic	1.6	J	2.7	0.72	-	1
6	0628B-1095-SS-C-SODUP	0	0.5	7440-39-3	Barium	410	J	2.2	0.083	-	1
6	0628B-1095-SS-C-SODUP	0	0.5	7440-43-9	Cadmium	0.11	J	0.54	0.045	-	1
6	0628B-1095-SS-C-SODUP	0	0.5	7440-47-3	Chromium	12	=	3.8	0.063	-	1
6	0628B-1009LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	31.6	=	0.316	0.158	1.05	0.935
6	0628B-1096-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.5	J	2.7	0.73	-	1
6	0628B-1096-SS-C-SO	0	0.5	7440-39-3	Barium	450	J	2.2	0.084	-	1
6	0628B-1096-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.24	J	0.55	0.045	-	1
6	0628B-1096-SS-C-SO	0	0.5	7440-47-3	Chromium	17	=	3.8	0.064	-	1
6	0628B-1096-SS-C-SO	0	0.5	7439-97-6	Mercury	0.012	J	0.017	0.0056	-	1
6	0628B-1030-SS-C-SO	0	0.5	7439-97-6	Mercury	0.021	=	0.016	0.0053	-	1
6	0628B-1056-SS-C-SO	0	0.5	7439-92-1	Lead	30	J	0.84	0.25	-	1
6	0628B-1031-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.1	=	2.6	0.69	-	1
6	0628B-1031-SS-C-SO	0	0.5	7440-39-3	Barium	200	=	2.1	0.079	-	1
6	0628B-1031-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.52	0.043	-	1
6	0628B-1031-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.7	0.061	-	1
6	0628B-1031-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.016	0.0052	-	1
6	0628B-1098-SS-C-SO	0	0.5	7439-92-1	Lead	30	=	0.98	0.29	-	1
6	0628B-1031-SS-C-SODUP	0	0.5	7440-38-2	Arsenic	3.1	=	2.7	0.7	-	1
6	0628B-1031-SS-C-SODUP	0	0.5	7440-39-3	Barium	200	=	2.1	0.081	-	1
6	0628B-1031-SS-C-SODUP	0	0.5	7440-43-9	Cadmium	0.21	J	0.53	0.044	-	1
6	0628B-1031-SS-C-SODUP	0	0.5	7440-47-3	Chromium	14	=	3.7	0.062	-	1
6	0628B-1031-SS-C-SODUP	0	0.5	7439-97-6	Mercury	0.02	=	0.017	0.0054	-	1
6	0628B-1076-SS-C-SO	0	0.5	7439-92-1	Lead	29	J	1	0.3	-	1
6	0628B-1009LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	28.3	=	0.326	0.163	1.09	0.971
6	0628B-1021REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	28.2	=	0.28	0.14	0.933	0.885
6	0628B-1021REC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	28	=	0.275	0.138	0.917	0.87
6	0628B-1038-SS-C-SO	0	0.5	7440-39-3	Barium	300	=	2	0.074	-	1
6	0628B-1038-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.093	J	0.49	0.04	-	1
6	0628B-1038-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.4	0.057	-	1
6	0628B-1038-SS-C-SO	0	0.5	7439-97-6	Mercury	0.012	J	0.019	0.0063	-	1
6	0628B-1044-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.4	J	2.5	0.67	-	1
6	0628B-1044-SS-C-SO	0	0.5	7440-39-3	Barium	240	J	2	0.077	-	1
6	0628B-1044-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.51	0.041	-	1
6	0628B-1044-SS-C-SO	0	0.5	7440-47-3	Chromium	17	=	3.5	0.059	-	1
6	0628B-1044-SS-C-SO	0	0.5	7782-49-2	Selenium	0.95	J	3	0.87	-	1
6	0628B-1044-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.019	0.0061	-	1
6	0628B-1017REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	27.5	=	0.3	0.15	1	0.917
6	1641K-1547REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	25.4	=	0.133	0.266	0.887	0.87
6	0628B-1019-SS-C-SO	0	0.5	7439-92-1	Lead	25	=	0.86	0.26	-	1
6	0628B-1051-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.92	J	2.5	0.67	-	1
6	0628B-1051-SS-C-SO	0	0.5	7440-39-3	Barium	220	=	2	0.077	-	1
6	0628B-1051-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.23	J	0.5	0.041	-	1
6	0628B-1051-SS-C-SO	0	0.5	7440-47-3	Chromium	18	=	3.5	0.058	-	1
6	0628B-1051-SS-C-SO	0	0.5	7439-97-6	Mercury	0.02	=	0.017	0.0055	-	1
6	0628B-1084-SS-C-SO	0	0.5	7439-92-1	Lead	24	J	0.91	0.27	-	1
6	0628B-1052-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.6	0.68	-	1
6	0628B-1052-SS-C-SO	0	0.5	7440-39-3	Barium	500	=	2	0.078	-	1
6	0628B-1052-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.51	0.042	-	1
6	0628B-1052-SS-C-SO	0	0.5	7440-47-3	Chromium	9.8	=	3.6	0.059	-	1
6	0628B-1052-SS-C-SO	0	0.5	7439-97-6	Mercury	0.016	J	0.018	0.0059	-	1
6	0628B-1052-SS-C-SODUP	0	0.5	7440-38-2	Arsenic	1	J	2.4	0.63	-	1
6	0628B-1052-SS-C-SODUP	0	0.5	7440-39-3	Barium	200	=	1.9	0.073	-	1
6	0628B-1052-SS-C-SODUP	0	0.5	7440-43-9	Cadmium	0.15	J	0.48	0.039	-	1
6	0628B-1052-SS-C-SODUP	0	0.5	7440-47-3	Chromium	11	=	3.3	0.055	-	1
6	0628B-1052-SS-C-SODUP	0	0.5	7439-97-6	Mercury	0.017	J	0.018	0.006	-	1
6	0628B-1059-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.7	0.71	-	1
6	0628B-1059-SS-C-SO	0	0.5	7440-39-3	Barium	250	J	2.2	0.082	-	1
6	0628B-1059-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.54	0.044	-	1
6	0628B-1059-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.8	0.063	-	1



**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	0628B-1059-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	J	0.02	0.0067	-	1
6	0628B-1051LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	22.5	=	0.298	0.149	0.994	0.926
6	0628B-1017LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	21.6	=	0.315	0.157	1.05	0.962
6	0628B-1060-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.4	J	2.7	0.7	-	1
6	0628B-1060-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	2.1	0.081	-	1
6	0628B-1060-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.094	J	0.53	0.044	-	1
6	0628B-1060-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.7	0.062	-	1
6	0628B-1060-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	J	0.02	0.0064	-	1
6	0628B-1068-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.5	0.65	-	1
6	0628B-1068-SS-C-SO	0	0.5	7440-39-3	Barium	400	=	2	0.075	-	1
6	0628B-1068-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.057	J	0.49	0.04	-	1
6	0628B-1068-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.4	0.057	-	1
6	0628B-1068-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.019	0.0062	-	1
6	0628B-1069-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.6	0.68	-	1
6	0628B-1069-SS-C-SO	0	0.5	7440-39-3	Barium	250	=	2	0.078	-	1
6	0628B-1069-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.51	0.042	-	1
6	0628B-1069-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.059	-	1
6	0628B-1069-SS-C-SO	0	0.5	7439-97-6	Mercury	0.016	J	0.017	0.0056	-	1
6	1641K-1524REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.9	=	0.137	0.273	0.91	0.87
6	0628B-1031REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.7	=	0.303	0.152	1.01	0.952
6	0628B-1076-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.8	0.73	-	1
6	0628B-1076-SS-C-SO	0	0.5	7440-39-3	Barium	660	=	2.2	0.085	-	1
6	0628B-1076-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.56	0.046	-	1
6	0628B-1076-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.065	-	1
6	0628B-1076-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0089	J	0.019	0.0062	-	1
6	0628B-1002REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.6	=	0.291	0.146	0.97	0.952
6	0628B-1032LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.6	=	0.3	0.15	1	0.943
6	0628B-1077-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.7	J	2.6	0.67	-	1
6	0628B-1077-SS-C-SO	0	0.5	7440-39-3	Barium	320	=	2	0.078	-	1
6	0628B-1077-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.065	J	0.51	0.042	-	1
6	0628B-1077-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.059	-	1
6	0628B-1077-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.019	0.0063	-	1
6	0628B-1091-SS-C-SO	0	0.5	7439-92-1	Lead	19	=	0.96	0.29	-	1
6	0628B-1085-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.5	J	2.7	0.71	-	1
6	0628B-1085-SS-C-SO	0	0.5	7440-39-3	Barium	380	=	2.2	0.082	-	1
6	0628B-1085-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.54	0.044	-	1
6	0628B-1085-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.8	0.063	-	1
6	0628B-1085-SS-C-SO	0	0.5	7439-97-6	Mercury	0.01	J	0.018	0.0058	-	1
6	1641K-1527REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	18.9	=	0.145	0.291	0.968	0.952
6	0628B-1002LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	18.6	=	0.324	0.162	1.08	0.962
6	0628B-1086-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.2	J	2.6	0.69	-	1
6	0628B-1086-SS-C-SO	0	0.5	7440-39-3	Barium	260	=	2.1	0.08	-	1
6	0628B-1086-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.32	J	0.53	0.043	-	1
6	0628B-1086-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.7	0.061	-	1
6	0628B-1086-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0094	J	0.019	0.0062	-	1
6	0628B-1093-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.3	J	2.8	0.73	-	1
6	0628B-1093-SS-C-SO	0	0.5	7440-39-3	Barium	220	J	2.2	0.084	-	1
6	0628B-1093-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.16	J	0.55	0.045	-	1
6	0628B-1093-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.064	-	1
6	0628B-1093-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0089	J	0.018	0.0058	-	1
6	0628B-1094-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.1	J	2.8	0.73	-	1
6	0628B-1094-SS-C-SO	0	0.5	7440-39-3	Barium	340	J	2.2	0.084	-	1
6	0628B-1094-SS-C-SO	0	0.5	7440-43-9	Cadmium	1.5	=	0.55	0.045	-	1
6	0628B-1094-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.064	-	1
6	0628B-1094-SS-C-SO	0	0.5	7439-97-6	Mercury	0.01	J	0.018	0.006	-	1
6	0628B-1081-SS-C-SO	0	0.5	7439-92-1	Lead	18	J	0.95	0.28	-	1
6	0628B-1054LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	17.3	J	0.29	0.145	0.967	0.917
6	0628B-1027-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.5	0.67	-	1
6	0628B-1027-SS-C-SO	0	0.5	7440-39-3	Barium	330	=	2	0.077	-	1
6	0628B-1027-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.51	0.041	-	1
6	0628B-1027-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.5	0.059	-	1
6	0628B-1027-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.016	0.0051	-	1
6	0628B-1038-SS-C-SO	0	0.5	7439-92-1	Lead	17	J	0.88	0.26	-	1
6	0628B-1030-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.9	=	2.3	0.6	-	1
6	0628B-1030-SS-C-SO	0	0.5	7440-39-3	Barium	260	=	1.8	0.069	-	1
6	0628B-1030-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.39	J	0.46	0.037	-	1
6	0628B-1030-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.2	0.053	-	1
6	0628B-1072REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	16.7	=	0.316	0.158	1.05	0.971
6	0628B-1004REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	16.1	=	0.308	0.154	1.03	0.952
6	0628B-1037-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.5	0.66	-	1
6	0628B-1037-SS-C-SO	0	0.5	7440-39-3	Barium	310	=	2	0.076	-	1
6	0628B-1037-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.19	J	0.5	0.041	-	1
6	0628B-1037-SS-C-SO	0	0.5	7440-47-3	Chromium	17	=	3.5	0.058	-	1
6	0628B-1037-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.019	0.0061	-	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	0628B-1049-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.6	0.68	-	1
6	0628B-1049-SS-C-SO	0	0.5	7440-39-3	Barium	250	=	2.1	0.078	-	1
6	0628B-1049-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.51	0.042	-	1
6	0628B-1049-SS-C-SO	0	0.5	7440-47-3	Chromium	9.5	=	3.6	0.06	-	1
6	0628B-1049-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.016	0.0051	-	1
6	0628B-1050-SS-C-SO	0	0.5	7440-38-2	Arsenic	1	J	2.3	0.62	-	1
6	0628B-1050-SS-C-SO	0	0.5	7440-39-3	Barium	210	=	1.9	0.071	-	1
6	0628B-1050-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.3	J	0.47	0.038	-	1
6	0628B-1050-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.3	0.054	-	1
6	0628B-1057-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.4	J	2.9	0.77	-	1
6	0628B-1057-SS-C-SO	0	0.5	7440-39-3	Barium	340	=	2.3	0.089	-	1
6	0628B-1057-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.58	0.048	-	1
6	0628B-1057-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	4.1	0.068	-	1
6	0628B-1057-SS-C-SO	0	0.5	7439-97-6	Mercury	0.023	=	0.02	0.0065	-	1
6	0628B-1058-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.7	0.71	-	1
6	0628B-1058-SS-C-SO	0	0.5	7440-39-3	Barium	270	=	2.2	0.082	-	1
6	0628B-1058-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.54	0.044	-	1
6	0628B-1058-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.8	0.063	-	1
6	0628B-1058-SS-C-SO	0	0.5	7439-97-6	Mercury	0.023	=	0.019	0.0062	-	1
6	1641K-1549REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	15.2	=	0.138	0.275	0.918	0.901
6	0628B-1066-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.8	0.73	-	1
6	0628B-1066-SS-C-SO	0	0.5	7440-39-3	Barium	330	=	2.2	0.084	-	1
6	0628B-1066-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.49	J	0.55	0.045	-	1
6	0628B-1066-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.064	-	1
6	0628B-1066-SS-C-SO	0	0.5	7439-97-6	Mercury	0.015	J	0.02	0.0065	-	1
6	0628B-1095-SS-C-SODUP	0	0.5	7439-92-1	Lead	15	=	0.98	0.29	-	1
6	0628B-1067-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.6	0.68	-	1
6	0628B-1067-SS-C-SO	0	0.5	7440-39-3	Barium	340	=	2.1	0.078	-	1
6	0628B-1067-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.51	0.042	-	1
6	0628B-1067-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.059	-	1
6	0628B-1067-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.017	0.0056	-	1
6	0628B-1074-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.2	=	2.7	0.71	-	1
6	0628B-1074-SS-C-SO	0	0.5	7440-39-3	Barium	360	=	2.2	0.082	-	1
6	0628B-1074-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.2	J	0.54	0.044	-	1
6	0628B-1074-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.8	0.063	-	1
6	0628B-1074-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.019	0.0062	-	1
6	0628B-1059REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	14.8	=	0.298	0.149	0.993	0.935
6	0628B-1075-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.6	0.69	-	1
6	0628B-1075-SS-C-SO	0	0.5	7440-39-3	Barium	330	=	2.1	0.08	-	1
6	0628B-1075-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.53	0.043	-	1
6	0628B-1075-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.7	0.061	-	1
6	0628B-1075-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0093	J	0.018	0.006	-	1
6	0628B-1015REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	14.4	=	0.294	0.147	0.98	0.893
6	0628B-1051REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	14.1	=	0.306	0.153	1.02	0.962
6	0628B-1083-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.4	J	2.8	0.73	-	1
6	0628B-1083-SS-C-SO	0	0.5	7440-39-3	Barium	280	=	2.2	0.085	-	1
6	0628B-1083-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.22	J	0.56	0.046	-	1
6	0628B-1083-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.065	-	1
6	0628B-1083-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.02	0.0065	-	1
6	0628B-1084-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.4	J	2.5	0.66	-	1
6	0628B-1084-SS-C-SO	0	0.5	7440-39-3	Barium	240	=	2	0.076	-	1
6	0628B-1084-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.5	0.041	-	1
6	0628B-1084-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.5	0.058	-	1
6	0628B-1084-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0094	J	0.02	0.0065	-	1
6	0628B-1091-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.3	J	2.7	0.7	-	1
6	0628B-1091-SS-C-SO	0	0.5	7440-39-3	Barium	140	J	2.1	0.081	-	1
6	0628B-1091-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.073	J	0.53	0.044	-	1
6	0628B-1091-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.7	0.062	-	1
6	0628B-1091-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0065	J	0.019	0.0061	-	1
6	0628B-1092-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.7	J	2.7	0.71	-	1
6	0628B-1092-SS-C-SO	0	0.5	7440-39-3	Barium	270	J	2.1	0.081	-	1
6	0628B-1092-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.087	J	0.54	0.044	-	1
6	0628B-1092-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.7	0.062	-	1
6	0628B-1095-SS-C-SO	0	0.5	7439-92-1	Lead	14	=	0.89	0.27	-	1
6	0628B-1034-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.9	=	2.6	0.68	-	1
6	0628B-1034-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	2.1	0.078	-	1
6	0628B-1034-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.29	J	0.52	0.042	-	1
6	0628B-1034-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.6	0.06	-	1
6	0628B-1034-SS-C-SO	0	0.5	7439-97-6	Mercury	0.018	=	0.017	0.0055	-	1
6	0628B-1035-SS-C-SO	0	0.5	7440-38-2	Arsenic	4.5	=	2.3	0.61	-	1
6	0628B-1035-SS-C-SO	0	0.5	7440-39-3	Barium	150	=	1.8	0.07	-	1
6	0628B-1035-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.26	J	0.46	0.038	-	1
6	0628B-1035-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.2	0.053	-	1
6	0628B-1035-SS-C-SO	0	0.5	7439-97-6	Mercury	0.02	=	0.016	0.0052	-	1



**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	1641K-1527LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.8	=	0.137	0.275	0.916	0.901
6	0628B-1036-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.2	0.59	-	1
6	0628B-1036-SS-C-SO	0	0.5	7440-39-3	Barium	190	=	1.8	0.068	-	1
6	0628B-1036-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.24	J	0.45	0.037	-	1
6	0628B-1036-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.1	0.052	-	1
6	0628B-1036-SS-C-SO	0	0.5	7439-97-6	Mercury	0.013	J	0.016	0.0051	-	1
6	1641K-1533LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.6	=	0.136	0.273	0.91	0.885
6	0628B-1047-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.5	0.67	-	1
6	0628B-1047-SS-C-SO	0	0.5	7440-39-3	Barium	180	=	2	0.077	-	1
6	0628B-1047-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.14	J	0.51	0.042	-	1
6	0628B-1047-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.6	0.059	-	1
6	0628B-1047-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.019	0.006	-	1
6	1641K-1531REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.5	=	0.145	0.29	0.967	0.952
6	0628B-1047-SS-C-SODUP	0	0.5	7440-38-2	Arsenic	1.7	J	2.6	0.67	-	1
6	0628B-1047-SS-C-SODUP	0	0.5	7440-39-3	Barium	180	=	2	0.078	-	1
6	0628B-1047-SS-C-SODUP	0	0.5	7440-43-9	Cadmium	0.083	J	0.51	0.042	-	1
6	0628B-1047-SS-C-SODUP	0	0.5	7440-47-3	Chromium	13	=	3.6	0.059	-	1
6	0628B-1047-SS-C-SODUP	0	0.5	7439-97-6	Mercury	0.012	J	0.017	0.0054	-	1
6	0628B-1054REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.2	=	0.293	0.147	0.978	0.935
6	0628B-1048-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.6	J	2.5	0.66	-	1
6	0628B-1048-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	2	0.076	-	1
6	0628B-1048-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.13	J	0.5	0.041	-	1
6	0628B-1048-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.5	0.058	-	1
6	0628B-1048-SS-C-SO	0	0.5	7439-97-6	Mercury	0.012	J	0.018	0.0058	-	1
6	0628B-1055-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.3	J	2.8	0.74	-	1
6	0628B-1055-SS-C-SO	0	0.5	7440-39-3	Barium	240	=	2.2	0.085	-	1
6	0628B-1055-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.14	J	0.56	0.046	-	1
6	0628B-1055-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.9	0.065	-	1
6	0628B-1055-SS-C-SO	0	0.5	7439-97-6	Mercury	0.017	J	0.018	0.0057	-	1
6	0628B-1082-SS-C-SO	0	0.5	7439-92-1	Lead	13	J	0.96	0.29	-	1
6	0628B-1056-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.3	0.62	-	1
6	0628B-1056-SS-C-SO	0	0.5	7440-39-3	Barium	360	=	1.9	0.071	-	1
6	0628B-1056-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.055	J	0.47	0.038	-	1
6	0628B-1056-SS-C-SO	0	0.5	7440-47-3	Chromium	13	=	3.3	0.054	-	1
6	0628B-1056-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.018	0.0057	-	1
6	1641K-1541LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13	=	0.15	0.299	0.997	0.971
6	1641K-1546LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.8	=	0.145	0.291	0.968	0.952
6	1641K-1529LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.4	=	0.144	0.287	0.957	0.935
6	0628B-1064-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.8	J	2.4	0.64	-	1
6	0628B-1064-SS-C-SO	0	0.5	7440-39-3	Barium	290	=	1.9	0.073	-	1
6	0628B-1064-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.48	0.039	-	1
6	0628B-1064-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.4	0.056	-	1
6	0628B-1064-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0085	J	0.018	0.0059	-	1
6	0628B-1034LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.3	=	0.285	0.143	0.951	0.885
6	0628B-1065-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.8	J	2.6	0.69	-	1
6	0628B-1065-SS-C-SO	0	0.5	7440-39-3	Barium	160	=	2.1	0.079	-	1
6	0628B-1065-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.11	J	0.52	0.043	-	1
6	0628B-1065-SS-C-SO	0	0.5	7440-47-3	Chromium	6.9	=	3.6	0.06	-	1
6	0628B-1065-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.016	0.0054	-	1
6	0628B-1072-SS-C-SO	0	0.5	7440-22-4	Silver	0.61	J	1.6	0.17	-	1
6	0628B-1072-SS-C-SO	0	0.5	7440-39-3	Barium	320	J	2.1	0.08	-	1
6	0628B-1072-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.35	J	0.52	0.043	-	1
6	0628B-1072-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.7	0.061	-	1
6	0628B-1072-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.018	0.0059	-	1
6	0628B-1073-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.2	J	2.8	0.73	-	1
6	0628B-1073-SS-C-SO	0	0.5	7440-39-3	Barium	290	=	2.2	0.084	-	1
6	0628B-1073-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.38	J	0.55	0.045	-	1
6	0628B-1073-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.9	0.064	-	1
6	0628B-1073-SS-C-SO	0	0.5	7439-97-6	Mercury	0.019	=	0.018	0.0058	-	1
6	0628B-1080-SS-C-SO	0	0.5	7440-47-3	Chromium	14	=	3.6	0.06	-	1
6	0628B-1080-SS-C-SO	0	0.5	7439-97-6	Mercury	0.016	J	0.017	0.0056	-	1
6	0628B-1081-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.5	J	2.6	0.7	-	1
6	0628B-1081-SS-C-SO	0	0.5	7440-39-3	Barium	330	=	2.1	0.08	-	1
6	0628B-1081-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.14	J	0.53	0.043	-	1
6	0628B-1081-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.7	0.061	-	1
6	0628B-1081-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.017	0.0057	-	1
6	0628B-1034REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	11.9	=	0.271	0.136	0.905	0.855
6	0628B-1015LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	11.3	=	0.287	0.144	0.957	0.877
6	0628B-1082-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.7	J	2.7	0.71	-	1
6	0628B-1082-SS-C-SO	0	0.5	7440-39-3	Barium	260	=	2.1	0.081	-	1
6	0628B-1082-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.056	J	0.54	0.044	-	1
6	0628B-1082-SS-C-SO	0	0.5	7440-47-3	Chromium	16	=	3.8	0.062	-	1
6	0628B-1082-SS-C-SO	0	0.5	7439-97-6	Mercury	0.014	J	0.019	0.0061	-	1
6	0628B-1072LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	11.1	=	0.306	0.153	1.02	0.935

