



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

Letter of Transmittal

Date: May 24, 2010

To: James Bearzi, Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

Re: **Fort Wingate Depot Activity**
NM 6213820974

Date	Copies	Description
May 24 2010	Email	Letter Work Plan for Parcel 4 Re-sampling Igloo Block C

The above referenced document is being submitted via email on behalf of Mark Patterson, the FWDA BRAC Environmental Coordinator for Ft. Wingate Depot Activity, as required by FWDA's RCRA Permit. The letter Work Plan addresses the NMED comments 1 and 2 of the letter dated July 22, 2009 and is in the general format mentioned in an August 24, 2009 email from NMED. Igloo blocks A and D will also be sampled per this work plan but the results will be submitted in documents associated with parcels 24, 9, and 22 respectively. If you should have any questions regarding this submittal, please call Mr. Patterson at (330) 358-7312.

Copies are being distributed via email as follows:

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**SAMPLING AND ANALYSIS PLAN
IGLOO BLOCKS A, C, and D
PARCELS 24, 9, 4, and 22
FORT WINGATE DEPOT ACTIVITY, NEW MEXICO**

May 24, 2010

INTRODUCTION

The purpose of this Sampling and Analysis Plan (SAP) is to describe the activities to conduct X-ray fluorescence (XRF) analyses, associated confirmation sampling, and multi-increment (MI) sampling in soils at Igloo Blocks A, C, and D in response to New Mexico Environment Department (NMED) comments in a letter dated July 22, 2009 regarding lead concentrations in these soils reported from previous sampling events.

Additional site details are found in the Release Assessment Report for Parcel 4A Igloo Block C, dated March 27, 2009. The Army is preparing this letter work plan as discussed in an August 24, 2009 email from NMED. While this letter report is prepared in response to NMED's letter on Parcel 4, the Army will also use the same process to re-sample two other igloo blocks previously sampled: D-Block within Parcel 22, and A-Block within Parcel 24 and 9. Data and information obtained from D and A Blocks will be presented in future reports associated with those parcels.

Schedule. The following schedule applies to Parcel 4 only. Data and information from the other parcels will be submitted along with their respective reports.

Task	Date
Field Sampling	Within 90 days of NMED approval
Report (Army Draft)	90 days after receipt of analytical data
Tribal Draft	30 days after completion of Army Draft
Final Draft	30 days after receipt of Tribal comments

DATA QUALITY OBJECTIVES

The objective of this sampling event is to determine concentrations of site related chemicals of concern (CoC) which are the eight Resource Conservation and Recovery Act (RCRA) metals arsenic, barium, cadmium, chromium, mercury, lead, selenium, and silver.

If concentrations of site related CoC equal or exceed corresponding NMED soil screening limits (SSLs) for residential soil, further action is warranted.

If concentrations of site related CoC are below NMED SSLs for residential soil, the government will propose no further action at that site.

SCOPE OF ACTIVITIES

An XRF instrument, Niton Model XL3t 600, shall be rented from Thermo Fisher Scientific to analyze soil beneath each of two drain outlets at a total of 129 igloos within Blocks A, C, and D. Previous laboratory analyses of samples collected at these igloos, which consisted of soil from beneath the two drain outlets at each igloo composited into one sample, indicated lead concentrations greater than one half of the NMED SSL of 400 mg/kg for residential soil.

Confirmation samples from soil analyzed with the XRF shall be collected and submitted for laboratory analyses at a 20% frequency from each igloo block.

MI soil samples shall be collected from three decision units (DUs) at one revetment (Y-C1111) in Igloo Block C. Previous laboratory analysis of a MI soil sample from this revetment, which consisted of soil from 30 increments (subsamples) composited into one sample, indicated a lead concentration greater than one half of the NMED SSL of 400 mg/kg.

Samples shall be taken in Igloo Blocks A, C, and D, which are respectively listed as Area of Concern (AOC) 18 in Parcel 24, AOC 29 in Parcel 4, and AOC 30 in Parcel 22. The total number of locations and total number of samples by parcel, AOC, and igloo block are listed in the following table. A complete list of igloos to be resampled in each block and site maps are also included with this SAP.

Parcel	Site	Block	Location	Sample Type
24	AOC 18	A	85 Igloos	170 XRF Analyses 34 Confirmation Samples
4	AOC 29	C	14 Igloos 1 Revetment	28 XRF Analyses 6 Confirmation Samples 3 MI Samples 1 MI Sample Duplicate
22	AOC 30	D	30 Igloos	60 XRF Analyses 12 Confirmation Samples

INVESTIGATION METHODS

General XRF Sampling Information

The XRF instrument shall be operated only by personnel who have completed the Thermo Fisher Scientific Manufacturer's Training Course, and shall be maintained and used for soil analyses according to the manufacturer's instructions. Surface soil shall be analyzed by the XRF in situ beneath each of the two drains on the face of each igloo, or shall be collected from a depth

interval of 0 to 3 inches using decontaminated stainless steel spoons or trowels and placed in quart-size plastic bags, homogenized, and analyzed by the XRF on a test stand provided by the manufacturer.

