FIELD SAMPLING PLAN ADDENDUM NIAGARA-MOHAWK PROPERTY INVESTIGATION

REMEDIAL INVESTIGATION AT THE NIAGARA FALLS STORAGE SITE NIAGARA COUNTY, NEW YORK

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1.0 INTRODUCTION

As part of the ongoing Remedial Investigation (RI) being performed at the Niagara Falls Storage Site (NFSS), this Field Sampling Plan (FSP) Addendum summarizes the activities that will be conducted to assess potential contamination attributable to former DOD and/or DOE activities on property owned by Niagara-Mohawk Power Co. The parcel is located immediately west of and adjacent to the NFSS. This plan provides the strategy and rationale for performance of this characterization. Information regarding the NFSS site history is provided in the November 1999 Final *Field Sampling Plan – Phase I Edition Remedial Investigation* for the NFSS.

The activities described in this document have been prepared in response to the January 2001 Scope of Work (SOW) for *Additional Sampling to Characterize the Niagara Mohawk Power Corporation Property* issued by the Buffalo District of the United States Army Corps of Engineers (USACE), and the subsequent negotiations.

The Niagara-Mohawk parcel to be characterized was once part of the former Lake Ontario Ordnance Works (LOOW). This property is transected in a north-south direction by the West Ditch. The West Ditch has been documented as being radiologically contaminated on drawings (NFSS-150 and NFSS-366) included in the historical NFSS documents. Documents also describe the 1983-1984 radiological cleanup of the West Ditch (NFSS-054 and NFSS-133), but no confirmatory sampling results were included in those historical documents. Phase I RI sampling and gamma survey results verified the presence of surface migration of radiological constituents near the West Ditch and suggested the possibility of surface migration onto the Niagara-Mohawk property.

The task objectives of this investigation include:

- Visual examination of Niagara-Mohawk property (completed in May, 2001);
- Limited gamma walkover surveys;
- Selection of sampling locations, media to be sampled, and laboratory analytical parameters;
- Comparison of laboratory results to applicable regulatory action levels or screening values;
- Development of a report which summarizes the findings of the investigation.



This FSP and other referenced documents contain sections that describe the specific data needs (data quality objectives [DQOs]) to achieve the planned activities for completing task objectives. Tables are included that show the justification of planned sample locations and types of analytes. A figure is included to detail the approximate locations of the samples to be collected. These locations are preliminary and may be revised based on gamma walkover results.

Field procedures and analytical methods developed and specified in the Phase I and Phase II RI FSPs and subsequent Addenda will be followed for the Niagara-Mohawk Investigation activities, unless otherwise specified. The Radiation Protection Plan (RPP) addenda prepared for previous phases of the NFSS RI will be used for this investigation. A revised Sate Safety and Health Plan (SSHP) addendum will be prepared to address new safety-related conditions associated with the Niagara Mohawk Property. The SSHP addendum shall address power transmission equipment, owners requirements relating to accident reporting, restrictions to on-site activities and equipment permitted to be on-site, site restoration, grounding, equipment storage, and drainage. An addendum to the NFSS Quality Control Plan (QCP) will be prepared to cover the development of all work products related to this investigation. All revisions that may impact cost must be approved with USACE Project Manager prior to sampling.



2.0 PREVIOUS SITE ACTIVITIES AND RECONNAISSANCE RESULTS

2.1 Previous Site Activities

The Niagara-Mohawk property borders the western property line of the NFSS, west of the Interim Waste Containment Structure (IWCS). The property was included as part of the LOOW and was declared as surplus and resold as part of previous governmental activities. Manufacturing or storage activities were not conducted on the parcel, although historical reports (NFSS-150 and NFSS-366) show that the West Ditch that traverses the property in a south to north fashion was contaminated with radiological constituents. The contamination is believed to have been due primarily to soil transport via wind and water from the uncovered pile of R10 residues, generated during off-site processing of uranium-bearing ores, stored north of the former water treatment plant of the LOOW. This pile of residues was located approximately 300 feet east of the Niagara-Mohawk property, and was left uncovered and unmanaged for more than 20 years.