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
6	0628B-1089-SS-C-SO	0	0.5	7440-38-2	Arsenic	0.91	J	2.4	0.64	-	1
6	0628B-1089-SS-C-SO	0	0.5	7440-39-3	Barium	160	J	1.9	0.073	-	1
6	0628B-1089-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.14	J	0.48	0.04	-	1
6	0628B-1089-SS-C-SO	0	0.5	7440-47-3	Chromium	8.9	=	3.4	0.056	-	1
6	0628B-1089-SS-C-SO	0	0.5	7439-97-6	Mercury	0.011	J	0.019	0.0061	-	1
6	0628B-1090-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.1	J	2.6	0.67	-	1
6	0628B-1090-SS-C-SO	0	0.5	7440-39-3	Barium	250	J	2	0.078	-	1
6	0628B-1090-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.27	J	0.51	0.042	-	1
6	0628B-1090-SS-C-SO	0	0.5	7440-47-3	Chromium	12	=	3.6	0.059	-	1
6	0628B-1090-SS-C-SO	0	0.5	7439-97-6	Mercury	0.0089	J	0.019	0.0062	-	1
6	0628B-1097-SS-C-SO	0	0.5	7440-38-2	Arsenic	1.9	J	2.6	0.68	-	1
6	0628B-1097-SS-C-SO	0	0.5	7440-39-3	Barium	240	J	2.1	0.078	-	1
6	0628B-1097-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.12	J	0.51	0.042	-	1
6	0628B-1097-SS-C-SO	0	0.5	7440-47-3	Chromium	9.5	=	3.6	0.06	-	1
6	0628B-1097-SS-C-SO	0	0.5	7439-97-6	Mercury	0.03	=	0.018	0.006	-	1
6	0628B-1098-SS-C-SO	0	0.5	7440-38-2	Arsenic	2.4	J	2.7	0.72	-	1
6	0628B-1098-SS-C-SO	0	0.5	7440-39-3	Barium	340	J	2.2	0.082	-	1
6	0628B-1098-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.13	J	0.54	0.044	-	1
6	0628B-1098-SS-C-SO	0	0.5	7440-47-3	Chromium	15	=	3.8	0.063	-	1
6	0628B-1098-SS-C-SO	0	0.5	7439-97-6	Mercury	0.01	J	0.018	0.0058	-	1
6	1641K-1524LEC-1.0-1.5D-SO	1	1.5	7439-92-1	Lead	10.8	J	0.162	0.324	1.08	0.971
6	1641K-1547LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.86	=	0.137	0.275	0.917	0.901
6	0628B-1059LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.79	=	0.303	0.151	1.01	0.943
6	0628B-1031LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.55	=	0.31	0.155	1.03	0.971
6	0628B-1032REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.44	=	0.289	0.144	0.963	0.926
6	0628B-1092-SS-C-SO	0	0.5	7439-92-1	Lead	9.1	=	0.96	0.29	-	1
6	0628B-1077-SS-C-SO	0	0.5	7439-92-1	Lead	8.5	J	0.92	0.28	-	1
6	0628B-1099-SS-C-SO	0	0.5	7440-38-2	Arsenic	3.9	=	2.7	0.71	-	1
6	0628B-1099-SS-C-SO	0	0.5	7440-39-3	Barium	160	J	2.1	0.081	-	1
6	0628B-1099-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.15	J	0.54	0.044	-	1
6	0628B-1099-SS-C-SO	0	0.5	7440-47-3	Chromium	10	=	3.8	0.062	-	1
6	0628B-1099-SS-C-SO	0	0.5	7439-97-6	Mercury	0.017	J	0.019	0.0063	-	1
6	0628B-1100-SS-C-SO	0	0.5	7440-22-4	Silver	0.31	J	1.6	0.17	-	1
6	0628B-1100-SS-C-SO	0	0.5	7440-38-2	Arsenic	8.7	=	2.7	0.71	-	1
6	0628B-1100-SS-C-SO	0	0.5	7440-39-3	Barium	440	J	2.2	0.082	-	1
6	0628B-1100-SS-C-SO	0	0.5	7440-43-9	Cadmium	0.37	J	0.54	0.044	-	1
6	0628B-1100-SS-C-SO	0	0.5	7440-47-3	Chromium	11	=	3.8	0.063	-	1
6	1641K-1540LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	7.53	=	0.142	0.284	0.948	0.926
6	1641K-1540LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	7.37	=	0.132	0.264	0.88	0.862
6	0628B-1058LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	6.78	=	0.292	0.146	0.973	0.926
9	0918A-979SS-C-SO	0	0.5	7439-92-1	Lead	2650	J	5	1	-	5
9	0918A-981SS-C-SO	0	0.5	7439-92-1	Lead	1110	J	4.9	1	-	5
9	0918A-999SS-C-SO	0	0.5	7439-92-1	Lead	1110	J	5	1	-	5
9	0918A-1000SS-C-SO	0	0.5	7439-92-1	Lead	1070	J	4.8	1	-	5
9	0918A-994SS-C-SO	0	0.5	7439-92-1	Lead	860	J	4.9	1	-	5
9	0918A-998SS-C-SO	0	0.5	7439-92-1	Lead	703	J	5	1	-	5
9	0918A-989SS-C-SO	0	0.5	7439-92-1	Lead	645	J	5	1	-	5
9	0918A-980SS-C-SO	0	0.5	7439-92-1	Lead	577	J	4.9	1	-	5
9	0918A-993SS-C-SO	0	0.5	7439-92-1	Lead	536	J	4.9	1	-	5
9	0918A-992SS-C-SO	0	0.5	7439-92-1	Lead	476	J	5	1	-	5
9	0918A-988SS-C-SO	0	0.5	7439-92-1	Lead	440	J	5	1	-	5
9	0918A-986SS-C-SO	0	0.5	7439-92-1	Lead	429	J	5	1	-	5
9	0918A-983SS-C-SO	0	0.5	7439-92-1	Lead	427	J	4.9	1	-	5
9	0918A-996SS-C-SO	0	0.5	7439-92-1	Lead	413	J	4.9	1	-	5
9	0918A-987SS-C-SO	0	0.5	7439-92-1	Lead	322	J	5	1	-	5
9	0918A-985SS-C-SO	0	0.5	7439-92-1	Lead	321	J	5	1	-	5
9	0918A-991SS-C-SO	0	0.5	7439-92-1	Lead	307	J	4.9	1	-	5
9	0918A-984SS-C-SO	0	0.5	7439-92-1	Lead	300	J	5	1	-	5
9	0918A-990SS-C-SO	0	0.5	7439-92-1	Lead	242	J	4.9	1	-	5
9	0918A-978SS-C-SO	0	0.5	7439-92-1	Lead	165	J	5	1	-	5
9	0918A-997SS-C-SO	0	0.5	7439-92-1	Lead	148	=	0.98	0.21	-	1
9	0918A-799SS-C-SO	0	0.5	7439-92-1	Lead	139	=	0.98	0.21	-	1
9	0918A-995SS-C-SO	0	0.5	7439-92-1	Lead	119	J	5	1	-	5
9	0918A-982SS-C-SO	0	0.5	7439-92-1	Lead	72.6	J	4.9	1	-	5
16	1641-K1525R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.018	=	-	0.006	0.018	1
16	1641-K1545L-SS-D-SO	0	0.25	7439-92-1	Lead	4200	J	-	1.5	5.1	5
16	1641-K1540L-SS-D-SO	0	0.25	7439-92-1	Lead	960	J	-	0.27	0.9	1
16	1641-K1526L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.9	J	-	0.61	2.3	1
16	1641-K1526L-SS-D-SO	0	0.25	7440-39-3	Barium	250	=	-	0.07	1.9	1
16	1641-K1526L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.21	J	-	0.038	0.46	1
16	1641-K1526L-SS-D-SO	0	0.25	7440-47-3	Chromium	11	J	-	0.054	3.2	1
16	1641-K1526L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.014	J	-	0.0064	0.02	1
16	1641-K1528R-SS-D-SO	0	0.25	7439-92-1	Lead	960	J	-	0.28	0.93	1
16	1641-K1526R-SS-D-SO	0	0.25	7440-22-4	Silver	0.14	J	-	0.14	1.3	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
16	1641-K1526R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.59	2.2	1
16	1641-K1526R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.068	1.8	1
16	1641-K1526R-SS-D-SO	0	0.25	7440-43-9	Cadmium	1.1	=	-	0.037	0.45	1
16	1641-K1526R-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.052	3.1	1
16	1641-K1526R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.019	J	-	0.0069	0.021	1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	830	J	-	0.24	0.8	1
16	1641-K1527R-SS-D-SO	0	0.25	7439-92-1	Lead	810	J	-	0.25	0.82	1
16	1641-K1533L-SS-D-SO	0	0.25	7439-92-1	Lead	780	J	-	0.28	0.95	1
16	1641-K1531L-SS-D-SO	0	0.25	7440-39-3	Barium	262	=	-	0.0098	0.054	1
16	1641-K1531L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.082	=	-	0.0065	0.044	1
16	1641-K1531L-SS-D-SO	0	0.25	7440-47-3	Chromium	7.5	=	-	0.025	0.15	1
16	1641-K1531L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.011	J	-	0.0037	0.015	1
16	1641-K1525L-SS-D-SO	0	0.25	7439-92-1	Lead	640	J	-	0.27	0.88	1
16	1641-K1531R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.5	=	-	0.66	2.5	1
16	1641-K1531R-SS-D-SO	0	0.25	7440-39-3	Barium	220	J	-	0.076	2	1
16	1641-K1531R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.62	=	-	0.041	0.5	1
16	1641-K1531R-SS-D-SO	0	0.25	7440-47-3	Chromium	10	J	-	0.058	3.5	1
16	1641-K1531R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.012	J	-	0.0072	0.022	1
16	1641-K1546L-SS-D-SO	0	0.25	7439-92-1	Lead	540	=	-	0.29	0.97	1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	1.1	J	-	0.64	2.4	1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	110	J	-	0.074	1.9	1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.23	J	-	0.04	0.49	1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	5.4	J	-	0.056	3.4	1
16	1641-K1524L-SS-D-SO	0	0.25	7439-92-1	Lead	530	J	-	0.26	0.87	1
16	1641-K1524R-SS-D-SO	0	0.25	7439-92-1	Lead	530	J	-	0.28	0.92	1
16	1641-K1536L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.2	J	-	0.67	2.6	1
16	1641-K1536L-SS-D-SO	0	0.25	7440-39-3	Barium	410	=	-	0.078	2	1
16	1641-K1536L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.23	J	-	0.042	0.51	1
16	1641-K1536L-SS-D-SO	0	0.25	7440-47-3	Chromium	22	J	-	0.059	3.6	1
16	1641-K1536L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.016	J	-	0.0068	0.021	1
16	1641-K1529L-SS-D-SO	0	0.25	7439-92-1	Lead	530	J	-	0.28	0.94	1
16	1641-K1536R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.6	J	-	0.7	2.6	1
16	1641-K1536R-SS-D-SO	0	0.25	7440-39-3	Barium	490	=	-	0.08	2.1	1
16	1641-K1536R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.3	J	-	0.043	0.53	1
16	1641-K1536R-SS-D-SO	0	0.25	7440-47-3	Chromium	22	J	-	0.061	3.7	1
16	1641-K1536R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.013	J	-	0.0066	0.02	1
16	1641-K1543R-SS-D-SO	0	0.25	7439-92-1	Lead	510	J	-	0.28	0.94	1
16	1641-K1540R-SS-D-SO	0	0.25	7440-39-3	Barium	320	=	-	0.07	1.8	1
16	1641-K1540R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.37	J	-	0.038	0.46	1
16	1641-K1540R-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.053	3.2	1
16	1641-K1540R-SS-D-SO	0	0.25	7782-49-2	Selenium	0.98	J	-	0.79	2.8	1
16	1641-K1540R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.023	=	-	0.0063	0.019	1
16	1641-K1531R-SS-D-SO	0	0.25	7439-92-1	Lead	490	J	-	0.27	0.9	1
16	1641-K1547L-SS-D-SO	0	0.25	7439-92-1	Lead	490	=	-	0.25	0.84	1
16	1641-K1541L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.63	2.4	1
16	1641-K1541L-SS-D-SO	0	0.25	7440-39-3	Barium	330	J	-	0.072	1.9	1
16	1641-K1541L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.4	J	-	0.039	0.47	1
16	1641-K1541L-SS-D-SO	0	0.25	7440-47-3	Chromium	15	J	-	0.055	3.3	1
16	1641-K1541L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.011	J	-	0.0068	0.021	1
16	1641-K1541L-SS-D-SO	0	0.25	7439-92-1	Lead	480	J	-	0.26	0.85	1
16	1641-K1541R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.59	2.3	1
16	1641-K1541R-SS-D-SO	0	0.25	7440-39-3	Barium	380	=	-	0.068	1.8	1
16	1641-K1541R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.41	J	-	0.037	0.45	1
16	1641-K1541R-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.052	3.2	1
16	1641-K1541R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0098	J	-	0.0064	0.02	1
16	1641-K1547R-SS-D-SO	0	0.25	7439-92-1	Lead	470	=	-	0.26	0.88	1
16	1641-K1549R-SS-D-SO	0	0.25	7439-92-1	Lead	450	J	-	0.24	0.8	1
16	1641-K1545R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.8	=	-	0.71	2.7	1
16	1641-K1545R-SS-D-SO	0	0.25	7440-39-3	Barium	370	=	-	0.082	2.2	1
16	1641-K1545R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.38	J	-	0.044	0.54	1
16	1641-K1545R-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.062	3.8	1
16	1641-K1545R-SS-D-SO	0	0.25	7782-49-2	Selenium	1.1	J	-	0.93	3.2	1
16	1641K-1524LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	432	=	0.147	0.294	0.979	0.943
16	1641-K1544R-SS-D-SO	0	0.25	7439-92-1	Lead	350	J	-	0.28	0.95	1
16	1641-K1546L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.6	J	-	0.71	2.7	1
16	1641-K1546L-SS-D-SO	0	0.25	7440-39-3	Barium	360	=	-	0.082	2.2	1
16	1641-K1546L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.46	J	-	0.044	0.54	1
16	1641-K1546L-SS-D-SO	0	0.25	7440-47-3	Chromium	14	=	-	0.063	3.8	1
16	1641-K1546L-SS-D-SO	0	0.25	7782-49-2	Selenium	1.1	J	-	0.93	3.2	1
16	1641-K1546L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.012	J	-	0.007	0.022	1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	350	J	-	0.26	0.86	1
16	1641-K1546R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.6	J	-	0.62	2.4	1
16	1641-K1546R-SS-D-SO	0	0.25	7440-39-3	Barium	470	=	-	0.072	1.9	1
16	1641-K1546R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.39	J	-	0.039	0.47	1