Confirmation soil samples shall be collected at a 20% frequency in each igloo block, preferably where XRF analyses indicate lead concentrations and/or concentrations of other RCRA metals close to but less than corresponding NMED SSLs for residential soil. If XRF analyses are conducted in situ, confirmation samples shall be collected from a depth interval of 0 to 3 inches using decontaminated stainless steel spoons or trowels and placed in sample jars supplied by the analytical laboratory. If XRF analyses are conducted on a test stand, confirmation samples shall be transferred from the plastic bags in which they were initially collected into sample jars supplied by the analytical laboratory. All samples shall be placed on ice in coolers, brought to the sample staging building (Building 31) at Fort Wingate, and placed in a refrigerator pending shipment to the analytical laboratory.

General Multi-Increment (MI) Sampling Information

One MI soil sample shall be taken from each of 3 DUs in Revetment Y-C1111. Each DU shall consist of approximately 1/3 of the area within, but not including, the revetment berm. Samples shall be taken in a "systematic random" pattern, with 30 increments taken from a depth interval of 0-6 inches in each DU using a 7/8" diameter slotted stainless steel push probe. Increments shall be placed in gallon-size or larger plastic bags directly from the push probe and then double-bagged. One Duplicate MI soil sample shall be collected from one of the DUs. This sample shall be labeled so as to prevent the laboratory from knowing which sample has been duplicated. All samples shall be placed on ice in coolers, brought to the sample staging building (Building 31) at Fort Wingate, and placed in a refrigerator pending shipment to the analytical laboratory.

DECONTAMINATION PROCEDURES

To prevent the possibility of cross contamination between sampling locations, non-dedicated sampling equipment shall be thoroughly decontaminated before each use of the equipment. All sampling equipment shall be decontaminated using the following procedure:

- Scrape all loose soil into a bucket
- Wash and scrub with a dilute non-phosphate detergent solution (Liqui-Nox) in potable water
- Rinse with potable water
- Rinse with ASTM II ultra pure blank water
- Allow equipment to air dry

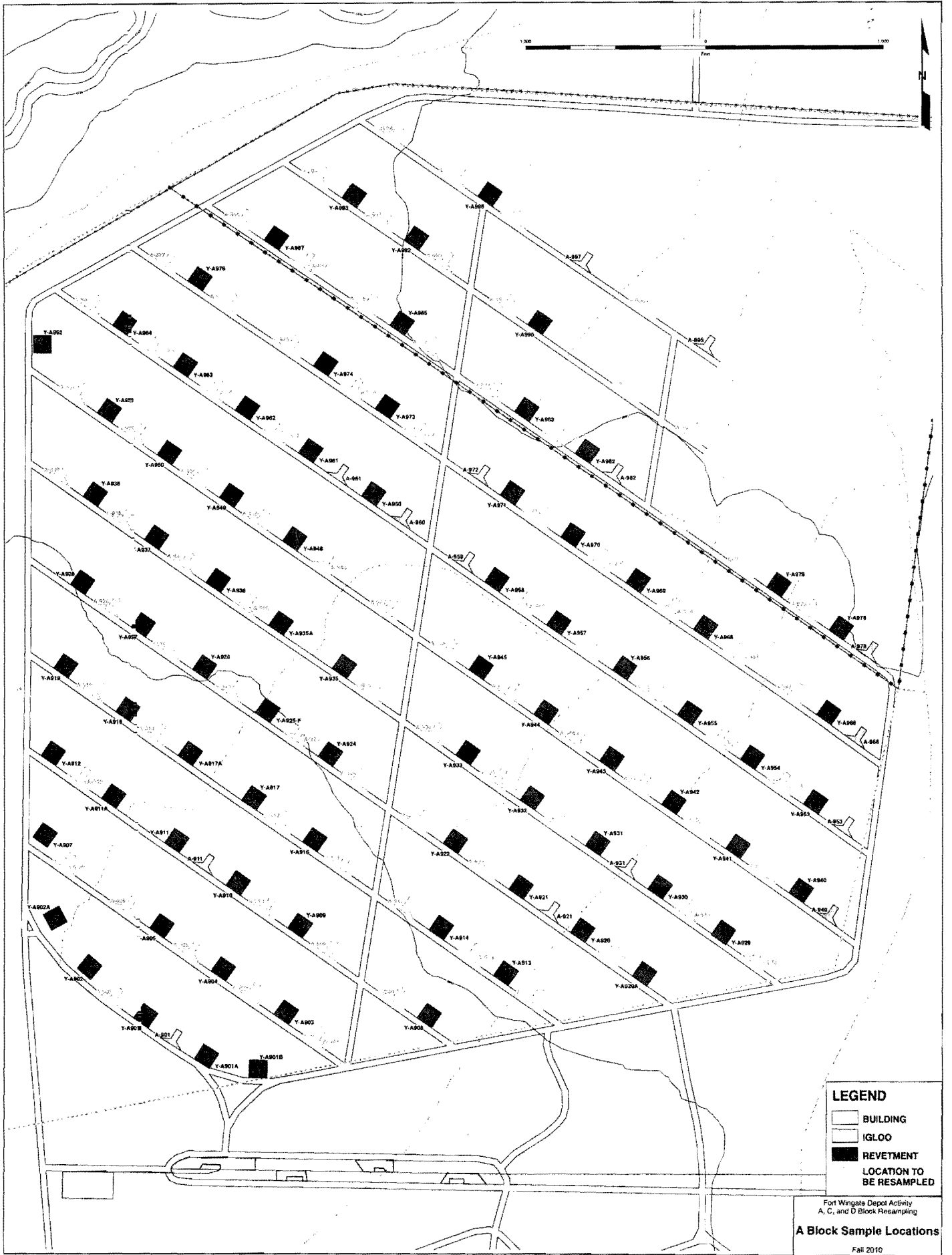
Two equipment rinsate samples from decontaminated sampling equipment shall be taken prior to commencement of sampling to verify the effectiveness of the decontamination process. One sample shall be taken from the equipment used for collection of XRF confirmation samples, and another from the equipment used for collection of MI samples. Personnel performing decontamination shall wear nitrile gloves during all phases of the decontamination process. Following decontamination, the equipment shall be wrapped in heavy duty aluminum foil to prevent contamination prior to its reuse. Two types of investigative derived waste will be