Documents also report that the West Ditch was remediated in 1983-1984 (NFSS-054 and NFSS-133). Remedial methods and confirmatory sampling results of that cleanup have not been found by Maxim in the historical record.

During the Phase I RI at NFSS, gamma walkover surveys were performed around the east-west trending ditches which drain the western surface of the Interim Waste Containment Structure (IWCS). Results indicated that the gamma activity of the southernmost ditch increased towards the Niagara-Mohawk property line. Analytical results of the sediment sample collected from the southernmost ditch of the IWCS exceeded radiological screening criteria.

Implementation of this plan will provide an evaluation of the effectiveness of the previous remedial action, and an assessment of the nature and extent of contamination potentially present on the Niagara-Mohawk property.

2.2 Parcel to be Investigated

The entire Niagara-Mohawk parcel is more than 60 acres in size. Maxim estimates that the area to be included in the gamma survey is approximately six acres (rather than two acres, as indicated in the Scope of Work). The portion of Niagara-Mohawk property that is of interest for the sampling and limited gamma survey was described by Maxim during negotiations as follows:

"A strip on Niagara-Mohawk property, along and either side of the N-S drainage ditch (the West Ditch) which runs parallel to the NFSS-Niagara-Mohawk property boundary. The strip extends a length of approximately 2100 feet, from R street on the south to 0 street on the north. The strip is approximately 120 feet wide and includes land on both sides of the ditch. The width of the strip is about 40 feet east of the ditch, and 80 feet west of the ditch."

2.3 May 2001 Maxim Site Reconnaissance

During May of 2001, Maxim conducted a site reconnaissance of the Niagara-Mohawk property. The reconnaissance consisted of a walkover of the entire length of the six-acre parcel and mapping of physical features. Photographs were taken. The walkover was supplemented with a



brief gamma walkover of various areas of potential interest on the property. Samples will be collected from areas near the following features identified during the reconnaissance:

- Numerous soil piles, believed to be dredging spoils, line the western bank of the West Ditch. (see photos 12-15, 21, 22, Appendix A) These piles are elevated as much as six feet above the surrounding terrain and appear to be man-made. The time-frame when sediments and soil were dredged from the Ditch is unknown. These piles may have been generated at the time of the West Ditch remedial activities. Spoil piles are not present south of the east-west property line at the southern end of the subject property. Since these piles may have included radiological constituents resulting from West Ditch remedial activities, these soils will be sampled during this investigation.
- Piles of large stones and concrete with steel reinforcement were noted at several locations on the Niagara-Mohawk property (see photos 18, 19, 23, Appendix A). Due to the potential that the concrete may have been transported from NFSS property during demolition activities, surface soil and subsurface soil samples will be collected at representative locations near this debris.
- Portions of the southernmost east-west ditch, which discharges in a westerly direction from
 the IWCS to the West Ditch on the Niagara-Mohawk property, exhibited elevated gamma
 readings during the NFSS RI. During the brief gamma walkover performed as part of the
 Niagara-Mohawk site reconnaissance, elevated gamma readings were detected along the west
 ditch. Sediment, surface water, surface and subsurface soil samples will be collected from
 this ditch.
- Water was present in some portions of the west ditch. Surface water and sediment samples will be collected from the ditch.

Sampling is not recommended at the following areas identified during the reconnaissance:

- Several areas of charred wood were found on the northern end of the property. These areas appear to be from activity not believed to be related to NFSS operations.
- Scraps of metal, trash, ceramic insulators, and various discarded appliances were noted along the Niagara-Mohawk property. Presence of this debris appears to be from activity not believed to be related to NFSS.
- A pile of rusting drums and debris was noted approximately 450 feet south of the southern boundary of the Niagara-Mohawk parcel, which is the subject of this work plan. Those drums will not be included as potential sample locations because they are not in the area covered by the Scope of Work and Right-of-entry (see photo 20, Appendix A).
- The majority of the northern portion of the Niagara-Mohawk property was overgrown with brush and weeds, inhibiting visual observation of portions of the property (see photo 13, Appendix A).