**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
16	1641-K1546R-SS-D-SO	0	0.25	7440-47-3	Chromium	14	=	-	0.055	3.3	1
16	1641-K1524R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.4	J	-	0.68	2.6	1
16	1641-K1524R-SS-D-SO	0	0.25	7440-39-3	Barium	320	=	-	0.078	2.1	1
16	1641-K1524R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.41	J	-	0.042	0.51	1
16	1641-K1524R-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.06	3.6	1
16	1641-K1524R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0064	0.02	1
16	1641-K1543L-SS-D-SO	0	0.25	7439-92-1	Lead	340	J	-	0.27	0.9	1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2.1	J	-	0.6	2.3	1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	320	J	-	0.069	1.8	1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.36	J	-	0.037	0.45	1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	12	J	-	0.053	3.2	1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7782-49-2	Selenium	0.97	J	-	0.78	2.7	1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.011	J	-	0.0065	0.02	1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	330	J	-	0.25	0.83	1
16	1641-K1538R-SS-D-SO	0	0.25	7439-92-1	Lead	280	J	-	0.25	0.83	1
16	1641-K1525L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.1	=	-	0.65	2.5	1
16	1641-K1525L-SS-D-SO	0	0.25	7440-39-3	Barium	310	=	-	0.075	2	1
16	1641-K1525L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.4	J	-	0.04	0.49	1
16	1641-K1525L-SS-D-SO	0	0.25	7440-47-3	Chromium	15	J	-	0.057	3.4	1
16	1641-K1525L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.0069	0.021	1
16	1641-K1526R-SS-D-SO	0	0.25	7439-92-1	Lead	260	J	-	0.24	0.81	1
16	1641-K1525R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.6	2.3	1
16	1641-K1525R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.069	1.8	1
16	1641-K1525R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.3	J	-	0.037	0.45	1
16	1641-K1525R-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.053	3.2	1
16	1641-K1539R-SS-D-SO	0	0.25	7439-92-1	Lead	260	J	-	0.26	0.87	1
16	1641-K1529R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.8	=	-	0.65	2.5	1
16	1641-K1529R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.075	2	1
16	1641-K1529R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.38	J	-	0.04	0.49	1
16	1641-K1529R-SS-D-SO	0	0.25	7440-47-3	Chromium	29	J	-	0.057	3.5	1
16	1641-K1529R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.019	J	-	0.0068	0.021	1
16	1641-K1549L-SS-D-SO	0	0.25	7439-92-1	Lead	260	J	-	0.29	0.96	1
16	1641-K1534L-SS-D-SO	0	0.25	7439-92-1	Lead	250	J	-	0.27	0.91	1
16	1641-K1530L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.5	J	-	0.62	2.3	1
16	1641-K1530L-SS-D-SO	0	0.25	7440-39-3	Barium	310	=	-	0.071	1.9	1
16	1641-K1530L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.24	J	-	0.038	0.47	1
16	1641-K1530L-SS-D-SO	0	0.25	7440-47-3	Chromium	17	J	-	0.054	3.3	1
16	1641-K1530L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.014	J	-	0.0063	0.019	1
16	1641K-1545LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	242	=	0.139	0.278	0.927	0.901
16	1641-K1530R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.5	J	-	0.58	2.2	1
16	1641-K1530R-SS-D-SO	0	0.25	7440-39-3	Barium	260	=	-	0.067	1.8	1
16	1641-K1530R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.24	J	-	0.036	0.44	1
16	1641-K1530R-SS-D-SO	0	0.25	7440-47-3	Chromium	19	J	-	0.051	3.1	1
16	1641-K1530R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.006	0.019	1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	240	=	-	0.3	0.99	1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2	J	-	0.55	2.1	1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	350	=	-	0.064	1.7	1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	3.8	=	-	0.034	0.42	1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	10	J	-	0.049	2.9	1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0075	J	-	0.0063	0.019	1
16	1641-K1542L-SS-D-SO	0	0.25	7439-92-1	Lead	230	J	-	0.24	0.81	1
16	1641-K1529R-SS-D-SO	0	0.25	7439-92-1	Lead	210	J	-	0.27	0.89	1
16	1641-K1535L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.9	=	-	0.65	2.5	1
16	1641-K1535L-SS-D-SO	0	0.25	7440-39-3	Barium	380	=	-	0.075	2	1
16	1641-K1535L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.26	J	-	0.041	0.49	1
16	1641-K1535L-SS-D-SO	0	0.25	7440-47-3	Chromium	16	J	-	0.057	3.5	1
16	1641-K1535L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.018	J	-	0.0062	0.019	1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	210	J	-	0.27	0.9	1
16	1641-K1535R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.6	=	-	0.65	2.4	1
16	1641-K1535R-SS-D-SO	0	0.25	7440-39-3	Barium	500	=	-	0.074	2	1
16	1641-K1535R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.42	J	-	0.04	0.49	1
16	1641-K1535R-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.057	3.4	1
16	1641-K1535R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.02	=	-	0.006	0.018	1
16	1641-K1532R-SS-D-SO	0	0.25	7439-92-1	Lead	210	J	-	0.27	0.91	1
16	1641-K1539R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.4	=	-	0.64	2.4	1
16	1641-K1539R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.073	1.9	1
16	1641-K1539R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.57	=	-	0.04	0.48	1
16	1641-K1539R-SS-D-SO	0	0.25	7440-47-3	Chromium	20	J	-	0.056	3.4	1
16	1641-K1539R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.023	=	-	0.0066	0.02	1
16	1641-K1538L-SS-D-SO	0	0.25	7439-92-1	Lead	200	J	-	0.26	0.86	1
16	1641-K1550R-SS-D-SO	0	0.25	7439-92-1	Lead	200	J	-	0.28	0.92	1
16	1641-K1540L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.7	=	-	0.66	2.5	1
16	1641-K1540L-SS-D-SO	0	0.25	7440-39-3	Barium	310	=	-	0.076	2	1
16	1641-K1540L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.58	=	-	0.041	0.5	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
16	1641-K1540L-SS-D-SO	0	0.25	7440-47-3	Chromium	16	J	-	0.058	3.5	1
16	1641-K1540L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.018	=	-	0.006	0.018	1
16	1641-K1535R-SS-D-SO	0	0.25	7439-92-1	Lead	190	J	-	0.26	0.88	1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2.2	J	-	0.66	2.5	1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	310	=	-	0.076	2	1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.34	J	-	0.041	0.5	1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	13	J	-	0.058	3.5	1
16	1641-K1540L-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0069	J	-	0.0065	0.02	1
16	1641-K1542R-SS-D-SO	0	0.25	7439-92-1	Lead	190	J	-	0.25	0.83	1
16	1641-K1540R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.5	=	-	0.61	2.3	1
16	1641-K1524R-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	180	J	-	0.25	0.82	1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2	J	-	0.61	2.3	1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	370	=	-	0.07	1.8	1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.31	J	-	0.038	0.46	1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	14	J	-	0.053	3.2	1
16	1641-K1544L-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.013	J	-	0.0057	0.018	1
16	1641-K1535L-SS-D-SO	0	0.25	7439-92-1	Lead	180	J	-	0.27	0.89	1
16	1641-K1544R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.8	J	-	0.7	2.6	1
16	1641-K1544R-SS-D-SO	0	0.25	7440-39-3	Barium	400	=	-	0.08	2.1	1
16	1641-K1544R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.37	J	-	0.043	0.53	1
16	1641-K1544R-SS-D-SO	0	0.25	7440-47-3	Chromium	22	J	-	0.061	3.7	1
16	1641-K1544R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.01	J	-	0.0063	0.019	1
16	1641-K1534R-SS-D-SO	0	0.25	7439-92-1	Lead	180	J	-	0.24	0.79	1
16	1641-K1548L-SS-D-SO	0	0.25	7439-92-1	Lead	180	J	-	0.26	0.87	1
16	1641-K1545L-SS-D-SO	0	0.25	7440-39-3	Barium	550	J	-	0.43	11	5
16	1641-K1545L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.39	J	-	0.046	0.57	1
16	1641-K1545L-SS-D-SO	0	0.25	7440-47-3	Chromium	900	J	-	0.066	4	1
16	1641-K1545L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0078	J	-	0.0076	0.023	1
16	1641-K1545R-SS-D-SO	0	0.25	7439-92-1	Lead	170	J	-	0.29	0.97	1
16	1641-K1534R-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	170	J	-	0.23	0.76	1
16	1641-K1524L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.64	2.4	1
16	1641-K1524L-SS-D-SO	0	0.25	7440-39-3	Barium	300	=	-	0.073	1.9	1
16	1641-K1524L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.39	J	-	0.04	0.48	1
16	1641-K1524L-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.056	3.4	1
16	1641-K1524L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0068	0.021	1
16	1641-K1539L-SS-D-SO	0	0.25	7439-92-1	Lead	170	J	-	0.25	0.84	1
16	1641-K1527L-SS-D-SO	0	0.25	7439-92-1	Lead	170	J	-	0.28	0.92	1
16	1641-K1528L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.2	J	-	0.63	2.4	1
16	1641-K1528L-SS-D-SO	0	0.25	7440-39-3	Barium	350	J	-	0.072	1.9	1
16	1641-K1528L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.31	J	-	0.039	0.48	1
16	1641-K1528L-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.055	3.3	1
16	1641-K1528L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0068	0.021	1
16	1641-K1541R-SS-D-SO	0	0.25	7439-92-1	Lead	160	J	-	0.24	0.81	1
16	1641-K1528R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.8	=	-	0.68	2.6	1
16	1641-K1528R-SS-D-SO	0	0.25	7440-39-3	Barium	370	=	-	0.079	2.1	1
16	1641-K1528R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.53	=	-	0.043	0.52	1
16	1641-K1528R-SS-D-SO	0	0.25	7440-47-3	Chromium	10	J	-	0.06	3.6	1
16	1641-K1528R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.022	=	-	0.0063	0.019	1
16	1641-K1525R-SS-D-SO	0	0.25	7439-92-1	Lead	160	J	-	0.25	0.82	1
16	1641-K1546R-SS-D-SO	0	0.25	7439-92-1	Lead	150	=	-	0.25	0.85	1
16	1641-K1529L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.8	J	-	0.69	2.6	1
16	1641-K1529L-SS-D-SO	0	0.25	7440-39-3	Barium	300	=	-	0.079	2.1	1
16	1641-K1529L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.4	J	-	0.043	0.52	1
16	1641-K1529L-SS-D-SO	0	0.25	7440-47-3	Chromium	19	J	-	0.06	3.6	1
16	1641-K1529L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.014	J	-	0.0064	0.02	1
16	1641-K1533L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.44	J	-	0.043	0.53	1
16	1641-K1533L-SS-D-SO	0	0.25	7440-47-3	Chromium	17	J	-	0.061	3.7	1
16	1641-K1533L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.019	J	-	0.0064	0.02	1
16	1641K-1525LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	131	=	0.145	0.29	0.968	0.926
16	1641-K1533R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	=	-	0.61	2.3	1
16	1641-K1533R-SS-D-SO	0	0.25	7440-39-3	Barium	290	=	-	0.07	1.8	1
16	1641-K1533R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.28	J	-	0.038	0.46	1
16	1641-K1533R-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.053	3.2	1
16	1641-K1533R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.0059	0.018	1
16	1641K-1525LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	131	=	0.134	0.267	0.891	0.862
16	1641-K1530L-SS-D-SO	0	0.25	7439-92-1	Lead	130	J	-	0.25	0.84	1
16	1641-K1534L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.6	J	-	0.67	2.5	1
16	1641-K1534L-SS-D-SO	0	0.25	7440-39-3	Barium	290	=	-	0.077	2	1
16	1641-K1534L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.36	J	-	0.041	0.51	1
16	1641-K1534L-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.059	3.5	1
16	1641-K1534L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.007	0.021	1
16	1641-K1550L-SS-D-SO	0	0.25	7439-92-1	Lead	130	J	-	0.27	0.89	1
16	1641-K1534R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.5	=	-	0.58	2.2	1
16	1641-K1534R-SS-D-SO	0	0.25	7440-39-3	Barium	460	=	-	0.067	1.8	1



**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
16	1641-K1534R-SS-D-SO	0	0.25	7440-43-9	Cadmium	4.8	=	-	0.036	0.44	1
16	1641-K1534R-SS-D-SO	0	0.25	7440-47-3	Chromium	11	J	-	0.051	3.1	1
16	1641-K1534R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.016	J	-	0.006	0.018	1
16	1641-K1540R-SS-D-SO	0	0.25	7439-92-1	Lead	120	J	-	0.25	0.83	1
16	1641-K1538L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.5	J	-	0.63	2.4	1
16	1641-K1538L-SS-D-SO	0	0.25	7440-39-3	Barium	310	J	-	0.073	1.9	1
16	1641-K1538L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.33	J	-	0.039	0.48	1
16	1641-K1538L-SS-D-SO	0	0.25	7440-47-3	Chromium	21	J	-	0.055	3.3	1
16	1641-K1538L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.015	J	-	0.0071	0.022	1
16	1641-K1533R-SS-D-SO	0	0.25	7439-92-1	Lead	120	J	-	0.25	0.83	1
16	1641-K1538R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.7	J	-	0.61	2.3	1
16	1641-K1538R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.07	1.8	1
16	1641-K1538R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.35	J	-	0.038	0.46	1
16	1641-K1538R-SS-D-SO	0	0.25	7440-47-3	Chromium	20	J	-	0.053	3.2	1
16	1641-K1538R-SS-D-SO	0	0.25	7782-49-2	Selenium	0.8	J	-	0.79	2.8	1
16	1641-K1538R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.037	=	-	0.007	0.021	1
16	1641-K1536R-SS-D-SO	0	0.25	7439-92-1	Lead	110	J	-	0.28	0.95	1
16	1641-K1532L-SS-D-SO	0	0.25	7439-92-1	Lead	110	J	-	0.28	0.93	1
16	1641-K1539L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.61	2.3	1
16	1641-K1539L-SS-D-SO	0	0.25	7440-39-3	Barium	350	=	-	0.071	1.9	1
16	1641-K1539L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.38	J	-	0.038	0.47	1
16	1641-K1539L-SS-D-SO	0	0.25	7440-47-3	Chromium	20	J	-	0.054	3.3	1
16	1641-K1539L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0061	0.019	1
16	1641K-1543REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	104	=	0.143	0.285	0.951	0.926
16	1641-K1543L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.1	J	-	0.66	2.5	1
16	1641-K1543L-SS-D-SO	0	0.25	7440-39-3	Barium	480	J	-	0.076	2	1
16	1641-K1543L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.38	J	-	0.041	0.5	1
16	1641-K1543L-SS-D-SO	0	0.25	7440-47-3	Chromium	20	J	-	0.058	3.5	1
16	1641-K1543L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0098	J	-	0.0061	0.019	1
16	1641-K1548R-SS-D-SO	0	0.25	7439-92-1	Lead	100	J	-	0.28	0.95	1
16	1641-K1543R-SS-D-SO	0	0.25	7440-38-2	Arsenic	6.1	=	-	0.69	2.6	1
16	1641-K1543R-SS-D-SO	0	0.25	7440-39-3	Barium	400	=	-	0.079	2.1	1
16	1641-K1543R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.5	J	-	0.043	0.52	1
16	1641-K1543R-SS-D-SO	0	0.25	7440-47-3	Chromium	30	J	-	0.061	3.7	1
16	1641-K1543R-SS-D-SO	0	0.25	7782-49-2	Selenium	1.1	J	-	0.9	3.1	1
16	1641-K1531R-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	87	J	-	0.26	0.87	1
16	1641-K1528L-SS-D-SO	0	0.25	7439-92-1	Lead	74	J	-	0.26	0.86	1
16	1641-K1544L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.69	2.6	1
16	1641-K1544L-SS-D-SO	0	0.25	7440-39-3	Barium	360	=	-	0.079	2.1	1
16	1641-K1544L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.26	J	-	0.043	0.52	1
16	1641-K1544L-SS-D-SO	0	0.25	7440-47-3	Chromium	18	J	-	0.06	3.6	1
16	1641-K1544L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.013	J	-	0.0062	0.019	1
16	1641-K1544L-SS-D-SO	0	0.25	7439-92-1	Lead	73	J	-	0.28	0.93	1
16	1641-K1527L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.4	=	-	0.67	2.6	1
16	1641-K1527L-SS-D-SO	0	0.25	7440-39-3	Barium	260	=	-	0.078	2	1
16	1641-K1527L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.54	=	-	0.042	0.51	1
16	1641-K1527L-SS-D-SO	0	0.25	7440-47-3	Chromium	16	J	-	0.059	3.6	1
16	1641-K1527L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0061	0.019	1
16	1641-K1530R-SS-D-SO	0	0.25	7439-92-1	Lead	66	J	-	0.24	0.8	1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2.8	=	-	0.59	2.2	1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	270	=	-	0.068	1.8	1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.54	=	-	0.037	0.45	1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	15	J	-	0.052	3.1	1
16	1641-K1527L-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0095	J	-	0.0057	0.018	1
16	1641-K1531L-SS-D-SO	0	0.25	7439-92-1	Lead	59.1	=	-	0.044	0.27	1
16	1641-K1527R-SS-D-SO	0	0.25	7440-38-2	Arsenic	4	=	-	0.6	2.3	1
16	1641-K1527R-SS-D-SO	0	0.25	7440-39-3	Barium	280	=	-	0.069	1.8	1
16	1641-K1527R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.64	=	-	0.037	0.46	1
16	1641-K1527R-SS-D-SO	0	0.25	7440-47-3	Chromium	15	J	-	0.053	3.2	1
16	1641-K1527R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.016	J	-	0.006	0.018	1
16	1641-K1526L-SS-D-SO	0	0.25	7439-92-1	Lead	58	J	-	0.25	0.83	1
16	1641K-1528REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	52	=	0.144	0.287	0.958	0.935
16	1641-K1532L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.7	J	-	0.68	2.6	1
16	1641-K1532L-SS-D-SO	0	0.25	7440-39-3	Barium	330	=	-	0.079	2.1	1
16	1641-K1532L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.23	J	-	0.042	0.52	1
16	1641-K1532L-SS-D-SO	0	0.25	7440-47-3	Chromium	18	J	-	0.06	3.6	1
16	1641-K1532L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.013	J	-	0.007	0.021	1
16	1641-K1537R-SS-D-SO	0	0.25	7439-92-1	Lead	45	J	-	0.24	0.79	1
16	1641-K1532R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.67	2.5	1
16	1641-K1532R-SS-D-SO	0	0.25	7440-39-3	Barium	260	=	-	0.077	2	1
16	1641-K1532R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.43	J	-	0.042	0.51	1
16	1641-K1532R-SS-D-SO	0	0.25	7440-47-3	Chromium	17	J	-	0.059	3.5	1
16	1641-K1532R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0069	0.021	1
16	1641-K1537L-SS-D-SO	0	0.25	7439-92-1	Lead	41	J	-	0.26	0.86	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
16	1641-K1536L-SS-D-SO	0	0.25	7439-92-1	Lead	37	J	-	0.28	0.92	1
16	1641-K1533L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.6	=	-	0.69	2.6	1
16	1641-K1533L-SS-D-SO	0	0.25	7440-39-3	Barium	270	=	-	0.08	2.1	1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7439-92-1	Lead	37	J	-	0.24	0.8	1
16	1641-K1537L-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.1	J	-	0.63	2.4	1
16	1641-K1537L-SS-D-SO	0	0.25	7440-39-3	Barium	220	=	-	0.073	1.9	1
16	1641-K1537L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.19	J	-	0.039	0.48	1
16	1641-K1537L-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.056	3.4	1
16	1641-K1537L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.013	J	-	0.0059	0.018	1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	1.4	J	-	0.59	2.2	1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	260	=	-	0.068	1.8	1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.16	J	-	0.037	0.45	1
16	1641-K1537L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	9.5	J	-	0.052	3.1	1
16	1641-K1537R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.3	J	-	0.58	2.2	1
16	1641-K1537R-SS-D-SO	0	0.25	7440-39-3	Barium	310	=	-	0.067	1.8	1
16	1641-K1537R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.28	J	-	0.036	0.44	1
16	1641-K1537R-SS-D-SO	0	0.25	7440-47-3	Chromium	17	J	-	0.051	3.1	1
16	1641-K1537R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0061	0.019	1
16	1641K-1547REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	25.4	=	0.133	0.266	0.887	0.87
16	1641-K1542L-SS-D-SO	0	0.25	7440-38-2	Arsenic	3.2	=	-	0.6	2.3	1
16	1641-K1542L-SS-D-SO	0	0.25	7440-39-3	Barium	250	=	-	0.069	1.8	1
16	1641-K1542L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.49	=	-	0.037	0.45	1
16	1641-K1542L-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.052	3.2	1
16	1641-K1542L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.007	J	-	0.0064	0.02	1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	3.2	=	-	0.63	2.4	1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	240	=	-	0.072	1.9	1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.52	=	-	0.039	0.48	1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	10	J	-	0.055	3.3	1
16	1641-K1542L-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0083	J	-	0.0058	0.018	1
16	1641-K1542R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.7	J	-	0.61	2.3	1
16	1641-K1542R-SS-D-SO	0	0.25	7440-39-3	Barium	140	=	-	0.071	1.9	1
16	1641-K1542R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.31	J	-	0.038	0.46	1
16	1641-K1542R-SS-D-SO	0	0.25	7440-47-3	Chromium	8.1	J	-	0.054	3.2	1
16	1641-K1547L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.1	J	-	0.62	2.3	1
16	1641-K1547L-SS-D-SO	0	0.25	7440-39-3	Barium	360	=	-	0.071	1.9	1
16	1641-K1547L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.57	J	-	0.038	0.47	1
16	1641-K1547L-SS-D-SO	0	0.25	7440-47-3	Chromium	11	=	-	0.054	3.3	1
16	1641-K1547L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0069	J	-	0.0062	0.019	1
16	1641-K1547R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.65	2.4	1
16	1641-K1547R-SS-D-SO	0	0.25	7440-39-3	Barium	410	=	-	0.074	2	1
16	1641-K1547R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.61	J	-	0.04	0.49	1
16	1641-K1547R-SS-D-SO	0	0.25	7440-47-3	Chromium	17	=	-	0.057	3.4	1
16	1641-K1547R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.012	J	-	0.0067	0.021	1
16	1641K-1524REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	19.9	=	0.137	0.273	0.91	0.87
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7440-38-2	Arsenic	2	J	-	0.73	2.8	1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7440-39-3	Barium	420	=	-	0.084	2.2	1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7440-43-9	Cadmium	0.48	J	-	0.045	0.55	1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7440-47-3	Chromium	20	=	-	0.064	3.9	1
16	1641-K1547R-SS-D-SO-DUP	0	0.25	7439-97-6	Mercury	0.0088	J	-	0.0063	0.019	1
16	1641-K1550R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.01	J	-	0.0061	0.019	1
16	1641K-1527REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	18.9	=	0.145	0.291	0.968	0.952
16	1641K-1549REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	15.2	=	0.138	0.275	0.918	0.901
16	1641-K1549L-SS-D-SO	0	0.25	7440-39-3	Barium	370	=	-	0.081	2.1	1
16	1641-K1549L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.3	J	-	0.044	0.53	1
16	1641-K1549L-SS-D-SO	0	0.25	7440-47-3	Chromium	13	J	-	0.062	3.7	1
16	1641-K1549L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0095	J	-	0.0063	0.019	1
16	1641-K1549R-SS-D-SO	0	0.25	7440-38-2	Arsenic	1.7	J	-	0.59	2.2	1
16	1641-K1549R-SS-D-SO	0	0.25	7440-39-3	Barium	430	=	-	0.068	1.8	1
16	1641-K1549R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.3	J	-	0.036	0.44	1
16	1641-K1549R-SS-D-SO	0	0.25	7440-47-3	Chromium	19	J	-	0.052	3.1	1
16	1641-K1549R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.017	J	-	0.0064	0.02	1
16	1641-K1550L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.65	2.5	1
16	1641-K1550L-SS-D-SO	0	0.25	7440-39-3	Barium	330	=	-	0.075	2	1
16	1641-K1550L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.39	J	-	0.041	0.5	1
16	1641-K1550L-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.057	3.5	1
16	1641-K1550L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.0079	J	-	0.0062	0.019	1
16	1641-K1550R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.3	J	-	0.68	2.6	1
16	1641-K1550R-SS-D-SO	0	0.25	7440-39-3	Barium	300	=	-	0.078	2	1
16	1641-K1550R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.58	=	-	0.042	0.51	1
16	1641-K1550R-SS-D-SO	0	0.25	7440-47-3	Chromium	14	J	-	0.059	3.6	1
16	1641K-1527LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.8	=	0.137	0.275	0.916	0.901
16	1641K-1533LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.6	=	0.136	0.273	0.91	0.885
16	1641K-1531REC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13.5	=	0.145	0.29	0.967	0.952
16	1641K-1541LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	13	=	0.15	0.299	0.997	0.971