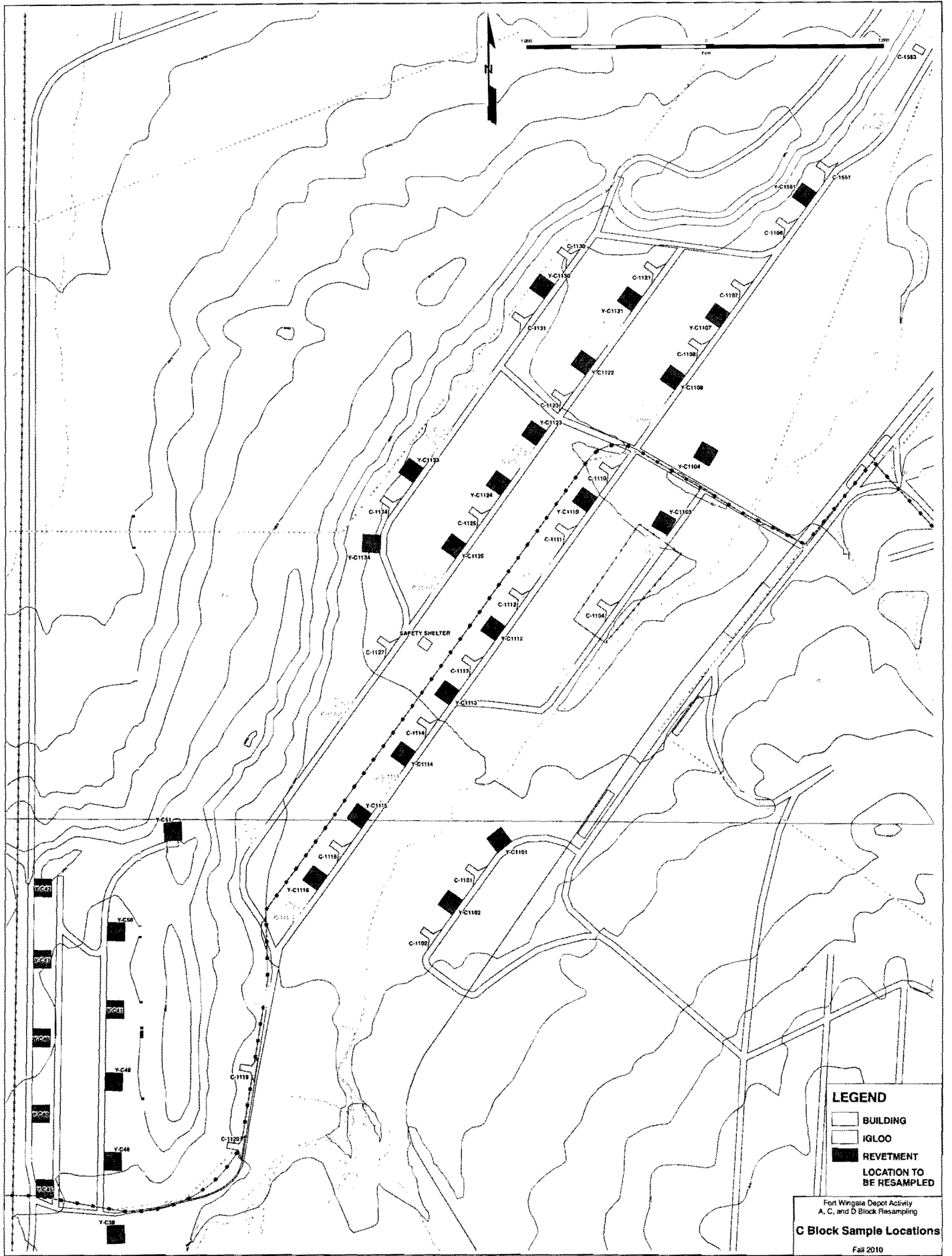
generated, wash and rinse water, and disposable equipment and personal protective equipment (PPE). Used disposable equipment and materials and PPE shall be collected in polyethylene trash bags and disposed in the Fort Wingate Depot Activity dumpster. The wash and rinse water shall be placed in a 5 gallon container and taken to the evaporation tank near Building 542.