3.0 STRATEGY AND METHODOLOGY

This sampling plan incorporates a review of the records received from the USACE for the NFSS site and the sampling results from Phase I and Phase II of the NFSS RI. Samples for radiological constituent analysis will be collected from surface and subsurface soil, surface water, and sediment to determine the potential nature and extent of radiological contamination. Samples for chemical constituent analysis will be collected from surface and subsurface soils and will be used to evaluate the potential nature and extent of chemical contamination.

Prior to conducting field activities, Maxim will: prepare a mobilization plan; contact underground utilities companies for clearance; procure equipment and supplies; coordinate with laboratory representatives and other subcontractors; provide notifications to the property owner and USACE; develop travel arrangements; and administer other logistics. During field sampling, a sampling team of three, plus the Site Safety and Health Officer and the HP Radiation Technician (subcontractor) will be present.

This document is a flexible plan, written to meet the goals outlined in Section 1.0. Unforeseen situations encountered in the field may require professional judgement and consultation with the USACE, and resulting decisions will be documented in daily field reports and subsequent reports. The following sections describe the methodology to be used in the collection of the samples.

3.1 Surface and Subsurface Soil Sample Location Selection Strategy

Preliminary recommendations concerning surface and subsurface soil sampling locations are shown in Figure 1. Specific rationale for each surface and subsurface soil sample location is shown in Table 1. The actual sampling locations will be determined after the limited gamma walkover survey is completed.

Based on the report of SAIC's gamma walkover survey results, sampling locations will be recommended in a supplement to the Field Sampling Plan Addendum. This supplement will be brief and will consist of a table and figure. At this time, Maxim recommends that samples be collected in the vicinity of the ditch, both upstream (south), near, and downstream (north) of locations where elevated levels of radiological constituents have been found near the western boundary of the NFSS property. This will enable evaluation of both possible presence and horizontal extent of radiological contamination. Surface and subsurface soil sampling locations will be based on the results of the gamma survey throughout the six acre parcel. Subsurface samples will be advanced by hand auger to a depth indicated in Table 1. Drill rigs will not be used, in order to minimize risk associated with safety near overhead power lines.

The depths of the subsurface samples were chosen as follows:

• For samples that occur in the piles of material, the subsurface sample depth corresponds to the assumed level of the original bank height and 0.5 feet into the "original" upper Brown Clay Unit (i.e., the top 0.5 feet of the material that existed on the ditch bank prior to the placement of the spoil pile).



• For samples located in areas that are typical of "natural" grade, the subsurface sample will be collected from 1.5 to 2.0 feet below the ground surface. This interval is the same as used in the Phase II of the Remedial Investigation for the evaluation of the vertical extent of hot spots.

These chosen depths were also based on the geology (assumed to be dredged material) at the specific areas and by the field observation of the material. The observed piles of material lining the majority of the western bank of the West Ditch are assumed to be composed primarily of dredge spoil. Dredged materials are not typically consolidated and packed with machinery upon excavation. Additionally, the upstream material found within the ditches around the NFSS does not contain many stones and gravel. Therefore, it is unlikely that the spoil pile contains sufficient amounts of stone or gravel to preclude the use of the hand augering sample collection technique.

3.1.1 Limited Gamma Walkover Survey

A "limited gamma walkover survey" will be performed prior to selection of specific sampling locations. A Maxim representative will be present during the gamma survey. The specifications of the limited gamma walkover are provided below.

The area to be covered by the gamma survey is approximately six acres. Clearing and grubbing will not be performed as part of the sampling and limited gamma walkover survey, as it is not included in the right of entry.