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
16	1641K-1546LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.8	=	0.145	0.291	0.968	0.952
16	1641K-1529LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	12.4	=	0.144	0.287	0.957	0.935
16	1641-K1548L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.64	2.4	1
16	1641-K1548L-SS-D-SO	0	0.25	7440-39-3	Barium	350	=	-	0.074	1.9	1
16	1641-K1548L-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.34	J	-	0.04	0.49	1
16	1641-K1548L-SS-D-SO	0	0.25	7440-47-3	Chromium	12	J	-	0.056	3.4	1
16	1641-K1548L-SS-D-SO	0	0.25	7439-97-6	Mercury	0.024	=	-	0.0066	0.02	1
16	1641-K1548R-SS-D-SO	0	0.25	7440-38-2	Arsenic	2.1	J	-	0.69	2.6	1
16	1641-K1548R-SS-D-SO	0	0.25	7440-39-3	Barium	360	=	-	0.08	2.1	1
16	1641-K1548R-SS-D-SO	0	0.25	7440-43-9	Cadmium	0.32	J	-	0.043	0.53	1
16	1641-K1548R-SS-D-SO	0	0.25	7440-47-3	Chromium	16	J	-	0.061	3.7	1
16	1641-K1548R-SS-D-SO	0	0.25	7439-97-6	Mercury	0.008	J	-	0.0067	0.02	1
16	1641-K1549L-SS-D-SO	0	0.25	7440-38-2	Arsenic	2	J	-	0.71	2.7	1
16	1641K-1524LEC-1.0-1.5D-SO	1	1.5	7439-92-1	Lead	10.8	J	0.162	0.324	1.08	0.971
16	1641K-1547LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	9.86	=	0.137	0.275	0.917	0.901
16	1641K-1540LEC-0.0-0.5D-SO	0	0.5	7439-92-1	Lead	7.53	=	0.142	0.284	0.948	0.926
16	1641K-1540LEC-0.0-0.5D-DUP	0	0.5	7439-92-1	Lead	7.37	=	0.132	0.264	0.88	0.862
24	24A941-EFR-D-SO	1	1.5	7439-92-1	Lead	6350	=	44.4	22.2	88.7	1
24	24A918-EFR-D-SO	1	1.5	7439-92-1	Lead	2870	=	26	13	51.9	1
24	24A943-EFR-D-SO	1	1.5	7439-92-1	Lead	2540	=	21.6	10.8	43.1	1
24	2418A-933SS-C-SO	0	0.5	7439-92-1	Lead	1790	=	5	1	-	5
24	24A969-EFL-D-SO	1	1.5	7439-92-1	Lead	1630	=	22.1	11.1	44.3	1
24	24A944-EFR-D-SO	1	1.5	7439-92-1	Lead	1590	=	21.4	10.7	42.8	1
24	24A926-EFL-D-SO	1	1.5	7439-92-1	Lead	1490	=	24.4	12.2	48.9	1
24	24A951-EFR-D-SO	1	1.5	7439-92-1	Lead	1470	=	22.1	11.1	44.3	1
24	2418A-946SS-C-SO	0	0.5	7439-92-1	Lead	1460	=	4.9	1	-	5
24	2418A-929SS-C-SO	0	0.5	7439-92-1	Lead	1390	=	5	1	-	5
24	2418A-939SS-C-SO	0	0.5	7439-92-1	Lead	1340	=	5	1	-	5
24	24A955-EFR-D-SO	1	1.5	7439-92-1	Lead	1100	=	21.3	10.6	42.5	1
24	2418A-918SS-C-SO	0	0.5	7439-92-1	Lead	1090	=	4.9	1	-	5
24	2418A-952SS-C-SO	0	0.5	7439-92-1	Lead	1020	=	4.9	1	-	5
24	24A929-EFL-D-SO	1	1.5	7439-92-1	Lead	1010	=	21.2	10.6	42.5	1
24	2418A-915SS-C-SO	0	0.5	7439-92-1	Lead	1000	=	5	1	-	5
24	2418A-969SS-C-SO	0	0.5	7439-92-1	Lead	977	=	4.9	1	-	5
24	2418A-909SS-C-SO	0	0.5	7439-92-1	Lead	954	=	5	1	-	5
24	2418A-916SS-C-SO	0	0.5	7439-92-1	Lead	948	=	5	1	-	5
24	24A920-EFL-D-SO	1	1.5	7439-92-1	Lead	829	=	21.9	10.9	43.7	1
24	2418A-936SS-C-SO	0	0.5	7439-92-1	Lead	824	=	4.9	1	-	5
24	2418A-903SS-C-SO	0	0.5	7439-92-1	Lead	775	=	4.9	1	-	5
24	2418A-925SS-C-SO	0	0.5	7439-92-1	Lead	762	=	5	1	-	5
24	2418A-439SS-C-SO	0	0.5	7439-92-1	Lead	746	=	5	1	-	5
24	2418A-941SS-C-SO	0	0.5	7439-92-1	Lead	741	=	5	1	-	5
24	2418A-971SS-C-SO	0	0.5	7439-92-1	Lead	720	=	4.9	1	-	5
24	2418A-943SS-C-SO	0	0.5	7439-92-1	Lead	669	=	5	1	-	5
24	2418A-299SS-C-SO	0	0.5	7439-92-1	Lead	657	=	4.9	1	-	5
24	24A922-EFR-D-SO	1	1.5	7439-92-1	Lead	644	=	21.6	10.8	43.2	1
24	2418A-922SS-C-SO	0	0.5	7439-92-1	Lead	626	=	5	1	-	5
24	2418A-917SS-C-SO	0	0.5	7439-92-1	Lead	609	=	4.9	1	-	5
24	2418A-977SS-C-SO	0	0.5	7439-92-1	Lead	606	=	5	1	-	5
24	2418A-948SS-C-SO	0	0.5	7439-92-1	Lead	603	=	5	1	-	5
24	24A955-EFL-D-SO2	1.5	2	7439-92-1	Lead	591	=	0.23	0.12	0.46	1
24	2418A-923SS-C-SO	0	0.5	7439-92-1	Lead	582	=	4.9	1	-	5
24	2418A-935SS-C-SO	0	0.5	7439-92-1	Lead	506	=	4.9	1	-	5
24	2418A-951SS-C-SO	0	0.5	7439-92-1	Lead	499	=	4.9	1	-	5
24	2418A-970SS-C-SO	0	0.5	7439-92-1	Lead	494	=	4.9	1	-	5
24	2418A-976SS-C-SO	0	0.5	7439-92-1	Lead	481	=	4.9	1	-	5
24	24A923-EFR-D-SO	1	1.5	7439-92-1	Lead	478	=	21.3	10.7	42.7	1
24	2418A-926SS-C-SO	0	0.5	7439-92-1	Lead	464	=	4.9	1	-	5
24	24A948-EFL-D-SO	1	1.5	7439-92-1	Lead	458	=	22.4	11.2	44.7	1
24	24A955-EFL-D-SO	1	1.5	7439-92-1	Lead	457	=	22.3	11.1	44.6	1
24	2418A-912SS-C-SO	0	0.5	7439-92-1	Lead	443	=	4.9	1	-	5
24	2418A-914SS-C-SO	0	0.5	7439-92-1	Lead	438	=	4.9	1	-	5
24	2418A-944SS-C-SO	0	0.5	7439-92-1	Lead	434	=	4.9	1	-	5
24	2418A-942SS-C-SO	0	0.5	7439-92-1	Lead	429	=	5	1	-	5
24	2418A-962SS-C-SO	0	0.5	7439-92-1	Lead	428	=	5	1	-	5
24	2418A-950SS-C-SO	0	0.5	7439-92-1	Lead	423	=	5	1	-	5
24	2418A-509SS-C-SO	0	0.5	7439-92-1	Lead	419	=	5	1	-	5
24	24A976-EFR-D-SO	1	1.5	7439-92-1	Lead	416	=	4.15	2.07	8.3	1
24	2418A-913SS-C-SO	0	0.5	7439-92-1	Lead	415	=	4.9	1	-	5
24	2418A-955SS-C-SO	0	0.5	7439-92-1	Lead	413	=	5	1	-	5
24	2418A-964SS-C-SO	0	0.5	7439-92-1	Lead	407	=	4.9	1	-	5
24	2418A-956SS-C-SO	0	0.5	7439-92-1	Lead	395	=	4.9	1	-	5
24	2418A-919SS-C-SO	0	0.5	7439-92-1	Lead	385	=	4.9	1	-	5
24	2418A-905SS-C-SO	0	0.5	7439-92-1	Lead	383	=	5	1	-	5



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FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
24	2418A-945SS-C-SO	0	0.5	7439-92-1	Lead	376	=	4.9	1	-	5
24	2418A-910SS-C-SO	0	0.5	7439-92-1	Lead	371	=	5	1	-	5
24	2418A-973SS-C-SO	0	0.5	7439-92-1	Lead	369	=	5	1	-	5
24	24A938-EFR-D-SO	1	1.5	7439-92-1	Lead	365	=	2.21	1.11	4.43	1
24	2418A-906SS-C-SO	0	0.5	7439-92-1	Lead	359	=	5	1	-	5
24	2418A-904SS-C-SO	0	0.5	7439-92-1	Lead	357	=	4.9	1	-	5
24	24A922-EFL-D-SO	1	1.5	7439-92-1	Lead	353	=	2.3	1.15	4.59	1
24	2418A-947SS-C-SO	0	0.5	7439-92-1	Lead	350	=	4.9	1	-	5
24	2418A-934SS-C-SO	0	0.5	7439-92-1	Lead	347	=	4.9	1	-	5
24	2418A-965SS-C-SO	0	0.5	7439-92-1	Lead	337	=	4.9	1	-	5
24	2418A-974SS-C-SO	0	0.5	7439-92-1	Lead	334	J	5	1	-	5
24	2418A-968SS-C-SO	0	0.5	7439-92-1	Lead	333	=	4.9	1	-	5
24	2418A-930SS-C-SO	0	0.5	7439-92-1	Lead	324	=	4.9	1	-	5
24	2418A-949SS-C-SO	0	0.5	7439-92-1	Lead	316	=	4.9	1	-	5
24	2418A-958SS-C-SO	0	0.5	7439-92-1	Lead	296	=	5	1	-	5
24	2418A-908SS-C-SO	0	0.5	7439-92-1	Lead	294	J	5	1	-	5
24	2418A-937SS-C-SO	0	0.5	7439-92-1	Lead	294	=	5	1	-	5
24	2418A-938SS-C-SO	0	0.5	7439-92-1	Lead	292	=	5	1	-	5
24	24A945-EFL-D-SO	1	1.5	7439-92-1	Lead	291	=	2.21	1.1	4.42	1
24	2418A-902SS-C-SO	0	0.5	7439-92-1	Lead	287	=	5	1	-	5
24	2418A-920SS-C-SO	0	0.5	7439-92-1	Lead	286	=	4.9	1	-	5
24	24A944-EFL-D-SO	1	1.5	7439-92-1	Lead	286	=	2.32	1.16	4.63	1
24	2418A-907SS-C-SO	0	0.5	7439-92-1	Lead	275	=	5	1	-	5
24	24A962-EFL-D-SO	1	1.5	7439-92-1	Lead	275	=	2.2	1.1	4.4	1
24	24A977-EFR-D-SO2	1.5	2	7439-92-1	Lead	275	=	0.26	0.13	0.52	1
24	2418A-927SS-C-SO	0	0.5	7439-92-1	Lead	273	=	5	1	-	5
24	24A925-EFR-D-SO	1	1.5	7439-92-1	Lead	270	=	2.42	1.21	4.85	1
24	2418A-924SS-C-SO	0	0.5	7439-92-1	Lead	260	=	5	1	-	5
24	24A939-EFL-D-SO	1	1.5	7439-92-1	Lead	258	=	2.19	1.09	4.37	1
24	2418A-928SS-C-SO	0	0.5	7439-92-1	Lead	249	=	5	1	-	5
24	2418A-932SS-C-SO	0	0.5	7439-92-1	Lead	246	=	5	1	-	5
24	2418A-954SS-C-SO	0	0.5	7439-92-1	Lead	241	=	4.9	1	-	5
24	24A976-EFL-D-SO	1	1.5	7439-92-1	Lead	227	=	2.17	1.09	4.35	1
24	24A952-EFR-D-SO	1	1.5	7439-92-1	Lead	223	=	2.12	1.06	4.24	1
24	2418A-963SS-C-SO	0	0.5	7439-92-1	Lead	223	=	5	1	-	5
24	24A918-EFL-D-SO	1	1.5	7439-92-1	Lead	217	=	2.65	1.33	5.3	1
24	2418A-967SS-C-SO	0	0.5	7439-92-1	Lead	215	=	5	1	-	5
24	24A924-EFR-D-SO	1	1.5	7439-92-1	Lead	214	=	2.64	1.32	5.29	1
24	2418A-957SS-C-SO	0	0.5	7439-92-1	Lead	208	=	4.9	1	-	5
24	2418A-975SS-C-SO	0	0.5	7439-92-1	Lead	208	=	5	1	-	5
24	24A936-EFL-D-SO	1	1.5	7439-92-1	Lead	196	=	2.11	1.05	4.22	1
24	2418A-940SS-C-SO	0	0.5	7439-92-1	Lead	194	J	4.9	1	-	5
24	2418A-921SS-C-SO	0	0.5	7439-92-1	Lead	186	=	4.9	1	-	5
24	24A939-EFR-D-SO	1	1.5	7439-92-1	Lead	180	=	2.06	1.03	4.11	1
24	2418A-972SS-C-SO	0	0.5	7439-92-1	Lead	179	=	4.9	1	-	5
24	2418A-911SS-C-SO	0	0.5	7439-92-1	Lead	170	=	4.9	1	-	5
24	24A929-EFR-D-SO	1	1.5	7439-92-1	Lead	170	=	2.06	1.03	4.13	1
24	24A-EF-D-SO-DUP03	1	1.5	7439-92-1	Lead	170	J	2.2	1.1	4.39	1
24	2418A-769SS-C-SO	0	0.5	7439-92-1	Lead	168	=	4.9	1	-	5
24	24A909-EFL-D-SO	1	1.5	7439-92-1	Lead	164	=	2.18	1.09	4.36	1
24	24A935-EFL-D-SO	1	1.5	7439-92-1	Lead	162	=	2.2	1.1	4.41	1
24	2418A-049SS-C-SO	0	0.5	7439-92-1	Lead	151	=	4.9	1	-	5
24	24A936-EFR-D-SO	1	1.5	7439-92-1	Lead	151	=	2.1	1.05	4.21	1
24	24A947-EFR-D-SO	1	1.5	7439-92-1	Lead	150	=	2.2	1.1	4.39	1
24	24A946-EFR-D-SO	1	1.5	7439-92-1	Lead	145	=	2.13	1.07	4.27	1
24	2418A-931SS-C-SO	0	0.5	7439-92-1	Lead	144	=	4.9	1	-	5
24	24A934-EFL-D-SO	1	1.5	7439-92-1	Lead	144	=	2.15	1.08	4.31	1
24	24A969-EFR-D-SO	1	1.5	7439-92-1	Lead	143	=	3.18	1.59	6.37	1
24	2418A-961SS-C-SO	0	0.5	7439-92-1	Lead	140	=	5	1	-	5
24	2418A-901SS-C-SO	0	0.5	7439-92-1	Lead	134	=	5	1	-	5
24	24A964-EFR-D-SO	1	1.5	7439-92-1	Lead	131	=	2.17	1.08	4.34	1
24	24A927-EFL-D-SO	1	1.5	7439-92-1	Lead	127	=	2.44	1.22	4.87	1
24	24A926-EFR-D-SO	1	1.5	7439-92-1	Lead	126	=	2.77	1.38	5.53	1
24	24A952-EFL-D-SO	1	1.5	7439-92-1	Lead	113	=	2.18	1.09	4.35	1
24	24A939-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.42	=	0.21	0.1	0.41	1
24	24A939-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.02	=	0.012	0.005	0.012	1
24	24A941-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.22	J	0.21	0.11	0.42	1
24	24A941-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.011	J	0.012	0.0047	0.012	1
24	24A941-EFR-D-SO	1	1.5	7440-38-2	Arsenic	6.55	J	0.22	0.11	0.44	1
24	24A941-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.028	=	0.013	0.0053	0.013	1
24	24A941-EFR-D-SO2	3	3.5	7440-38-2	Arsenic	3.79	=	0.23	0.11	0.45	1
24	24A941-EFR-D-SO2	3	3.5	7439-97-6	Mercury	0.042	=	0.014	0.0055	0.014	1
24	24A951-EFL-D-SO	1	1.5	7439-92-1	Lead	104	=	2.19	1.09	4.38	1
24	24A942-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.65	J	0.23	0.11	0.45	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
24	24A942-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.013	0.0051	0.013	1
24	24A925-EFL-D-SO	1	1.5	7439-92-1	Lead	104	=	2.5	1.25	5	1
24	24A942-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.24	J	0.23	0.11	0.45	1
24	24A942-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.014	0.0055	0.014	1
24	24A943-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.66	J	0.23	0.11	0.45	1
24	24A943-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.027	=	0.014	0.0054	0.014	1
24	24A943-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.65	J	0.22	0.11	0.43	1
24	24A943-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.033	=	0.013	0.0053	0.013	1
24	24A943-EFR-D-SO2	3.5	4	7440-38-2	Arsenic	4.55	=	0.23	0.11	0.45	1
24	24A943-EFR-D-SO2	3.5	4	7439-97-6	Mercury	0.045	=	0.013	0.0051	0.013	1
24	24A944-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.01	J	0.23	0.12	0.46	1
24	24A944-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.033	=	0.013	0.0052	0.013	1
24	24A944-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.73	J	0.21	0.11	0.43	1
24	24A944-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.028	=	0.013	0.0052	0.013	1
24	24A905-EFR-D-SO	1	1.5	7439-92-1	Lead	96.8	=	2.26	1.13	4.51	1
24	24A944-EFR-D-SO2	2	2.5	7440-38-2	Arsenic	4.03	=	0.23	0.12	0.46	1
24	24A944-EFR-D-SO2	2	2.5	7439-97-6	Mercury	0.028	=	0.012	0.0046	0.012	1
24	2418A-953SS-C-SO	0	0.5	7439-92-1	Lead	94.3	=	5	1	-	5
24	24A945-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.98	J	0.22	0.11	0.44	1
24	24A945-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.029	=	0.013	0.005	0.013	1
24	24A946-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.58	J	0.21	0.11	0.43	1
24	24A946-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.04	=	0.013	0.0051	0.013	1
24	24A975-EFR-D-SO	1	1.5	7439-92-1	Lead	93.7	=	2.09	1.05	4.18	1
24	24A946-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.99	J	0.21	0.11	0.43	1
24	24A946-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.038	=	0.012	0.0048	0.012	1
24	24A947-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.53	J	0.22	0.11	0.44	1
24	24A947-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.048	=	0.013	0.0053	0.013	1
24	24A948-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.49	=	0.22	0.11	0.45	1
24	24A948-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.032	=	0.011	0.0045	0.011	1
24	24A948-EFL-D-SO2	1.5	2	7440-38-2	Arsenic	4.26	=	0.28	0.14	0.56	1
24	24A948-EFL-D-SO2	1.5	2	7439-97-6	Mercury	0.046	=	0.016	0.0066	0.016	1
24	24A948-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.38	=	0.22	0.11	0.43	1
24	24A948-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.0051	0.013	1
24	24A970-EFR-D-SO	1	1.5	7439-92-1	Lead	90.7	=	2.21	1.11	4.42	1
24	24A950-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.13	=	0.22	0.11	0.44	1
24	24A950-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.013	0.0052	0.013	1
24	24A950-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.56	=	0.21	0.11	0.43	1
24	24A950-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.018	=	0.013	0.0052	0.013	1
24	24A951-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.96	=	0.22	0.11	0.44	1
24	24A951-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.018	=	0.012	0.0048	0.012	1
24	2418A-966SS-C-SO	0	0.5	7439-92-1	Lead	84.7	=	5	1	-	5
24	24A951-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.47	=	0.22	0.11	0.44	1
24	24A951-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.017	=	0.013	0.0053	0.013	1
24	24A977-EFR-D-SO	1	1.5	7439-92-1	Lead	83	=	2.16	1.08	4.33	1
24	24A951-EFR-D-SO2	2	2.5	7440-38-2	Arsenic	2.76	=	0.22	0.11	0.44	1
24	24A951-EFR-D-SO2	2	2.5	7439-97-6	Mercury	0.015	=	0.012	0.005	0.012	1
24	24A952-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.32	=	0.22	0.11	0.44	1
24	24A952-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.013	0.0052	0.013	1
24	24A952-EFR-D-SO	1	1.5	7440-38-2	Arsenic	1.82	=	0.21	0.11	0.42	1
24	24A952-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.016	=	0.013	0.0051	0.013	1
24	24A971-EFL-D-SO	1	1.5	7439-92-1	Lead	81.2	=	2.23	1.12	4.46	1
24	24A955-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.86	J	0.22	0.11	0.45	1
24	24A955-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.032	=	0.013	0.0053	0.013	1
24	24A965-EFL-D-SO	1	1.5	7439-92-1	Lead	81	=	2.16	1.08	4.33	1
24	24A955-EFL-D-SO2	1.5	2	7440-38-2	Arsenic	3.64	=	0.23	0.12	0.46	1
24	24A955-EFL-D-SO2	1.5	2	7439-97-6	Mercury	0.026	=	0.013	0.0053	0.013	1
24	24A923-EFL-D-SO	1	1.5	7439-92-1	Lead	79	=	2.25	1.13	4.51	1
24	24A955-EFL-D-SO3	2	2.5	7440-38-2	Arsenic	3.42	=	0.21	0.11	0.43	1
24	24A955-EFL-D-SO3	2	2.5	7439-97-6	Mercury	0.031	=	0.012	0.0049	0.012	1
24	24A955-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.72	J	0.21	0.11	0.43	1
24	24A955-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.03	=	0.013	0.005	0.013	1
24	24A955-EFR-D-SO2	2	2.5	7440-38-2	Arsenic	4.53	=	0.23	0.11	0.45	1
24	24A955-EFR-D-SO2	2	2.5	7439-97-6	Mercury	0.026	=	0.013	0.0051	0.013	1
24	24A962-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.92	J	0.22	0.11	0.44	1
24	24A962-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.027	=	0.013	0.0053	0.013	1
24	24A962-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.09	J	0.21	0.11	0.43	1
24	24A962-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.023	=	0.011	0.0043	0.011	1
24	24A942-EFL-D-SO	1	1.5	7439-92-1	Lead	66.6	=	2.26	1.13	4.52	1
24	24A917-EFR-D-SO	1	1.5	7439-92-1	Lead	62.7	J	2.23	1.12	4.46	1
24	24A903-EFL-D-SO	1	1.5	7439-92-1	Lead	61.7	=	2.26	1.13	4.52	1
24	24A933-EFR-D-SO	1	1.5	7439-92-1	Lead	61.2	=	2.16	1.08	4.32	1
24	24A-EF-D-SO-DUP04	1	1.5	7439-92-1	Lead	60.5	=	2.25	1.12	4.49	1
24	24A977-EFL-D-SO	1	1.5	7439-92-1	Lead	60.3	=	2.27	1.13	4.53	1
24	24A942-EFR-D-SO	1	1.5	7439-92-1	Lead	58.7	=	2.27	1.14	4.54	1