**IGLOO RESAMPLING LIST
COMPOSITE SOIL SAMPLE LEAD RESULTS**

BLOCK	IGLOO	RESULT	IGLOO	RESULT	IGLOO	RESULT	IGLOO	RESULT	
A	A-902	287	A-926	464	A-950	423	A-979	2650	
	A-903	775	A-927	273	A-951	400	A-980	577	
	A-904	357	A-928	249	A-952	1020	A-981	1110	
	A-905	383/419	A-929	1390/657	A-954	241	A-983	427	
	A-906	359	A-930	324	A-955	413	A-984	300	
	A-907	275	A-932	246	A-956	395	A-985	321	
	A-908	294	A-933	1790	A-957	208	A-986	429	
	A-909	954	A-934	347/746	A-958	296	A-987	322	
	A-910	371	A-935	506	A-962	428	A-988	440	
	A-912	443	A-936	824	A-963	223	A-989	645	
	A-913	415	A-937	294	A-964	407	A-990	242	
	A-914	438	A-938	292	A-965	337	A-991	307	
	A-915	1000	A-939	1340	A-967	215	A-992	476	
	A-916	948	A-941	741	A-968	333	A-993	536	
	A-917	609	A-942	429	A-969	977	A-994	860	
	A-918	1090	A-943	669	A-970	494	A-996	413	
	A-919	385	A-944	434	A-971	720	A-998	703	
	A-920	286	A-945	376	A-973	369	A-999	1110	
	A-922	626	A-946	1460	A-974	334	A-1000	1070	
	A-923	582	A-947	350	A-975	208			
	A-924	260	A-948	603	A-976	481			
	A-925	762	A-949	316	A-977	606			
	BLOCK	IGLOO	RESULT	IGLOO	RESULT	IGLOO	RESULT	IGLOO	RESULT
	C	C-1103	329	C-1117	226	C-1126	233	C-1133	256
		C-1105	1290	C-1118	201	C-1128	474	C-1552	212
C-1109		405	C-1122	252	C-1129	232/267			
C-1115		145/422	C-1124	273	C-1132	241			
BLOCK	IGLOO	RESULT	IGLOO	RESULT	IGLOO	RESULT	IGLOO	RESULT	
D	D-1136	294	D-1152	305/390	D-1162	229	D-1178	270	
	D-1137	319	D-1155	249	D-1164	239	D-1179	277/246	
	D-1139	459	D-1156	218	D-1165	574	D-1180	238	
	D-1140	346	D-1157	1090	D-1167	320	D-1181	331	
	D-1141	377	D-1158	287	D-1170	230	D-1185	283	
	D-1142	432	D-1159	251	D-1171	209	D-1186	243	
	D-1147	467	D-1160	242/289	D-1175	248			
	D-1148	1660	D-1161	209	D-1177	220			

Notes: Composite soil sample analytical results in mg/kg.
Concentrations listed with two entries (such as 383/419) indicate field/duplicate sample analytical results.





LEGEND

- BUILDING
- IGLOO
- REVETMENT
- LOCATION TO BE RESAMPLED

Fort Wingale Depot Activity
 A, C, and D Block Resampling
C Block Sample Locations
 Fall 2010