The limited gamma walkover survey will include the following:

- 1. Data will be captured electronically and using Graphic Information Systems (GIS) format. Units for coordinate system and gridding will be consistent with other NFSS RI efforts to allow USACE to integrate with other site data.
- 2. One pass (1-meter wide) along the NFSS fence line (photo 2) (eastern property boundary) (draw the box), the tree/clearing line on the western edge of the property (photo 6), the fence line to the south (photo 20), and the northern parcel boundary will be performed.
- 3. Approximately fifty percent coverage of the western ditch (bias within the box) will be performed.
- 4. One north-south pass (1-meter wide) between the ditch and the property boundary on each side of the ditch (add a random element) will be performed. This pass will include portions of the soil pile, where accessible.
- 5. If an area of elevated activity is found, loosely define the area by spot checking around it (add some definition to what you find).

Considering the property is only 120 feet wide, the result is approximately 10-15% coverage.

Equipment to be used in the gamma survey includes a Trimble Global Positioning Systems (GPS) unit and a 2-inch X 2-inch sodium iodine (NaI) detector.

Gamma walkover surveys will employ use of GPS to establish survey coordinates. It is assumed that presence of overhead power lines and foliage will not interfere with performance of the



topographic survey. Gamma measurements will be recorded continuously and related to site coordinates through the use of GPS if overhead power lines do not interfere with GPS operation. If overhead power lines or foliage does interfere with the GPS signal, the gamma walkover data will be recorded in 2-second intervals and travel paths will be sketched during the survey (using distance measurements from the fence as a reference). The data will be color-coded and overlaid onto a map.

SAIC's Health Physicist Radiation Technician will perform the survey described above, with the assistance of Maxim's representative.

Data will be color coded and plotted onto a base map to display results graphically. Daily instrument Quality Control checks and meter calibration forms will also be provided.

A gamma survey will be performed on an approximate 10 meter by 10 meter area centered around each sampling location.

3.1.2 Selection of Field Sampling Locations

Surface soil samples will be collected from the top 0.5 feet of the ground surface that exhibits the highest gamma reading from the gamma screening. Samples will be collected in accordance to the methods provided in the Phase I FSP.

3.1.3 Gamma Screening and Subsurface Soil Sampling Locations

The subsurface soil samples will be co-located with the surface soil samples. Sample depths are stated in Table 1. Sample depths will be optimized depending on gamma screening results. Samples will be collected in accordance to the methods provided in the Phase I FSP.

3.1.4 Surface Soil Sampling

Analytes for the surface and subsurface soil samples were selected to correspond with previous phases of the NFSS RI. Specifically, all surface and subsurface soil samples will be analyzed for radiological constituents (including specific isotopic radionuclides, total uranium, and gross alpha and beta radiation). Chemical analytes were chosen in the surface and subsurface soil samples to provide boundary information for the baseline risk assessment for the NFSS. Specific analytes for each surface and subsurface soil sample location are shown in Table 2.

3.2 Surface Water and Sediment Sample Location Selection Strategy

General areas for samples to be collected from surface water and sediment are shown on Figure 1. Specific rationale for each surface water and sediment sample location is shown in Table 1. The actual sampling locations will be determined by locating the sample near the area exhibiting the highest gamma reading from a limited gamma walkover survey. To minimize turbidity in the water samples, the surface water samples will be collected prior to the collection of the sediment samples.

3.2.1 Limited Gamma Walkover Survey

A limited gamma survey of ditches will be performed for each surface water and sediment sample location as described in Section 3.1.1. Preliminary sampling locations will be chosen based on the results. At each preliminary location, an approximate 10 meter X 10 meter area



centered around the preliminary sample location to the top of each bank of the West Ditch will be surveyed. Sediment samples will be collected at each "hot spot". Water samples will be collected from the ditch immediately downstream of the "hot spot". Performance of the gamma walkover survey will be in accordance with the methodology presented in Phase I and Phase II FSPs.