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FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
24	24A920-EFR-D-SO	1	1.5	7439-92-1	Lead	58.5	=	2.12	1.06	4.23	1
24	24A907-EFR-D-SO	1	1.5	7439-92-1	Lead	57.9	=	2.17	1.09	4.34	1
24	24A970-EFL-D-SO	1	1.5	7439-92-1	Lead	55.7	=	2.12	1.06	4.23	1
24	24A905-EFL-D-SO	1	1.5	7439-92-1	Lead	55	=	2.18	1.09	4.36	1
24	24A971-EFR-D-SO	1	1.5	7439-92-1	Lead	53.4	=	2.12	1.06	4.24	1
24	24A-EF-D-SO-DUP01	1	1.5	7439-92-1	Lead	48.7	J	2.17	1.08	4.33	1
24	24A950-EFL-D-SO	1	1.5	7439-92-1	Lead	47.7	=	2.21	1.11	4.42	1
24	24A935-EFR-D-SO	1	1.5	7439-92-1	Lead	47.2	=	2.13	1.07	4.26	1
24	24A903-EFR-D-SO	1	1.5	7439-92-1	Lead	47.1	J	2.14	1.07	4.28	1
24	24A915-EFR-D-SO	1	1.5	7439-92-1	Lead	44.2	=	2.17	1.09	4.35	1
24	24A913-EFR-D-SO	1	1.5	7439-92-1	Lead	41.9	=	0.22	0.11	0.44	1
24	24A941-EFL-D-SO	1	1.5	7439-92-1	Lead	40	=	0.21	0.11	0.42	1
24	24A912-EFR-D-SO	1	1.5	7439-92-1	Lead	39.5	=	0.21	0.11	0.43	1
24	24A912-EFL-D-SO	1	1.5	7439-92-1	Lead	39.2	=	0.22	0.11	0.43	1
24	24A943-EFL-D-SO	1	1.5	7439-92-1	Lead	37.4	=	0.23	0.11	0.45	1
24	24A950-EFR-D-SO	1	1.5	7439-92-1	Lead	35.6	=	0.21	0.11	0.43	1
24	24A962-EFR-D-SO	1	1.5	7439-92-1	Lead	33.6	=	0.21	0.11	0.43	1
24	24A-EF-D-SO-DUP02	1	1.5	7439-92-1	Lead	31	=	2.24	1.12	4.49	1
24	24A917-EFL-D-SO	1	1.5	7439-92-1	Lead	30.5	=	0.22	0.11	0.44	1
24	24A916-EFR-D-SO	1	1.5	7439-92-1	Lead	29.8	=	0.22	0.11	0.44	1
24	24A914-EFR-D-SO	1	1.5	7439-92-1	Lead	28.6	=	0.21	0.11	0.43	1
24	24A909-EFR-D-SO	1	1.5	7439-92-1	Lead	25.3	=	0.22	0.11	0.44	1
24	24A917-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.75	J	0.22	0.11	0.44	1
24	24A917-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.025	=	0.014	0.0054	0.014	1
24	24A-EF-D-SO-DUP01	1	1.5	7440-38-2	Arsenic	2.68	J	0.22	0.11	0.43	1
24	24A-EF-D-SO-DUP01	1	1.5	7439-97-6	Mercury	0.032	=	0.013	0.0052	0.013	1
24	24A917-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.09	J	0.22	0.11	0.45	1
24	24A917-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.013	0.0052	0.013	1
24	24A918-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.89	=	0.27	0.13	0.53	1
24	24A918-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.043	=	0.016	0.0062	0.016	1
24	24A918-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.25	=	0.26	0.13	0.52	1
24	24A918-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.033	=	0.015	0.0061	0.015	1
24	24A948-EFL-D-SO2	1.5	2	7439-92-1	Lead	23.8	=	0.28	0.14	0.56	1
24	24A918-EFR-D-SO2	1.5	2	7440-38-2	Arsenic	3.4	=	0.22	0.11	0.45	1
24	24A918-EFR-D-SO2	1.5	2	7439-97-6	Mercury	0.023	=	0.013	0.0053	0.013	1
24	24A915-EFL-D-SO	1	1.5	7439-92-1	Lead	23.8	=	0.22	0.11	0.45	1
24	24A920-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.73	=	0.22	0.11	0.44	1
24	24A920-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.026	=	0.013	0.0052	0.013	1
24	24A920-EFL-D-SO2	1.5	2	7440-38-2	Arsenic	4.99	=	0.24	0.12	0.48	1
24	24A920-EFL-D-SO2	1.5	2	7439-97-6	Mercury	0.044	=	0.015	0.0058	0.015	1
24	24A920-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.69	=	0.21	0.11	0.42	1
24	24A920-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.012	0.0048	0.012	1
24	24A922-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.33	=	0.23	0.11	0.46	1
24	24A922-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.039	=	0.014	0.0056	0.014	1
24	24A955-EFR-D-SO2	2	2.5	7439-92-1	Lead	22.6	=	0.23	0.11	0.45	1
24	24A922-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.51	=	0.22	0.11	0.43	1
24	24A922-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.013	0.0051	0.013	1
24	24A922-EFR-D-SO2	4	4.5	7440-38-2	Arsenic	5.02	=	0.22	0.11	0.45	1
24	24A922-EFR-D-SO2	4	4.5	7439-97-6	Mercury	0.06	=	0.013	0.0051	0.013	1
24	24A923-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.14	=	0.23	0.11	0.45	1
24	24A923-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.005	0.013	1
24	24A946-EFL-D-SO	1	1.5	7439-92-1	Lead	22.1	=	0.21	0.11	0.43	1
24	24A923-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.95	=	0.21	0.11	0.43	1
24	24A923-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.013	0.0052	0.013	1
24	24A963-EFL-D-SO	1	1.5	7439-92-1	Lead	22.1	=	0.22	0.11	0.43	1
24	24A923-EFR-D-SO2	2	2.5	7440-38-2	Arsenic	3.51	=	0.21	0.1	0.42	1
24	24A923-EFR-D-SO2	2	2.5	7439-97-6	Mercury	0.014	=	0.012	0.0047	0.012	1
24	24A924-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.17	=	0.26	0.13	0.53	1
24	24A924-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.058	=	0.016	0.0062	0.016	1
24	24A925-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.52	=	0.25	0.12	0.5	1
24	24A925-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.033	=	0.014	0.0057	0.014	1
24	24A925-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.02	=	0.24	0.12	0.48	1
24	24A925-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.024	=	0.013	0.0053	0.013	1
24	24A926-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.48	=	0.24	0.12	0.49	1
24	24A926-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.037	=	0.014	0.0056	0.014	1
24	24A926-EFL-D-SO2	2	2.5	7440-38-2	Arsenic	3.52	=	0.23	0.11	0.46	1
24	24A926-EFL-D-SO2	2	2.5	7439-97-6	Mercury	0.027	=	0.014	0.0055	0.014	1
24	24A926-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.39	=	0.28	0.14	0.55	1
24	24A926-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.015	0.0061	0.015	1
24	24A927-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.35	=	0.24	0.12	0.49	1
24	24A927-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.039	=	0.015	0.0059	0.015	1
24	24A929-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.1	=	0.21	0.11	0.42	1
24	24A929-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.012	0.0049	0.012	1
24	24A929-EFL-D-SO2	1	1.5	7440-38-2	Arsenic	3.72	=	0.24	0.12	0.47	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
24	24A929-EFL-D-SO2	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.0052	0.013	1
24	24A929-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.13	=	0.21	0.1	0.41	1
24	24A929-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.032	=	0.013	0.0051	0.013	1
24	24A933-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.81	=	0.21	0.11	0.42	1
24	24A933-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.02	=	0.012	0.0049	0.012	1
24	24A933-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.95	=	0.22	0.11	0.43	1
24	24A933-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.012	0.0047	0.012	1
24	24A914-EFL-D-SO	1	1.5	7439-92-1	Lead	18.9	=	0.22	0.11	0.44	1
24	24A934-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.98	=	0.22	0.11	0.43	1
24	24A934-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.0052	0.013	1
24	24A922-EFR-D-SO2	4	4.5	7439-92-1	Lead	18.7	=	0.22	0.11	0.45	1
24	24A935-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.29	=	0.22	0.11	0.44	1
24	24A935-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.012	0.0048	0.012	1
24	24A913-EFL-D-SO	1	1.5	7439-92-1	Lead	18.7	=	0.22	0.11	0.43	1
24	24A935-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.99	=	0.21	0.11	0.43	1
24	24A935-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.042	=	0.013	0.0051	0.013	1
24	24A936-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.99	=	0.21	0.11	0.42	1
24	24A936-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.013	0.0052	0.013	1
24	24A936-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.41	=	0.21	0.11	0.42	1
24	24A936-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.034	=	0.012	0.0049	0.012	1
24	24A938-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.37	=	0.22	0.11	0.44	1
24	24A938-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.035	=	0.013	0.0053	0.013	1
24	24A943-EFR-D-SO2	3.5	4	7439-92-1	Lead	18	=	0.23	0.11	0.45	1
24	24A939-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.76	=	0.22	0.11	0.44	1
24	24A939-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.027	=	0.013	0.0052	0.013	1
24	24A955-EFL-D-SO3	2	2.5	7439-92-1	Lead	18	=	0.23	0.12	0.46	1
24	24A969-EFL-D-SO2	2	2.5	7439-92-1	Lead	16.3	=	0.24	0.12	0.47	1
24	24A926-EFL-D-SO2	2	2.5	7439-92-1	Lead	16.2	=	0.23	0.11	0.46	1
24	24A944-EFR-D-SO2	2	2.5	7439-92-1	Lead	15.9	=	0.23	0.12	0.46	1
24	24A918-EFR-D-SO2	1.5	2	7439-92-1	Lead	15.7	=	0.22	0.11	0.45	1
24	24A916-EFL-D-SO	1	1.5	7439-92-1	Lead	15.7	=	0.22	0.11	0.44	1
24	24A941-EFR-D-SO2	3	3.5	7439-92-1	Lead	15.3	=	0.23	0.11	0.45	1
24	24A920-EFL-D-SO2	1.5	2	7439-92-1	Lead	14.5	=	0.24	0.12	0.48	1
24	24A-EF-D-SO-DUP04	1	1.5	7440-38-2	Arsenic	4.1	J	0.22	0.11	0.45	1
24	24A-EF-D-SO-DUP04	1	1.5	7439-97-6	Mercury	0.034	=	0.012	0.0049	0.012	1
24	24A903-EFL-D-SO	1	1.5	7440-38-2	Arsenic	4.09	J	0.23	0.11	0.45	1
24	24A903-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.029	=	0.012	0.0048	0.012	1
24	24A-EF-D-SO-DUP03	1	1.5	7440-38-2	Arsenic	2.27	J	0.22	0.11	0.44	1
24	24A-EF-D-SO-DUP03	1	1.5	7439-97-6	Mercury	0.031	=	0.013	0.0052	0.013	1
24	24A929-EFL-D-SO2	1	1.5	7439-92-1	Lead	14.3	=	0.24	0.12	0.47	1
24	24A903-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.33	J	0.21	0.11	0.43	1
24	24A903-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.0072	J	0.012	0.0046	0.012	1
24	24A905-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.09	J	0.22	0.11	0.44	1
24	24A905-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.016	=	0.013	0.0051	0.013	1
24	24A905-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.5	J	0.23	0.11	0.45	1
24	24A905-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.025	=	0.013	0.005	0.013	1
24	24A907-EFR-D-SO	1	1.5	7440-38-2	Arsenic	1.7	J	0.22	0.11	0.43	1
24	24A907-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.011	J	0.012	0.0049	0.012	1
24	24A909-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.3	J	0.22	0.11	0.44	1
24	24A909-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.01	J	0.012	0.0049	0.012	1
24	24A909-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.11	J	0.22	0.11	0.44	1
24	24A909-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.019	=	0.013	0.0052	0.013	1
24	24A912-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.19	J	0.22	0.11	0.43	1
24	24A912-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.0091	J	0.013	0.0051	0.013	1
24	24A912-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.08	J	0.21	0.11	0.43	1
24	24A912-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.019	=	0.013	0.0052	0.013	1
24	24A913-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.86	J	0.22	0.11	0.43	1
24	24A913-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.0055	J	0.013	0.0051	0.013	1
24	24A913-EFR-D-SO	1	1.5	7440-38-2	Arsenic	1.77	J	0.22	0.11	0.44	1
24	24A913-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.01	J	0.013	0.0052	0.013	1
24	24A914-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.33	J	0.22	0.11	0.44	1
24	24A914-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.0072	J	0.011	0.0044	0.011	1
24	24A964-EFL-D-SO	1	1.5	7439-92-1	Lead	13.9	=	0.22	0.11	0.44	1
24	24A914-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.68	J	0.21	0.11	0.43	1
24	24A914-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.014	=	0.013	0.0051	0.013	1
24	24A915-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.02	J	0.22	0.11	0.45	1
24	24A915-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.018	=	0.013	0.005	0.013	1
24	24A915-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.28	J	0.22	0.11	0.43	1
24	24A915-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.016	=	0.012	0.005	0.012	1
24	24A916-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.75	J	0.22	0.11	0.44	1
24	24A916-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.019	=	0.013	0.0052	0.013	1
24	24A916-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.12	J	0.22	0.11	0.44	1
24	24A916-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.021	=	0.013	0.0051	0.013	1
24	24A-EF-D-SO-DUP02	1	1.5	7440-38-2	Arsenic	3.78	J	0.22	0.11	0.45	1

**Appendix C Table 2: Summary of RCRA 8 Detections from Discrete and Composite Samples for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
24	24A-EF-D-SO-DUP02	1	1.5	7439-97-6	Mercury	0.033	=	0.013	0.0054	0.013	1
24	2418A-960SS-C-SO	0	0.5	7439-92-1	Lead	13.1	=	4.9	1	-	5
24	24A948-EFR-D-SO	1	1.5	7439-92-1	Lead	12.7	=	0.22	0.11	0.43	1
24	24A923-EFR-D-SO2	2	2.5	7439-92-1	Lead	12.7	=	0.21	0.1	0.42	1
24	24A976-EFR-D-SO2	3	3.5	7439-92-1	Lead	12.7	=	0.22	0.11	0.44	1
24	2418A-959SS-C-SO	0	0.5	7439-92-1	Lead	11.6	=	4.9	1	-	5
24	24A951-EFR-D-SO2	2	2.5	7439-92-1	Lead	10.8	=	0.22	0.11	0.44	1
24	24A963-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.64	J	0.22	0.11	0.43	1
24	24A963-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.028	=	0.012	0.0048	0.012	1
24	24A964-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.89	J	0.22	0.11	0.44	1
24	24A964-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.025	=	0.013	0.005	0.013	1
24	24A964-EFR-D-SO	1	1.5	7440-38-2	Arsenic	2.72	J	0.22	0.11	0.43	1
24	24A964-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.029	=	0.013	0.0052	0.013	1
24	24A965-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.19	J	0.22	0.11	0.43	1
24	24A965-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.016	=	0.013	0.0051	0.013	1
24	24A969-EFL-D-SO	1	1.5	7440-38-2	Arsenic	7.1	J	0.22	0.11	0.44	1
24	24A969-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.041	=	0.011	0.0044	0.011	1
24	24A969-EFL-D-SO2	2	2.5	7440-38-2	Arsenic	4.46	=	0.24	0.12	0.47	1
24	24A969-EFL-D-SO2	2	2.5	7439-97-6	Mercury	0.034	=	0.013	0.0053	0.013	1
24	24A969-EFR-D-SO	1	1.5	7440-38-2	Arsenic	4.69	J	0.32	0.16	0.64	1
24	24A969-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.04	=	0.019	0.0077	0.019	1
24	24A970-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.43	J	0.21	0.11	0.42	1
24	24A970-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.023	=	0.013	0.0051	0.013	1
24	24A970-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.75	J	0.22	0.11	0.44	1
24	24A970-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.031	=	0.013	0.0053	0.013	1
24	24A933-EFL-D-SO	1	1.5	7439-92-1	Lead	10	=	0.21	0.11	0.42	1
24	24A971-EFL-D-SO	1	1.5	7440-38-2	Arsenic	3.05	J	0.22	0.11	0.45	1
24	24A971-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.053	=	0.012	0.005	0.012	1
24	24A971-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.7	J	0.21	0.11	0.42	1
24	24A971-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.045	=	0.013	0.0052	0.013	1
24	24A975-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3.34	J	0.21	0.1	0.42	1
24	24A975-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.022	=	0.012	0.005	0.012	1
24	24A976-EFL-D-SO	1	1.5	7440-38-2	Arsenic	2.7	J	0.22	0.11	0.43	1
24	24A976-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.024	=	0.013	0.005	0.013	1
24	24A976-EFR-D-SO	1	1.5	7440-38-2	Arsenic	3	J	0.21	0.1	0.41	1
24	24A976-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.023	=	0.012	0.0049	0.012	1
24	24A976-EFR-D-SO2	3	3.5	7440-38-2	Arsenic	4.2	=	0.22	0.11	0.44	1
24	24A976-EFR-D-SO2	3	3.5	7439-97-6	Mercury	0.017	=	0.013	0.0053	0.013	1
24	24A977-EFL-D-SO	1	1.5	7440-38-2	Arsenic	1.61	J	0.23	0.11	0.45	1
24	24A977-EFL-D-SO	1	1.5	7439-97-6	Mercury	0.013	J	0.013	0.0053	0.013	1
24	24A977-EFR-D-SO	1	1.5	7440-38-2	Arsenic	0.964	J	0.22	0.11	0.43	1
24	24A977-EFR-D-SO	1	1.5	7439-97-6	Mercury	0.014	=	0.013	0.0052	0.013	1
24	24A977-EFR-D-SO2	1.5	2	7440-38-2	Arsenic	1.58	=	0.26	0.13	0.52	1
24	24A977-EFR-D-SO2	1.5	2	7439-97-6	Mercury	0.0086	J	0.015	0.006	0.015	1

**Appendix C Table 3: Summary of Explosives Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Igloo/ Revetment	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
<b>1,3,5-Trinitrobenzene</b>												
24	Y-A-911	2418Y-A911ASS-M-SO	0	0.5	99-35-4	1,3,5-Trinitrobenzene	0.016	J	0.04	0.002	-	1
24	A-973	2418A-973SS-C-SO	0	0.5	99-35-4	1,3,5-Trinitrobenzene	0.016	J	0.04	0.002	-	1
<b>1,3-Dinitrobenzene</b>												
16	K-1550	1641-K1550R-SS-D-SO	0	0.25	99-65-0	1,3-Dinitrobenzene	0.016	J	-	0.016	0.094	1
<b>2,4,6-Trinitrotoluene</b>												
24	Y-A-971	2418Y-A971SS-M-SO	0	0.5	118-96-7	2,4,6-Trinitrotoluene	0.015	J	0.04	0.012	-	1
<b>2,4-Dinitrotoluene</b>												
6	B-1006	0628B-1006-SS-C-SO	0	0.5	121-14-2	2,4-Dinitrotoluene	0.4	=	0.097	0.014	-	1
16	K-1540	1641-K1540L-SS-D-SO	0	0.25	121-14-2	2,4-Dinitrotoluene	0.029	J	-	0.015	0.099	1
16	K-1540	1641-K1540L-SS-D-SO-DUP	0	0.25	121-14-2	2,4-Dinitrotoluene	0.025	J	-	0.014	0.093	1
<b>2-Amino-4,6-Dinitrotoluene</b>												
9	A-998	0918A-998SS-M-SO	0	0.5	35572-78-2	2-Amino-4,6-Dinitrotoluene	0.11	=	0.039	0.005	-	1
24	A-934	2418A-934SS-M	0	0.5	35572-78-2	2-Amino-4,6-Dinitrotoluene	0.11	=	0.04	0.006	-	1
24	Y-A-941	2418Y-A941SS-M	0	0.5	35572-78-2	2-Amino-4,6-Dinitrotoluene	0.031	NJ	0.038	0.005	-	1
24	Y-A-948	2418Y-A948SS-M	0	0.5	35572-78-2	2-Amino-4,6-Dinitrotoluene	0.0087	NJ	0.04	0.006	-	1
<b>3-Nitrotoluene</b>												
9	A-998	0918A-998SS-M-SO	0	0.5	99-08-1	3-Nitrotoluene	0.86	=	0.078	0.012	-	1
<b>4-Amino-2,6-Dinitrotoluene</b>												
24	A-934	2418A-934SS-M-SO	0	0.5	19406-51-0	4-Amino-2,6-Dinitrotoluene	0.075	=	0.04	0.008	-	1
<b>4-Nitrotoluene</b>												
16	K-1526	1641-K1526-SS-M-SO	0	0.5	99-99-0	4-Nitrotoluene	0.17	J	-	0.034	0.19	1
16	K-1524	1641-K1524L-SS-D-SO	0	0.25	99-99-0	4-Nitrotoluene	0.078	J	-	0.036	0.2	1
16	K-1550	1641-K1550R-SS-D-SO	0	0.25	99-99-0	4-Nitrotoluene	0.058	J	-	0.034	0.19	1
<b>HMX</b>												
6	B-1005	0628B-1005-SS-C-SO	0	0.5	2691-41-0	HMX	2	J	0.099	0.022	-	1
16	K-1542	1641-K1542L-SS-D-SO-DUP	0	0.25	2691-41-0	HMX	1.8	J	-	0.022	0.099	1
6	B-1016	0628B-1016-SS-M-SO	0	0.25	2691-41-0	HMX	1.6	=	0.095	0.022	-	1
16	K-1542	1641-K1542L-SS-D-SO	0	0.25	2691-41-0	HMX	0.59	J	-	0.022	0.096	1
6	B-1001	0628B-1001-SS-C-SO	0	0.5	2691-41-0	HMX	0.55	=	0.095	0.021	-	1
6	B-1016	0628B-1016-SS-C-SO	0	0.5	2691-41-0	HMX	0.31	=	0.094	0.021	-	1
6	B-1017	0628B-1017-SS-C-SO	0	0.5	2691-41-0	HMX	0.048	J	0.093	0.021	-	1
6	B-1091	0628B-1091-SS-C-SO	0	0.5	2691-41-0	HMX	0.035	J	0.099	0.022	-	1
<b>Nitrobenzene</b>												
9	A-994	0918A-994SS-C-SO	0	0.5	98-95-3	Nitrobenzene	0.041	=	0.038	0.005	-	1
24	A-972	2418A-972SS-M	0	0.5	98-95-3	Nitrobenzene	0.015	NJ	0.04	0.005	-	1
24	Y-A-901	2418Y-A901BSS-M	0	0.5	98-95-3	Nitrobenzene	0.011	NJ	0.04	0.005	-	1
<b>Nitroglycerin</b>												
16	K-1533	1641-K1533R-SS-D-SO	0	0.25	55-63-0	Nitroglycerin	0.62	J	-	0.21	1.9	1
<b>PETN</b>												
9	A-968	0918A-986SS-C-SO	0	0.5	78-11-5	PETN	4.5	=	2	0.16	-	10



**Appendix C Table 3: Summary of Explosives Detections for Igloo Aprons/Revetments in Parcels 6, 9, 16, and 24  
FWDA, McKinley County, New Mexico**

Parcel	Igloo/ Revetment	Sample ID	Start Depth (ft)	End Depth (ft)	CAS Number	Chemical	Results (mg/kg)	Qualifier	Detection Limit (mg/kg)	MDL (mg/kg)	LOQ (mg/kg)	Dilution
24	A-954	2418A-954SS-M	0	0.5	78-11-5	PETN	0.44	J	0.18	0.015	-	1
24	Y-A-953	2418Y-A953SS-M	0	0.5	78-11-5	PETN	0.42	J	0.2	0.016	-	1
24	A-971	2418A-971SS-M	0	0.5	78-11-5	PETN	0.32	=	0.2	0.016	-	1
9	A-990	0918A-990SS-C-SO	0	0.5	78-11-5	PETN	0.31	=	0.19	0.015	-	1
24	Y-A-945	2418Y-A945SS-M	0	0.5	78-11-5	PETN	0.27	NJ	0.2	0.016	-	1
24	A-955	2418A-955SS-M	0	0.5	78-11-5	PETN	0.25	=	0.19	0.015	-	1
24	A-910	2418A-910SS-C	0	0.5	78-11-5	PETN	0.24	NJ	0.2	0.016	-	1
24	A-914	2418A-914SS-C	0	0.5	78-11-5	PETN	0.22	NJ	0.2	0.016	-	1
24	A-968	2418A-968SS-C	0	0.5	78-11-5	PETN	0.22	=	0.2	0.016	-	1
24	A-947	2418A-947SS-M	0	0.5	78-11-5	PETN	0.18	NJ	0.2	0.016	-	1
24	A-975	2418A-975SS-C	0	0.5	78-11-5	PETN	0.18	J	0.2	0.016	-	1
9	A-995	0918A-995SS-M-SO	0	0.5	78-11-5	PETN	0.17	J	0.2	0.016	-	1
9	A-979	0918A-979SS-C-SO	0	0.5	78-11-5	PETN	0.16	J	0.2	0.016	-	1
9	A-992	0918A-992SS-C-SO	0	0.5	78-11-5	PETN	0.14	J	0.19	0.015	-	1
24	A-973	2418A-973SS-C	0	0.5	78-11-5	PETN	0.13	J	0.2	0.016	-	1
9	A-992	0918A-992SS-M-SO	0	0.5	78-11-5	PETN	0.11	J	0.19	0.015	-	1
24	A-957	2418A-957SS-M	0	0.5	78-11-5	PETN	0.075	NJ	0.2	0.016	-	1
24	A-972	2418A-972SS-C	0	0.5	78-11-5	PETN	0.073	NJ	0.2	0.016	-	1
<b>RDX</b>												
16	K-1542	1641-K1542L-SS-D-SO-DUP	0	0.25	121-82-4	RDX	6.9	=	-	0.043	0.2	1
16	K-1542	1641-K1542L-SS-D-SO	0	0.25	121-82-4	RDX	5.5	=	-	0.041	0.19	1
6	B-1013	0628B-1013-SS-C-SO	0	0.5	121-82-4	RDX	1.1	=	0.2	0.043	-	1
6	B-1001	0628B-1001-SS-C-SO	0	0.5	121-82-4	RDX	0.39	=	0.19	0.041	-	1
6	B-1016	0628B-1016-SS-M-SO	0	0.25	121-82-4	RDX	0.29	=	0.19	0.041	-	1
6	B-1016	0628B-1016-SS-C-SO	0	0.5	121-82-4	RDX	0.087	J	0.19	0.04	-	1
6	B-1091	0628B-1091-SS-C-SO	0	0.5	121-82-4	RDX	0.067	J	0.2	0.043	-	1

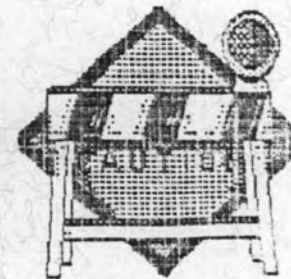
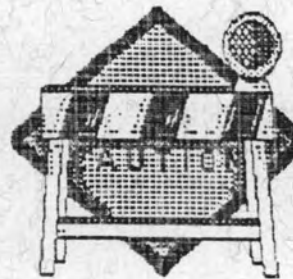
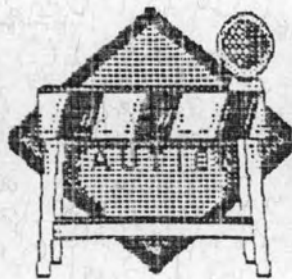
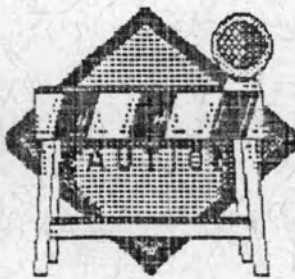
Footnotes



## Appendix D: FWDA Site and Safety Plan

# SITE AND SAFETY PLAN

## FORT WINGATE DEPOT FORT WINGATE, NEW MEXICO



**SITE SAFETY PLAN**  
**FORT WINGATE DEPOT**  
**FORT WINGATE, NEW MEXICO**

### **EXPLORATION ACTIVITIES**

The objective of this investigation is to characterize the possible extent of contamination in the upper soils which may be excavated. Specific objectives include:

- \* Characterize the geology of the site.
- \* Collect soil samples to quantify substance at the site.
- \* Collect soil samples to characterize index and engineering properties.

### **SUBSTANCE EXPLORATION ACTIVITIES**

The subsurface exploration will consist of drilling eight (8) soil borings to average depth on the order of 65 feet below ground surface. Soils are anticipated to be sand and/or clay with no stiff soils, hard rock or cobble drilling. All borings to be advanced to the depths as specified by the Government's onsite representative or to practical auger refusal.

Envirotech, Inc. proposes to use a CME-55 Mobile Drill Rig with eight inch hollow stem auger flights. Soil sampling to be done using standard split-tube soil sampler. All drilling equipment to be decontaminated with a compressed steam cleaner.

## KEY PERSONNEL

Site Health and Safety Officer:  
Alternate:

Project Manager:  
Alternate:

Site Supervisor:

Consolidated Coal Project Manager:

Following individual(s) located on Site will have the authority and responsibility in change levels of protection and when necessary shut down the operation:

- 1)
- 2)

## **SECTION A. PERSONNEL ROLES**

### • **Health and Safety Officer:**

The health and safety officer (hereinafter referred to as HSO) is responsible for maintaining proper medical surveillance (including pre-entry and exit examinations if required), providing hazard communication information, training employees in safe operating procedures, and advising the project manager on any matters concerning the health and safety of employees or the public. The HSO may be required to perform various types and area of personnel monitoring for purposes of verifying worker exposure and proper selection of personal protective equipment. The HSO should be consulted before any changes in the recommended procedures or levels or protective clothing are made.

### • **Project Managers:**

The project manager has the primary responsibility for the fulfillment of the terms of the contract. He must oversee operations and ensure that all legal and safety requirements are met. It is his duty to keep the project on schedule, within budget, and to communicate daily with the client regarding the progress toward the specified goals.

### • **Site Supervisor:**

The site supervisor is the on-site coordinator and overseer of operations. It is his duty to maintain site security, supervise the laborers and technicians, ensure that all procedures (health and safety, decontamination, protective equipment, etc.) are followed.



- \* Telephone numbers for emergency services offered are as follows:

GALLUP FIRE DEPARTMENT: 863-1418  
GALLUP POLICE DEPARTMENT: 863-3965

- \* Prior to mobilization at the Site, personal contact will be made with emergency room personnel, the local fire department and police.
- \* Emergency first aid equipment will be readily available on-site. Personnel on-site have received first aid and medical emergency training.
- \* Sufficient water and/or dry chemical fire extinguishers and neutralizing agents will be maintained on site to copy with any situation until emergency services can arrive.

#### Flammable Conditions

In the event that gasoline vapors exceed 50% of the lower explosion limit or strong odors are detected in sewers or residences, the following actions will be taken:

- \* Eliminate all ignition sources, no smoking, isolate electric switches from odors. Do not turn on/off electric switches if strong odors are present unless the switch is intrinsically safe. Do not allow cars to operate or travel over manholes.
- \* Remove personnel away from odors, structures, or manhole covers.
- \* Call the following in the listed sequence:
  - 1) Fire Department: 863-1418
  - 2) EPA:
  - 3) ESDA:

Provide answering personnel with the call back number(s), locations, directions and situation assessment.

In the event that gasoline vapors are greater than 20% of the LEL, but less than 50% in sewers or residences and/or slight to mild gasoline odors are present (NOTE: gasoline odor threshold is 0.005 ppm - ppm, lower explosion limit is 1.4% (14.00 ppm) - 50% (500.00 ppm):

- \* Eliminate all ignition sources - No Smoking
- \* Call the following in the listed sequence:
  - 1) Fire Department: 863-1418
  - 2) Police Department: 863-3965

Provide answering party call back number, location, directions, and situation assessment.

### Fire or Explosion

In the event of a fire or explosion, the local fire department will be summoned immediately. Upon their arrival, the field supervisor will advise the fire commander of the location, nature and identification of the hazardous materials on-site.

If it is safe to do so, employees may:

- 1) Use fire fighting equipment available on site to control or extinguish the fire.
- 2) Remove or isolate flammable or other hazardous materials which may contribute to the fire.
- 3) Extinguish other ignitable sources.

### Evacuation

Evacuation will be conducted immediately, without regard for equipment, under conditions of extreme emergency.

### **SECTION G:       HAZARD TRAINING**

Any personnel not employed by **Envirotech Inc.** must read and sign the Hazard Training Program designed by **Envirotech Inc.** before entering work zone. The training will advise personnel on dangers that exist and precautions to follow to reduce the risk of injury. (NOTE: Work zone will be determined by Consolidation Coal Co.)

### **SECTION H:       EQUIPMENT SAFETY**

All equipment shall be operated by one person only, no passengers are allowed at any time. Employees and by-standers in the work zone should be aware that equipment can become mobil at anytime.

### **SECTION I:       BORING**

All persons around work zones should be aware of boring in progress. Drill rigs pose hazards due to their moving parts. Drilling zones will be marked with some type of safety barrier. Personnel should remain at a suitable distance from safety barriers, due to the possibility that walls could collapse at anytime during excavations.

**HARD HATS, SAFETY GLASSES, AND STEEL-TOED BOOTS MUST BE WORN AT ALL TIMES.**

## GENERAL HEALTH AND SAFETY REQUIREMENTS

### INCIDENT REPORTING

A health and safety logbook will be maintained onsite and should contain such information:

- weather information
- employees onsite
- level of protection equipment worn
- monitor instrumental readings
- safety violations

Injuries, exposures, illnesses, safety infractions, and other incidents specified in Operating Procedure HS-502 included as a part of **ATTACHMENT A** must be reported using a Health and Safety Report Form within a 24 hours of occurrence.

## **SAFETY COMPLETION REPORT**

Upon completion of the work covered by this Health and Safety Plan, a Safety Completion Report must be completed. The report should include a complete evaluation of this plan and all approved modifications, names and affiliations of individuals who worked on the site, exposure monitoring data within monitoring dates and decisions made, summary of incidence and action taken, if any, and recommendations for improving the health and safety at similar sites.

## **SAFETY BRIEFING**

Before onsite work commences, all employees assigned to work at the site must be briefed by the Site Safety Officer (SSO) on the specific health and safety requirements contained in this plan. The SSO giving the briefing should test the knowledge and understanding of the provisions of the Health and Safety Plan and shall not allow anyone who does not appear to understand the provisions perform work in excluded areas.

## DISTRIBUTION OF THE HEALTH AND SAFETY PLAN

Before work begins, a copy of the plan must be provided to each employee assigned to the site and for each subcontractor assigned to perform work on the site. Individuals assigned to work must acknowledge receipt of the plan and agree to comply with its provisions by signing a compliance agreement.



## **PROJECT SAFETY ORGANIZATION**

The Project Manager (PM) and the (SSO) have overall responsibility for implementing safety. The Site Safety Officer (SSO), reports to the PM, directs day-to-day health and safety activities in the field and must be present at work whenever work is being conducted at the site by any employees. The PM and the SSO have the authority to suspend work if the public is threatened and to remove individuals from the site for engaging in activities that jeopardize the health and safety of themselves or others.

**POTENTIAL HEALTH AND SAFETY HAZARDS**

	PHASE I ASSESSMENT	DRILLING	SOIL SAMPLING
Inhalation Hazard			
Contaminated Soil Contact		X	X
Noise Hazard			
Heat Stress		X	X
Electrical (Transformer and buried powerlines)			
Potential Fire/Explosion			
Contact with Contaminated Liquids			
Cold Stress			
Collapsing of Structure on Personnel			
Physical Injury		X	X
Overhead Powerlines			
Buried Tanks			
Underground Pipes		X	X
Skin Hazard			
Ventilation Problem			
Spillage of Liquids			
Vandalism			
Equipment Freezing			
Leaks in Lines			
Level of Protection	Hand hats, boots, eye protection only	Level D	Level D
Air Monitor	N/A	N/A	PID Screening
Precaution - See Section A		X	

**SAFETY AND HEALTH RISK ANALYSIS VS. SITE TASK/OPERATION**

ACTIVITY	POTENTIAL HAZARD	PRECAUTIONS
Soil Boring Construction	Contact with contaminated soils	<ul style="list-style-type: none"> <li>● Wear gloves when handling augers</li> <li>● Do not kneel on ground</li> </ul>
	Electrical	<ul style="list-style-type: none"> <li>● Locate all utilities prior to construction</li> <li>● Locate drill rig away from all overhead powerlines</li> </ul>
	Underground pipes	<ul style="list-style-type: none"> <li>● Locate all utilities prior to construction</li> </ul>

## STANDARD OPERATING PROCEDURES

### A. PERSONAL PRECAUTIONS

- \* Eating, drinking, chewing gum or tobacco, smoking, or practice the increased the probability of hand-to-mouth transfer and indigestion of material is prohibited in any area designated contaminated.
- \* Contact with contaminated or suspected contaminated sources should be avoided. Whenever possible, do not walk through puddles, discolored surfaces, kneel on ground, lean, sit or place equipment on drums, containers, or the ground.
- \* Medicine and alcohol can potentiate the effects from exposure to toxic chemicals. Prescribed drugs should not be taken by personnel at hazardous waste operations where potential for absorption, inhalation, or indigestion of toxic substances exists unless specifically approved by a qualified physician. **Alcoholic beverage intake is prohibited.**
- \* All personnel must be familiar with standard operating safety procedures and any additional instructions and information contained in the Site Safety Plan.
- \* All personnel must adhere to the information contained in the Site and Safety Plan.

## FIRST AID MEASURES/MEDICAL EMERGENCIES

In the event that personnel exposure symptoms occur, the following procedures will be used:

### Petroleum Products:

- \*Eye Contact: Flush eye with copious amount of water and repeat until irritation is eliminated. If prolonged irritation occurs for more than 15 minutes, seek medical attention.
- \*Skin Contact: Washed exposed area with soap and water. If dermatitis or severe reddening occurs, seek medical attention.
- \*Inhalation: Remove person into fresh air. If symptoms occurs for more than 15 minutes, seek medical attention.

## Emergency Action-Standard Operation Procedures

Name, address, and telephone number of the nearest medical treatment facility. This will be conspicuously posted. A map and directions for locating the facility, plus the travel time, will be readily available.

Provide answering party call back number, location, directions, and situation, and situation assessment.

### Fire or Explosion

In the event of a fire or explosion, the local fire department will be summoned immediately. Upon arrival, the field supervisor will advise the fire commander of the location, nature and identification of the hazardous materials onsite.



If it is safe to do so, employees may:

- 1) Use fire fighting equipment available to control or extinguish the fire.
- 2) Remove or isolate flammable or other hazardous materials which may contribute to the fire.
- 3) Extinguish other ignitable sources.

### Evacuation

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### Equipment Safety

All equipment shall be operated by one person only, no passengers are allowed at any time. Employees and bystanders in the work zone should be aware that equipment can become mobile at anytime.

### Boring

All persons around work zones should be aware of boring in progress. Drill rigs pose hazards due to their moving parts. Drilling zones will be marked with some type of safety barrier. Personnel should remain at a suitable distance from the safety barrier, due to the possibility that walls could collapse anytime during the drilling process.

**HARD HATS, SAFETY GLASSES, AND STEEL-TOES BOOTS  
MUST BE WORN AT ALL TIMES**

**NON-INTRUSIVE ACTIVITIES**

Non-intrusive activities that will be performed at the site consist of the following:

- o Field mobilization/demobilization;
- o Decontamination; and
- o General support activities carried on outside of the exclusion zone.

The mobilization/demobilization, field surveys and general support activities are considered to be low hazard. These activities will be performed in the open. It is unlikely that direct contact by site personnel with hazardous substances will occur during the performance of these activities.

The decontamination activities are considered to be a low to medium hazard. Direct contact by site personnel with hazardous substances is possible during the decontamination of personnel and equipment. Exposure could occur by contact with decontamination fluids, spent personal protective equipment and through the handling of equipment. Inhalation, ingestion and dermal contact exposure routes are indicated.

**INTRUSIVE ACTIVITIES**

Intrusive activities that will be performed at the site consist of drilling and soil sampling, and groundwater level measurements.

The drilling and sampling activities associated with the exploration is considered to be a medium hazard. Direct contact by site personnel with hazardous substances is likely. Exposure could occur by contact with contaminated equipment, by the handling of auger cuttings and samples and by the release of volatiles into the breathing zone from the borehole. Inhalation, ingestion and dermal contact exposure routes are indicated.