3.2.2 Surface Water Sampling

Surface water samples will be collected from the West Ditch at the nearest downstream location for the sediment sample location exhibiting the highest gamma reading. Samples will be collected in accordance to the methods provided in the Phase I FSP.

3.2.3 Sediment Sampling

Sediment samples will be collected from the top 0.5 feet of the ground surface that exhibits the highest gamma reading from the limited gamma walkover survey. Samples will be collected in accordance to the methods provided in the Phase I FSP.

3.2.4 Surface Water and Sediment Analyte Selection

All surface water and sediment samples will be analyzed for radiological constituents (including specific isotopic radionuclides, total uranium, and gross alpha and beta radiation). Surface water samples will also include dissolved specific isotopic radionuclides. No chemical analytes were chosen in the surface water and sediment samples.

3.3 Topographic Survey

Sediment, surface water, and soil sampling locations will be staked. Upon completion of field sampling, the coordinates and elevations of the staked locations will be surveyed by Niagara Boundary. Maxim's Site Health and Safety Officer will provide a health and safety briefing for the survey crew. The Health and Safety Officer will be present during the survey work to ensure adherence to the SSHP Addendum. The survey includes use of GPS and other techniques. The results will be provided in the same format and coordinate system used for work at NFSS.

The surveyor estimates that survey work will be one day in duration.



4.0 PLANNED SAMPLING ACTIVITES

Sampling locations for the Niagara-Mohawk investigation are shown on Figure 1.

The following is a listing of the tasks to be performed during the Niagara-Mohawk Investigation field activities. Tasks will be performed in accordance with the procedures developed in the Final Phase I and Phase II RI FSP and subsequent addenda or as described in procedures included in this FSP.

Procedural note: Surface water samples for total and dissolved radionuclides will be collected at each location if sufficient water exists. The total samples will be analyzed. The dissolved samples will be held at the laboratory. If the radionuclide risk-based screening level that was developed and used to screen the data from Phase I and Phase II of the RI is exceeded in the total samples, the corresponding dissolved sample will be analyzed.

- 1. Collection of Surface and Subsurface Soil on the Niagara-Mohawk property
 - Ten surface soil samples will be collected. The approximate location for each sample has been identified on Figure 1. The specific location will be proposed in an addendum to this plan after a gamma survey is completed in the approximate locations.
 - Ten subsurface soil samples will be collected. These samples will be collocated with the surface soil samples.

Justification for these proposed sample locations is shown in Table 1 and specific analytes, QA/QC samples, and MS/MSD samples, for each location is shown in Table 2.

- 2. Collection of Sediment and Surface Water Samples from the West Ditch on the Niagara-Mohawk property
 - Ten sediment samples will be collected. The approximate location for each sample has been identified. The specific location will be proposed in an addendum to this plan after a limited gamma survey is completed in the approximate locations.
 - Ten surface water samples will be collected. These samples will be located downstream from the sediment samples.

Justification for these proposed sample locations are shown in Table 3 and specific analytes, QA/QC samples, and MS/MSD samples, for each location are shown in Table 4.



- Survey of the Sample Points From the Niagara-Mohawk Investigation Activities 3.
 - Upon completion of the sampling activities, a topographic survey of all the locations sampled during the Niagara-Mohawk activities will be completed.

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5.0 PLANNED ANALYTES, METHODS, AND LABORATORIES FOR PROPERTY INVESTIGATION

5.1 Samples for Chemical and Radiological Analysis

Samples will be analyzed for:

volatile organics (by USEPA SW846 Methods 5035/8260B); semi-volatile organics (by USEPA SW846 Methods 3550B/8270C); PCBs (by USEPA SW846 Methods 3550B/8081A/8082); TAL metals (by USEPA SW846 Methods 3050B/6010B/7000); Mercury (by USEPA SW846 Method 7471A); radiological speciation:

actinium-227, americium-241, cobalt-60, cesium-137, protoatinium-231, radium-226, radium-228, thorium-228, uranium-235, and uranium-238 (by HASL 300 – gamma spectroscopy, note: radium-226 in water samples will be analyzed by radon emanation);

thorium-228, thorium-230, thorium-232, and uranium-234, uranium-235, and uranium-238 (by HASL 300 – alpha spectroscopy);

gross alpha and beta radiation (by Method 900); total uranium (by ASTM D5174); and nitroaromatics (by USEPA SW846 Method 8330).