#### DETECTABILITY

Visual observations and an HNu photo-ionization detector will be used to assess whether or not volatile organic compounds have been encountered during performance of the work.

the SSO will stop the work and the work party will leave the exclusion zone, decontaminate, and proceed to the support zone. Work will remain stopped pending assessment and evaluation by the SSO and HSO.

During intrusive activities, if VOC's are detected in the breathing zone at a concentration greater than 1 ppm above background averaged over a 15 minute period, the top of borehole will be monitored for the presence of Benzene using the Sensidyne pump and detector tubes. At a minimum one set of measurements will be taken at one hour intervals. Monitoring will be discontinued when VOC concentrations in the breathing zone are less than or equal to 1 ppm above background averaged over a 15 minute period.

#### DECONTAMINATION PROCEDURES

##### General

Decontamination of equipment and personnel will be performed to limit the migration of contaminants off-site and between work zones at the site.

Equipment and other tools will be cleaned prior to site entry to remove grease, oil, encrusted dirt or other materials. Special attention will be given to the rear portions of drill rigs, auger flights (inside and outside), drill rods and sampling tools. The SSO will inspect all equipment prior to use on-site.

Reusable sampling equipment, auger flights, and any other tools used for intrusive work will be decontaminated between borings. Cleaning may consist of scraping and scrubbing to remove encrusted materials followed by a soap and water wash, if

necessary, and potable water rinse using a high-pressure steam cleaning unit. Following decontamination, clean equipment will be stored on plastic sheeting and/or sawhorses if not immediately reused.

Soil sampling tools (split-spoons) will be cleaned between each use by soap and water wash and potable water rinse.

At the conclusion of work at the site, the drill rig and other equipment will be thoroughly cleaned using the methods previously described. The SSO will inspect all equipment leaving the site for adequacy of decontamination.

#### Personnel Decontamination

Personnel decontamination will be conducted at a decontamination area setup outside of each exclusion zone. Decontamination will consist primarily of soap and water washing and water rinse of exterior protective gear followed by doffing of the gear.

The general decontamination sequence for activities conducted at Modified Level "D" follows:

1. Wash outer gloves and boots;
2. Rinse outer gloves and boots;
3. Remove tape at wrists and boot interface;
4. Remove outer gloves;
5. Remove coverall;
6. Remove and rinse goggles and hardhat; and
7. Remove inner gloves.



The general decontamination sequence for activities conducted at Level "C" follows:

1. Wash and rinse coverall with hand pump sprayer;
2. Wash outer gloves and boots;
3. Rinse outer gloves and boots;
4. Remove tape at wrists, boot and hood interface;
5. Remove outer gloves;
6. Remove and rinse hardhat;
7. Remove coverall;
8. Remove APR, discard cartridges, rinse APR; and
9. Remove inner gloves.

Gloves and coveralls should be removed by turning inside out. Ground cloths, gloves, coveralls and APR cartridges will be placed into plastic trash bags and stored at the contamination reduction zone.

Decontamination fluids will be collected and will be stored in 55 gallon drums with lids at the contamination reduction zone.

Respirators will be rinsed with potable water in the field after each use and will be cleaned at the end of the day using a soap and water wash followed by a potable water rinse. Respirators will be inspected daily for damage, missing parts and proper function. See Attachment 1.

Reusable protective equipment worn by personnel performing field activities will be rinsed with potable water after each use

and will be cleaned at the end of each day in the manner prescribed for respirators. Reusable items will be air-dried and placed into plastic bags for storage.

Decontamination equipment and supplies consist of the following:

- o Potable water;
- o Washtubs, 3 minimum;
- o Alconox, follow mixing instructions;
- o MSA disinfectant;
- o Brushes, hand sprayers;
- o Plastic sheet;
- o 5-gallon buckets with lids;
- o 55-gallon drums with lids; and
- o Garbage bags.

#### Equipment Decontamination

Heavy equipment (i.e., drill rig, HSA) decontamination will be conducted at the exclusion zone. The general decontamination sequence for activities conducted at both Modified Level "D" and Level "C" follows:

1. Lay down plastic ground cloth;
2. Steam rinse with potable water to remove soils;
3. Steam wash with potable water; and
4. Steam rinse with potable water.

Sampler and drive rod decontamination will be conducted at the exclusion zone. The general decontamination sequence follows:

1. lay <sup>↓</sup>down plastic ground cloth;
2. wash and scrub with detergent and potable water;
3. air dry.

Decontamination fluids will be collected and will be stored in 55 gallon drums with lids at <sup>t</sup>he exclusion zone. ←  
A steam cleaner driven by a portable generator will be required in addition to the decontamination equipment and supplies.

#### CONTROL OF FIELD WORK-GENERATED WASTE MATERIALS

Expendable materials having low probability of contamination will be collected on a routine basis. The → Materials will be placed into trash bags and will be temporarily stored at <sup>t</sup>he exclusion zone. Daily the materials collected will be putout for the municipal trash pick-up. Expendable materials include:

- \* Decontaminated expendable personnel protective equipment
- \* Ground cloths; and
- \* Domestic refuse.

Drum labeling will consist of painting a number on the outside wall of the drum and identification with a self-adhesive label indicating project number, contents, date and initial of person affixing the label. Chain-of-Custody procedures and Quality Control Plan will be followed. Drum labels will be kept in a secure place at all times.



### Level of Protection/Action Guidelines

The following activities will be conducted at EPA Level "D" Protection:

- o Field mobilization/demobilization; and
- o General support activities.

**Level "D" action guidance:** If HNu (11.7 eV probe) readings taken in the breathing zone are greater than 5 ppm above background averaged over a 15 minute period, the SSO will stop work and the work party will proceed to the support zone. Work will remain stopped pending assessment and evaluation by the SSO and HSO.

The following activities will be conducted at EPA Modified Level "D" Protection:

- o Decontamination;
- o Drilling and sampling; and
- o Groundwater level measurements.

**Modified Level "D" action guidance:** If HNu (11.7 eV probe) readings taken in the breathing zone are greater than 5 ppm above background averaged over a 15 minute period, the SSO will stop the work and the work party will upgrade to Level "C" Protection. If HNu or OVA readings taken in the breathing zone return to a level that is equal to or less than 5 ppm above background averaged over a 15 minute period, the SSO will stop the work and the work party will downgrade to Modified Level "D" Protection. If HNu or OVA readings taken in the breathing zone are greater than 10 ppm above background averaged over a 15 minute period,



desired orientation due to physical restraints at the site. Additional engineering controls will not be required.

#### PERSONAL PROTECTIVE EQUIPMENT

##### Level "D" Protection

Activities performed at United States Environmental Protection Agency (EPA) Level "D" will require site personnel to wear the following protective ensemble:

- o Hard hat;
- o Goggles or safety glasses;
- o Work gloves; and
- o Work boots.

EPA Level "D" is considered to be the minimum protection for personnel at the site.

##### Modified Level "D" Protection

Activities performed at EPA Modified Level "D" will require site personnel to wear the following protective ensemble:

- o Hard hat;
- o Goggles or safety glasses;
- o Face shield;
- o Coverall, Tyvek or Rytex;
- o Undergloves, latex;
- o Outergloves, Neoprene;
- o Boots, calf-high, Neoprene or PVC, steel toed and shanked; and
- o Coveralls to be fully taped at wrists and boot interface with duct tape.

## SITE SPECIFIC HEALTH AND SAFETY REQUIREMENTS

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### SPECIAL MEDICAL TESTS

Special medical tests will not be required.

### SPECIAL TRAINING REQUIREMENTS

Special training beyond the basic 40-hour health and safety course will not be required.

### SITE CONTROL

Site control measures will not be required.

### WORK ZONES

A 25 ft radius exclusion zone will be established around the drill rig at each boring.

The area at the vicinity of the drilling operation will be used for equipment decontamination, drum storage and the management of solid waste from personnel decontamination. The drums will be used to store excess auger cuttings and decontamination fluids.

The support zone will consist of a van. The van will be utilized as a field office, for sample storage, for supply/equipment storage and as a personnel refuge. The support zone is located predominantly up-wind of the area being explored.

### ENGINEERING CONTROLS

The field team will endeavor to position the drill rig facing upwind while conducting intrusive activities. It is recognized that it will not always be possible to achieve the

?

Personnel protective equipment places an additional strain on the wearer when performing work that requires physical activity. Heat exhaustion or heat stroke are possible, especially during warm weather. All personnel should be cognizant of the physical condition of fellow workers. A detailed description and treatment of heat stress is included as a part of Attachment 1.

Known underground facilities, structures and utilities have been located from available record information. The locations must be considered as being approximate. Be aware and always suspect the existence of underground utilities such as electrical, power, gas, petroleum, telephone, sewer and water.

Special precaution must be taken when operating machinery (i.e., drill rig) in the vicinity of electrical power lines. Electricity can shock, burn and result in death. All overhead electrical power lines are to be considered energized and dangerous. Walk completely around the machine before beginning work at a site in the vicinity of power lines. Determine what the minimum distance from any point on the machine to the nearest power line will be when operating. Do not raise a mast or boom, or operate the machine if this distance is less than 20 ft.

Assume that all animals are potentially dangerous. A person who is bitten by an animal may become infected by tetanus or rabies. Warm-blooded animals, such as dogs, cats, bats, rats, and squirrels can transmit rabies. Rabies is transmitted when the saliva from an infected animal contacts an open wound (even a scratch)

or any normal body opening, such as the mouth or eye. The infected animal can transmit rabies by biting or licking another animal or person.

## PROHIBITED ACTIVITIES

The following activities are prohibited:

- \* Smoking, eating, and drinking while in the exclusion zone and contamination-reduction zones;
- \* Use of drugs, alcohol, or controlled substances while onsite.
- \* Wearing respirators while supporting facial hair that could interfere with a proper fit.
- \* Unauthorized removal of hazardous material from the site.

At the start of each work day, personnel taking drugs that day prescribed by a physician shall advise the SSO. At a minimum, the identification of the drug being taken shall be given to the SSO. Personnel will be required to obtain prior clearance from the HSO and/or the CHSO before being allowed to work at the site while taking prescription drugs.

## VISITOR CLEARANCE

Visitor clearance will require clearance by the SSO and/or HSO. Visitors will only be allowed in support zone areas unless compliance with the HSP is acknowledged.



**ATTACHMENT 1**  
**OPERATING PROCEDURES**

H-102 HEAT STRESS

H-501 DECONTAMINATION

H-502 INCIDENT REPORTING

H-509 SAFETY GUIDELINES FOR DRILLING

## OPERATING PROCEDURE NO. HS-102

### 102.0 Heat Stress

#### 102.1 Purpose

The purpose of this OP is to provide general information on heat stress and the methods that can be utilized to prevent or minimize the occurrence of heat stress.

Adverse climatic conditions are important considerations in planning and conducting site operations. Ambient temperature effects can include physical discomfort, reduced efficiency, personal injury, and increased accident probability. Heat stress is of particular concern while wearing impermeable protective garments, since these garments inhibit evaporative body cooling.

#### 102.2 Requirements

The NIOSH criteria document for heat stress recommends that environmental monitoring and other preventive measures be adopted in hot work environments. However, the provisions are not directly applicable to employees who are required to wear impermeable protective clothing. The reason for this exception is that impermeable clothing prevents the evaporation of sweat, which is one of the most important cooling mechanisms of the body. There is no recognized health standard protection for workers wearing impermeable protective clothing and respirators in hot environments.

The ACGIH has adopted a TLV for heat stress. These guides relate to work/rest regimes.

### 102.3 Additional Hazard

The use of Personal Protective Equipment of the types commonly used for hazardous waste work can place stress on the body. One common problem with the use of personal protective equipment especially in hot environments is heat stress. Protective clothing can cause excessive sweating and can prevent the body from properly regulating body temperature.

### 102.4 Types of Heat Stress

Heat stress is the aggregate of environmental and physical work factors that constitute the total heat load imposed on the body. The environmental factors of heat stress are the air temperature, radiant heat exchange, air movement, and water vapor pressure. Physical work contributes to the total heat stress of the job by producing metabolic heat in the body in proportion to the intensity of the work. The amount and type of clothing also affect the heat stress.

Heat strain is the series of physiological responses to heat stress. When the strain is excessive for the exposed individual, a feeling of discomfort or distress may result, and, finally, a heat disorder may ensue. The severity of strain will depend not only on the magnitude of the prevailing stress, but also on the age, physical fitness, degree of acclimatization, and dehydration of the worker.

Heat disorder is a general term used to describe one or more of the following heat-related disabilities or illnesses:

- Heat cramps - painful intermittent spasms of the voluntary muscles following hard physical work in a hot environment. Cramps usually occur after heavy sweating, and often begin at the end of a work shift.
- Heat exhaustion - profuse sweating, weakness, rapid pulse, dizziness, nausea, and headache. The skin is cool and sometimes pale and

clammy with sweat. Body temperature is normal or subnormal. Nausea, vomiting, and unconsciousness may occur.

- Heat stroke - sweating is diminished or absent. The skin is hot, dry, and flushed. Increased body temperature, which, if uncontrolled, may lead to delirium, convulsions, coma, and even death. Medical care is urgently needed.

#### 102.5 Methods of Controlling Heat Stress

As many of the following control measures as are appropriate to site conditions should be utilized to aid in controlling heat stress:

- Provide for adequate liquids to replace lost body fluids and replace water and salt lost from sweating. Encourage personnel to drink more than the amount required to satisfy thirst. Thirst satisfaction is not an accurate indicator of adequate salt and fluid replacement.
- Replace fluids with water, commercial mixes such as Gatorade or Quick Kick, or a combination of these.
- Establish a work regimen that will provide adequate rest periods for cooling down. This may require additional shifts of workers.
- Wear cooling devices such as vortex tubes or cooling vests beneath protective garments.
- Take all breaks in a cool rest area (77°F is best).
- Remove impermeable protective garments during rest periods.
- Do not assign other tasks to personnel during rest periods.
- Inform personnel of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress.

## 102.6 Monitoring

### 102.6.1 Temperature

The heat stress of an area can be monitored by the Wet Bulb Globe Temperature Index (WBGT) technique. Where heat stress monitoring is required, a heat stress monitoring device, such as the Wibget Heat Stress Monitor (Reuter Stokes) shall be utilized.

The WBGT shall be compared to the Threshold Limit Values (TLV) outlined by the ACGIH TLV guides, and a work-rest regimen shall be established in accordance with the WBGT. Note that 5°C must be subtracted from the TLVs for heat stress listed to compensate for the wearing of impermeable protective clothing.

### 102.6.2 Medical

In addition to the provisions of the WCC medical surveillance program, on-site medical monitoring of personnel shall be performed by qualified medical personnel for projects where heat stress is a major concern. Blood pressure, pulse, body temperature (oral), and body weight should be taken and recorded a minimum of three times daily (prior to work, at mid-shift, and after work).

## 102.4 References

American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances in the Work Environment, 1984-85.

Olishifski, J.B., Fundamentals of Industrial Hygiene, National Safety Council, 1983.

National Institute for Occupational Safety and Health, The Industrial Environment - Its Evaluation and Control, 1973.



OPERATING PROCEDURE HS-102  
SUPPLEMENT  
HEAT STRESS MONITORING/MANAGEMENT

General

The following work/rest schedule shall be used as a guideline:

<u>Temperature Range (°F)</u>	<u>Work Time (Min)</u>
80 - 85	60
85 - 90	30
> 90	15

The SSO can modify the work schedule based on monitoring results, i.e., changing weather conditions or worker responses. A sheltered (air-conditioned, if possible) or shaded rest area will be provided. At each monitoring break, each worker shall consume one quart of fluid (water or Gatorade).

A thermometer will be kept in the vicinity of the workers and read during each monitoring break. The temperature and other weather-related observations will be recorded in the health and safety log book.

Heat Stress

Heat stress usually is a result of protective clothing decreasing natural body ventilation although it may occur at any time work is being performed at elevated temperatures.

If the body's physiological processes fail to maintain a normal body temperature because of excessive heat, a number of physical reactions can occur ranging from mild (such as fatigue, irritability, anxiety and decreased concentration, dexterity or movement) to fatal. Because heat stress is one of the most

common and potentially serious illnesses that hazardous waste sites, regular monitoring and other preventative measures are vital.

### Heat Stroke

Heat stroke is an acute and dangerous reaction to heat stress caused by a failure of heat regulating mechanisms of the body - the individual's temperature control system that causes sweating stops working correctly. Body temperature rises so high that brain damage and death will result if the person is not cooled quickly.

- **Symptoms:** Red, hot dry skin, although person may have been sweating earlier, nausea, dizziness, confusion, extremely high body temperature, rapid respiratory and pulse rate, unconsciousness or coma.
- **Treatment:** Cool the victim quickly. If the body temperature is not brought down fast, permanent brain damage or death will result. Soak the victim in cool but not cold water, sponge the water with cool water or pour water on the body to reduce the temperature to a safe level (102°F). Observe the victim and obtain medical help. Do not give coffee, tea or alcoholic beverages.

### Heat Exhaustion

Heat exhaustion is a state of very definite weakness or exhaustion caused by the loss of fluids from the body. This condition is much less dangerous than heat stroke, but it nonetheless must be treated.

- **Symptoms:** Pale, clammy, moist skin, profuse perspiration and extreme weakness. Body temperature is normal, pulse is weak and rapid, breathing is shallow. The person may have a headache, may vomit and may be dizzy.
- **Treatment:** Remove the person to a cool, air conditioned place, loosen clothing, place in a head-

low position and provide bed rest. Consult physician, especially in severe cases. The normal thirst mechanism is not sensitive enough to ensure body fluid replacement. Have patient drink 1 to 2 cups of water immediately and every 20 minutes thereafter, until symptoms subside. Total water consumption should be about 1 to 2 gal per day.

### Heat Cramps

Heat cramps are caused by perspiration that is not balanced with adequate fluid intake. Heat cramps are often the first sign of a condition that can lead to heat stroke.

- **Symptoms:** Acute painful spasms of voluntary muscles e.g., abdomen and extremities.
- **Treatment:** Remove victim to a cool area and loosen clothing. Have patient drink 1 to 2 cups water immediately and every 20 minutes thereafter, until symptoms subside. Total water consumption should be 1 to 2 gal per day. Consult with physician.

### Heat Rash

Heat rash is caused by continuous exposure to heat and humid air and aggravated by chafing clothes. The condition decreases ability to tolerate heat.

- **Symptoms:** Mild red rash, especially in areas of the body in contact with protective gear.
- **Treatment:** Decrease amount of time in protective gear and provide powder to help absorb moisture and decrease chafing.

## OPERATING PROCEDURE HS-501

### 501.0 Decontamination

#### 501.1 Purpose

Decontamination of equipment and personnel should be performed to limit the migration of contaminants from hazardous waste sites and between work zones on the sites.

#### 501.2 Equipment Decontamination

All major reusable equipment and other tools used for site investigation activities should be decontaminated prior to leaving the site area. Cleaning should consist of scrubbing to remove encrusted materials followed by a detergent-and-water wash and potable water rinse using a high-pressure low volume water spray or steam cleaning unit. Additional rinses with other solvents, such as methanol and hexane, may be used if warranted by the nature of the chemicals encountered.

Decontamination should be performed at a designated equipment decontamination area on the site. An excavated sump may be used to collect wash water as needed. Following decontamination, the clean equipment should be stored on plastic sheeting.

The under carriage of all vehicles (e.g., trucks, etc.) should be cleaned prior to driving them off the site. At the conclusion of site work, all major equipment should be thoroughly cleaned using the method described above.

#### 501.3 Personnel Decontamination

Decontamination of personnel should be performed at a designated location on the site. Personnel decontamination should consist primarily of detergent-and-water washings and water rinse of exterior protective gear to remove contaminants,

followed by doffing of the gear. Coveralls should be removed by turning them inside out. A procedure appropriate to the degree of contamination should be established. A general sequence of doffing procedures is outlined below. The extent of washing required, or modifications to the sequence, may be specified as appropriate.

Typical steps in decontamination:

1. wash work gloves and boots;
2. rinse work gloves and boots;
3. wash and rinse outer protective coverall and respirator;
4. untape mask, wrists, ankles;
5. remove respirator mask (also goggles, if worn);
6. remove boots;
7. remove outer suit (also gloves, hard hat);
8. wash and rinse surgical gloves;
9. remove inner Tyvek coverall;
10. remove surgical gloves;
11. shower, if desired, and redress.

501.4 Containerization of Decontamination By-Products

All contaminated materials (i.e., gloves, coveralls, decontamination water) generated during decontamination should be collected and containerized. Final disposal procedures depend on the level of contamination of the materials.



Hazardous Waste Management Practice  
Health and Safety Manual

501.4 Containerization of Decontamination By-Products

All contaminated materials (i.e., gloves, Tyvec, etc.) generated during decontamination should be collected, containerized, and shipped to a licensed hazardous waste disposal facility as appropriate.

## OPERATING PROCEDURE NO. HS-502

### 502.0 Incident Reporting

#### 502.1 Policy

All health and safety incidents that occur during field and laboratory activities associated with investigations and remediation of sites containing hazardous materials must be reported to management.

#### 502.2 Definitions

A health and safety incident is any event listed below:

- Illness resulting from chemical exposure or unknown causes.
- Physical injury, including those that do not require medical attention.
- Fire, explosions, and flashes resulting from activities performed by WCC and its subcontractors.
- Property damage resulting from activities performed by WCC and its subcontractors.
- Vehicular accidents occurring on-site or while travelling to and from sites.
- Infractions of safety rules and requirements.
- Unexpected chemical exposures (indicated by irritation of eyes, nose, throat, or skin).

#### 502.3 Reporting Procedures

##### 502.3.1 Reporting Format

Incident reports shall be prepared by completing Form HS-502. This form may be obtained from any WCC health and safety officer.

### 502.3.2 Responsible Party

Reports of incidents occurring in the field shall be prepared by the site safety officer or, in the absence of the site safety officer, the supervising field engineer, witness, or injured/exposed individual.

### 502.3.3 Filing

A report must be submitted to the health and safety officer of the business unit to which the project manager belongs within 24 hours of each incident involving medical treatment. In turn, the health and safety officer must distribute copies of the report to the corporate health and safety administrator and the corporate health and safety officer. When an injury or illness is reported, the business unit health and safety officer must deliver a copy of the report to the business unit or operating group personnel department so that a Worker's Compensation Insurance Report can be filed if necessary. Reports must be received by the personnel department within 48 hours of each qualifying incident.



**OPERATING PROCEDURE NO. HS-509**

509.0 Safety Guidelines for Drilling into Soil and Rocks

509.1 Purpose

The purpose of this operating procedure is to provide guidelines for safe conduct of drilling operations with truck-mounted and other engine-powered, drill rigs. The procedure addresses off-road movement of drill rigs, overhead and buried utilities, use of augers rotary and core drilling, and other drilling operations and activities.

509.2 Application

The guidelines shall be applied for all projects in which truck-mounted or other engine-powered, drill rigs are used. The guidelines are applicable to all employees as well as employees of firms contracted to operate the drill rigs.

509.3 Responsibility and Authority

Drill rig safety and maintenance is the responsibility of the drill rig operator.

509.4 Safety Guidelines

509.4.1 Off-Road Movement of Drill Rigs

Before moving a rig, the operator must do the following:

- \* To the extent practical walk the planned route of travel inspect it for depressions, gulleys, ruts, and other obstacles.
- \* Check the brakes of the truck/carrier, especially if the terrain along the route of travel is rough or sloped.
- \* Discharge all passengers before moving on rough or steep terrain.
- \* Engage the front axle (4x4, 6x6, ect. vehicles) before traversing rough terrain or steep terrain.



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Driving drill rigs along the side of hills should be avoided; however, if side-hill travel becomes necessary, the operator must conservatively evaluate the ability of the drill rig to remain upright while over the hill. The possibility that the presence of the drilling tools on the rig may reduce the ability of the rig to remain upright by raising the center of the mass of the rig must be considered.

Logs, ditches, road curbs, and other long horizontal obstacles should be normally approached and driven over squarely not at an angle.

When close lateral or overhead clearance is encountered, the driver of the rig should be guided by another person on the ground.

Loads on the drill rig and truck must be tied down while the truck is moving and the mast must be in the fully lowered position.

After the rig has been positioned to begin drilling, all brakes and/or locks must be set before drilling begins. If the rig is positioned on a steep grade and leveling of the ground is impossible or impractical, the wheel of the transport vehicle should be blocked and other means of preventing the rig from moving or tipping over employed.

### 509.5 Buried and Overhead Utilities

The location of overhead and buried utility lines must be determined before drilling begins, and their location must be noted on all borings plans and assignment sheets.

When overhead power lines are close by, the drill rig mast should not be raised unless the distance between the rig and the nearest power line is at least 20 feet or whatever distance local ordinances require. The drill rig operator or assistant should walk completely around the rig to make sure that proper distance exists.

When the drill rig is positioned near an overhead line, the rig operator should be aware that hoist lines and power lines can be moved towards each other by wind.

#### 509.6 Clearing the Work Area

Before a drill rig is positioned to drill, the area on which the rig is to be positioned should be cleared of removable obstacles and leveled if sloped. The cleared/leveled area should be large enough to accommodate the rig and supplies.

#### 509.7 Safe Use of Augers

Never place hands or fingers under the bottom of an auger flight when hoisting the flight over the top of another flight in the ground or other hard surfaces, such as the drill rig platform.

Never allow feet to get under the auger flight while the flight is being hoisted.

When an auger is rotating, stay clear of the auger and other rotating components of the drill dig. Never reach behind or around a rotating auger for any reason.

Move auger cuttings away from the auger with a long-handled shovel or spade; never use hands or feet.

Never clean an auger attached to the drill rig unless the transmission is in neutral or the engine is off, and the auger has stopped rotating.

#### 509.8 Safe Use of Hand Tools

Rules described in 29 CFR 1926.301 and 302 should be observed in addition to the guidelines provided below:

- Each tool should be used only to perform tasks for which it was originally designed.
- Damaged tools should be repaired before use or discarded.
- Safety goggles or glasses should be worn when using a hammer or chisel. Nearby co-workers and by-standers should be required to wear safety goggles or glasses also.
- Tools should be kept cleaned and stored in an orderly manner when not in use.

#### 509.9 Safe Use of Wire Line Hoists, Wire Rope, and Hoisting Hardware

Safety rules described in 29 CFR 1926.552 and guidelines contained in the Wire RPE User's Manual published by the American Iron and Steel Institute shall be used whenever wire line hoists, wire rope, or hoisting hardware are used.

#### 509.10 Protective Gear

##### 509.10.1 Minimum Protective Gear

Items listed below should be worn by all members of the drilling team while engaged in drilling activities.

- Hard Hat
- Safety Shoes (shoes or boots with steel toes and shanks)
- Gloves.

29 CFR 1926.100, 101, and 102 should be consulted for additional information.

#### 509.10.2 Other Gear

Items listed below should be worn when conditions warrant their use. Some of the conditions are listed after each item.

- Safety goggles or glasses. Use when: (1) driving pins in and out of drive chains, (2) replacing keys in tongs, (3) handling hazardous chemicals, (4) renewing or tightening gauge glasses, (5) breaking concrete, brick, or cast iron, (6) cleaning material with chemical solutions, (7) hammering or sledging on chisels, cold cuts, or bars, (8) cutting wire lines, (9) grinding on abrasive wheels, (10) handling materials in powered or semi-powered form, (11) scraping metal surfaces, (12) sledging rock bits or core heads to tighten or loosen them, (13) hammering fittings and connections, and (14) driving and holding rivets.
- Safety Belts and Lifelines. Safety belts and lifelines should be worn by all persons working on top of an elevated derrick beam. The lifeline should be secured at a position that will allow a person to fall no more than eight feet.

**ATTACHMENT 2**  
**SAFETY COMPLETION REPORT**

DATE: \_\_\_\_\_

EMPLOYEE NUMBER: \_\_\_\_\_

This form is to serve as the Safety Completion Report for the subject project.

1. Field Work Period: \_\_\_\_\_

2. Personnel onsite during work period:

NAME

AFFILIATION

NAME	AFFILIATION
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Summary of Problems Encountered and Actions Taken:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Recommendations:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# JOB SAFETY & HEALTH PROTECTION

The Occupational Safety and Health Act of 1970 provides job safety and health protection for workers by promoting safe and healthful working conditions throughout the Nation. Requirements of the Act include the following:

## Employers

All employers must furnish to employees employment and a place of employment free from recognized hazards that are causing or are likely to cause death or serious harm to employees. Employers must comply with occupational safety and health standards issued under the Act.

## Employees

Employees must comply with all occupational safety and health standards, rules, regulations and orders issued under the Act that apply to their own actions and conduct on the job.

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor has the primary responsibility for administering the Act. OSHA issues occupational safety and health standards, and its Compliance Safety and Health Officers conduct periodic inspections to help ensure compliance with the Act.

## Inspection

The Act requires that a representative of the employer and a representative authorized by the employees be given an opportunity to accompany the OSHA inspector for the purpose of aiding the inspection.

Where there is no authorized employee representative, the OSHA Compliance Officer must consult with a reasonable number of employees concerning safety and health conditions in the workplace.

## Complaint

Employees or their representatives have the right to file a complaint with the nearest OSHA office requesting an inspection if they believe unsafe or unhealthful conditions exist in their workplace. OSHA will withhold, on request, names of employees complaining.

The Act provides that employees may not be discharged or discriminated against in any way for filing safety and health complaints or for otherwise exercising their rights under the Act.

Employees who believe they have been discriminated against may file a complaint with their nearest OSHA office within 30 days of the alleged discrimination.

## Citation

If upon inspection OSHA believes an employer has violated the Act, a citation alleging such violations will be issued to the employer. Each

citation will specify a time period within which the alleged violation must be corrected.

The OSHA citation must be prominently displayed at or near the place of alleged violation for three days, or until it is corrected, whichever is later, to warn employees of dangers that may exist there.

## Proposed Penalty

The Act provides for mandatory penalties against employers of up to \$1,000 for each serious violation and for optional penalties of up to \$1,000 for each nonserious violation. Penalties of up to \$1,000 per day may be proposed for failure to correct violations within the proposed time period. Also, any employer who willfully or repeatedly violates the Act may be assessed penalties of up to \$10,000 for each such violation.

Criminal penalties are also provided for in the Act. Any willful violation resulting in death of an employee, upon conviction, is punishable by a fine of not more than \$10,000, or by imprisonment for not more than six months, or by both. Conviction of an employer after a first conviction doubles these maximum penalties.

## Voluntary Activity

While providing penalties for violations, the Act also encourages efforts by labor and management, before an OSHA inspection, to reduce workplace hazards voluntarily and to develop and improve safety and health programs in all workplaces and industries. OSHA's Voluntary Protection Programs recognize outstanding efforts of this nature.

Such voluntary action should initially focus on the identification and elimination of hazards that could cause death, injury, or illness to employees and supervisors. There are many public and private organizations that can provide information and assistance in this effort, if requested. Also, your local OSHA office can provide considerable help and advice on solving safety and health problems or can refer you to other sources for help such as training.

## Consultation

Free consultative assistance, without citation or penalty is available to employers, on request, through OSHA supported programs in most State departments of labor or health.

## More Information

Additional information and copies of the Act, specific OSHA safety and health standards, and other applicable regulations may be obtained from your employer or from the nearest OSHA Regional Office in the following locations:

Atlanta, Georgia  
Boston, Massachusetts  
Chicago, Illinois  
Dallas, Texas  
Denver, Colorado  
Kansas City, Missouri  
New York, New York  
Philadelphia, Pennsylvania  
San Francisco, California  
Seattle, Washington

Telephone numbers for these offices, and additional area office locations, are listed in the telephone directory under the United States Department of Labor in the United States Government listing.

Washington, D.C.  
1985  
OSHA 2203

  
William E. Brock, Secretary of Labor

U.S. Department of Labor  
Occupational Safety and Health Administration



## Appendix E: SOP for ISM Soil Sampling

# **Standard Operating Procedure for Incremental Sampling Methodology**

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Revision 1  
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## DOCUMENT REVISION HISTORY

ORIGINAL (MASTER) DOCUMENT REVISION HISTORY				
Revision Number	Revision Date	Revision Summary	Revised By	Reviewed By
1	November 2022	Created SOP following ITRC guidance (2012 and 2020)	Michelle Bourne	Cheryl Montgomery



## 1.0 INTRODUCTION

### 1.1 SCOPE AND APPLICATION

The incremental sampling methodology (ISM) technique offers reduced sample variability and improved sample representativeness for surface and subsurface soils as well as sediments than traditional discrete or composite sampling approaches. This standard operating procedure (SOP) presents a brief summary of the background of the ISM as well as scope, general application, general concepts, equipment and materials, procedures to be followed for implementation, and precautions. The purpose of this SOP is to delineate protocols for the application of ISM field sampling of surface soil. The procedure has been adapted from Interstate Technology and Regulatory Council (ITRC) 2012 and 2020 sampling guidance. ITRC has published a comprehensive guidance for ISM (ITRC 2012) which presents details about the statistical theories on which it is based, how to establish and sample decision units (DUs), field and laboratory processing and subsampling of ISM samples, and other related topics.

The suitability of ISM should be evaluated on a case-by case basis when planning documents are prepared for an environmental investigation to ensure that the resulting analytical data are appropriate to make the decisions required by the project. This evaluation process considers:

1. Planning elements based on the decisions to be made for each potentially complete pathway (based on the conceptual site model), including contaminant distribution, potential hotspot size, future land use scenarios, contaminant fate and transport, regulatory acceptance, etc.
2. Sample preparation procedures to be employed by the analytical laboratory (limitations and impacts on the analytical data due to the various preparation methods that can be employed and the nature of the contaminant to be analyzed).
3. Data evaluation requirements (i.e., the data needing to meet a certain level of confidence). In addition to technical considerations, stakeholders' input should be folded into the planning stages. Consequently, specific field requirements may be outlined in the planning documents for the sampling program implementation to supplement this SOP.

This SOP focuses on the actual collection of ISM samples, not project planning or data evaluation to follow and assumes that successful project planning and scoping have been performed, documented, and agreed to by the project team. DUs are defined so that the exposure point concentration value (estimate of the mean) obtained is relevant to an explicitly articulated end use of the data; therefore, it is imperative that **changes to the DUs or sampling strategy deemed necessary by actual field conditions unanticipated at the time the sampling plan was designed should be made by the project technical lead rather than by field personnel**. This way, field deviations from the approved plan during sample collection will not negatively impact the

adequacy of the data for the planned purpose.

## 1.2 GLOSSARY OF TERMS

**Decision Units:** A DU is a specific area (or volume of soil) about which a decision is to be made. In the ideal and most direct case, the DU and sample unit (SU) are the same; however, a DU may be composed of a single SU, or may include multiple SUs. It is important that the contamination distribution and future use/exposure scenario for the entire area of a DU or SU are consistent. Either the entire or a portion of the SUs composing the DU may be sampled using ISM, and the number of SUs sampled depends on the confidence of the data that are extended from the SUs to the DU. ITRC (2012) provides a Microsoft Excel spreadsheet that allows for the calculation of spatially-weighted DU exposure concentrations from SU exposure concentrations.

**Grid Cell:** A grid cell is a subdivision of the DU. DUs may be divided into uniform-size grid cells, and one increment is collected from each cell, from the same (or different depending on the sample design) relative location within each grid cell. The shape of the cells is not specified—the only criterion for cell shape selection is that the cells should be of equal size (they can be triangular, square, rectangular, etc.) so the increments collected from each cell are equally weighted over the DU.

## 1.3 GENERAL CONCEPTS

The use of standard discrete samples to characterize soil contamination has two significant sources of error:

1. Field sampling error is at least 10 times greater than analytical (laboratory-associated) error.
2. A source of analytical error was found to be that in sample processing and subsampling (a single subsample from the 4- or 8-ounce soil jar is taken at the laboratory).

Depending on the areal and vertical contaminant distribution profile, ISM sampling and processing are designed to minimize these sources of error, resulting in an average concentration that is a more precise and accurate estimate of the average contaminant concentration for the DU.

It is also important to note that the horizon characterized by ISM sampling is usually superficial, although ISM may be implemented at greater depth, resulting in much higher associated sampling costs.

## 2.0 EQUIPMENT AND MATERIALS

The following equipment and materials may be required:

- Spray paint<sup>1</sup>, pin flags, or rope to mark either grid corners or outline the sampling grid
- Incremental sampling tool (i.e., the MI tool developed by the Cold Regions Research and Engineering Laboratory or alternative coring device); stainless-steel spoons or scoops may be used, such that aliquots of equal mass or volume are collected from each aliquot location
- Clean resealable (i.e., Zip-lock<sup>®</sup>) gallon bags, 5-gallon plastic containers, or other appropriate large container for placing the increments; the size of the container should be adequate to hold the entire ISM sample volume, which is approximately 1-2 kilograms
- Coolers and ice for cold storage of samples after collection
- Field logbook and pen with waterproof black ink for field documentation
- Global Positioning System (GPS) instrument or other survey equipment to document locations of DU or SUs
- Personal protective equipment to be worn during sample collection as required by the Health and Safety Plan for the project.

If ISM sampling is used for volatile organic compound analysis, the increments of equal mass are collected with tools such as EnCore<sup>®</sup> sampler and placed in a pre-tared container obtained from the analytical laboratory partially filled with methanol. Note the limitations for sample shipment presented in Section 5, Precautions. Multiple methanol preserved sample containers may be used for one ISM sample if necessary.

### 3.0 INCREMENTAL SAMPLING METHODOLOGY PROCEDURE

Increments (typically 30 and up to 50 based on project-specific sampling design) of soil of approximately of the same weight or volume will be collected within each cell of the DU.

For surface soil sampling, a coring tool may be used to facilitate the rapid collection of uniform, representative increments from a consistent depth interval. This way, equal volumes are collected for each increment and equal mass is obtained under the assumption that the density of the sampled medium is uniform across the cell of the DU. The size of the coring tool will be selected based on the volume of the increments, which is in turn calculated based on number and depth of the increments and the fact that an adequate total sample mass is typically 1-2 kilograms dry weight (to overcome effects of compositional heterogeneity due to the inherent particulate nature of soil and sediment). It is not necessary to determine the location of every increment collected using a GPS instrument, as long as the areal extent of the DU or SU within a DU has been properly identified.

The following procedure will be followed within each DU.

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<sup>1</sup> Avoid if spray paint is likely to affect MI sample quality (e.g., lead and VOC analyses).

- Demarcate the areal extent of the DU in the field using pin flags, spray paint, or rope and fixed with a GPS instrument. Select increments as defined in the project-specific sampling plan.
- Prior to ISM sampling activities, don the personal protective equipment (PPE). Then, collect increments from the depth interval specified in the planning documents (usually up to 6 inches deep) using a coring tool or other method that ensures equal volume is collected for each increment. Unless specifically excluded in the sampling plan, include the vegetative mat in the sampled interval. Note that some plans may require sampling of native soil only; the horizontal limits of sampling will be dependent on past disposal practices and the decision to be made. If used, push the stainless-steel sampler into the soil until the sampler is full and will not penetrate further. Remove the sampler carefully and push the soil out of the sampler with the lever on the side of the instrument.
- Place the sample (increment or aliquot) directly into a large re-sealable bag, 5-gallon bucket, or alternative container (note the above photos show placing the aliquot into a sampler's hand only for aliquot visualization purposes).
- Fill the holes left by sampling using surrounding soil or, if necessary, use sand to bring the subsurface sampling areas back to original grade. Do not include large rocks or pebbles in samples unless they are part of the overall soil matrix. It is not necessary to decontaminate the sampling tool between the increments within a single DU or SU.
- Obtain a pre-tared wide-mouth glass container and methanol from the analytical laboratory for sample aliquot preservation if collecting an ISM sample for volatile organic compound analysis. Collect increments using EnCore™ or TerraCore™ sampling tools. Note that a much smaller increment volume will be collected, resulting in a smaller total sample volume. Place smaller increments into the pre-tared glass containers containing methanol and follow the health and safety precautions associated with methanol handling. To prevent the loss of methanol through volatilization, keep the sample container closed as much as feasible and open only to place sample aliquots within the container.
- Collect the replicate samples from the same DU/SU following a different path, as shown in Figure No. 01. ITRC (2012) has shown that replicate samples may be taken at the same time as the primary sample, by just using another corner of the grid, or off-stepping a designated distance. Establish the specific relative location of the replicate increments within each DU cell in a systematic random manner. For the systematic random sampling design, the location of the first increment is determined randomly, and subsequent increments are collected in the same relative location within each grid, resulting in a serpentine collection pattern ending at the opposite corner or end of the DU from where sampling was started.
- Label the large re-sealable bag containing the total sample volume with indelible ink. Follow the guidance listed under Section 5, Precautions below if methanol preserved

sample containers will be shipped. Bubble-wrap and tape the sample(s) for shipping and place into iced coolers for transport under chain-of-custody protocol to the analytical laboratory. Follow the field procedure requirements set forth in work plan or sampling and analysis plan. Retain copies of the chain-of-custody forms and shipping documents in the project file. Document field activities according to logbook procedures specified in work plan or sampling and analysis plan.

## 4.0 MAINTENANCE

Not applicable.

## 5.0 PRECAUTIONS

Safety precautions documented in the project-specific site Health and Safety Plan will be followed. If sampling procedures are to occur in areas where unexploded ordnance is known or potentially exist, the area will not be entered until unexploded ordnance support is provided. If an unsafe condition is identified, stop work immediately until the unsafe condition is mitigated.

If sampling for VOC analysis, follow precautions associated with handling methanol. Also, because much larger quantities of methanol are employed for ISM sampling, follow the International Air Transport Association and Department of Transportation requirements associated with transportation of these samples. If shipped by air, excepted quantities are limited quantity (30 milliliters per inner package/receptacle [i.e., sample container] and a total volume of no more than 0.5 liter per outer packaging [i.e., cooler]). Note that the outside of the sample shipment (cooler) should be labeled with excepted quantities marking.

## 6.0 REFERENCES

Interstate Technology & Regulatory Council (ITRC). 2012. Incremental Sampling Methodology (ISM) ISM-1. Washington, D.C.: Interstate Technology & Regulatory Council, ISM Team. [www.itrcweb.org](http://www.itrcweb.org)

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