The primary and Quality Control (QC) samples will be shipped to General Engineering Laboratories' laboratory at the following address:

General Engineering Laboratories Attn: Sample Custodian 3040 Savage Road Charleston, SC 29407 Telephone: (843) 556-8171

Fax: (843) 766-1178

5.2 Quality Assurance (QA) Split Samples

A systems audit for this project will consist of collection and shipment of split samples for each analytical parameter to Nuclear Technology Services (the USACE contracted laboratory). Non-primary parameters (gross alpha and beta radiation and total uranium) will not be analyzed in the QA samples. Unless otherwise instructed, split samples will be shipped to:

Nuclear Technology Services Attn: Dr. Rao 635 Hembree PRWY Roswell, GA 30076 Telephone: (770) 663-0711

Fax: (770) 663-0547



RATIONALE FOR SELECTION OF SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

The following locations represent the areas of primary interest identified on the Niagara-Mohawk property during the May 2001 Site Reconnaissance. Note: Both surface and subsurface soil samples will be collected from each location and analyzed for the parameters specified.

Sample	Area of	Location	Justification for Sample point	Parameters to
Numbers	Investigation			be collected
SS901	Niagara-Mohawk	This sample location is an open area at	This location will be used to provide boundary	Radionuclides
SB901	Property	the southern end of the subject property	information for the NFSS as well as investigate	Total Uranium
		on the east side of the West Ditch. The	the possibility of offsite transfer of radiological	Gross α/β
		location is near the double fenceline and	contamination.	VOC
		is adjacent to the southwestern corner of		PCBs
		the NFSS.	The subsurface sample will be collected between	Metals
			1.5 and 2.0 feet below the ground surface or until	SVOCs
			auger refusal at this location.	Nitroaromatics
SS902	Niagara-Mohawk	This sample location is in a small ditch	This location exhibited three to four thousand	Radionuclides
SB902	Property	between two piles of soil/sediment that	counts per minute (cpm) over the local	Total Uranium
		were potentially dredged from the West	background (8,000 cpm) during the walkover	Gross α/β
		Ditch. This location is near the southern	survey of the Niagara-Mohawk property.	VOC
		end of the subject property and is west of		PCBs
		the West Ditch.	The subsurface sample will be collected between	Metals
			1.5 and 2.0 feet below the ground surface or until	
			auger refusal at this location.	
SS903	Niagara-Mohawk	This sample location is on the east side	This location will be used to provide boundary	Radionuclides
SB903	Property	of the West Ditch in an area with several	information for the NFSS as well as investigate	Total Uranium
		small erosion channels.	the possibility of offsite transfer of radiological	Gross α/β
			contamination.	VOC
				PCBs
			The subsurface sample will be collected between	Metals
			1.5 and 2.0 feet below the ground surface or until	SVOCs
			auger refusal at this location.	Nitroaromatics

TABLE 1

RATIONALE FOR SELECTION OF SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Sample	Area of	Location	Justification for Sample point	Parameters to
Numbers	Investigation			be collected
SS904	Niagara-Mohawk	This sample location is on the west side	This location is adjacent to the sediment sample	Radionuclides
SB904	Property	of the West Ditch on an embankment	location that exhibited 10,000 to 12,000 cpm over	Total Uranium
		that is a pile of soil/sediment that was	background, but is on the other side of the ditch in	Gross α/β
		potentially dredged from the West Ditch.	the potential spoil pile.	VOC
				PCBs
			The subsurface sample will be collected between	Metals
			2.5 and 3.0 feet below the ground surface or until	
			auger refusal at this location.	
SS905	Niagara-Mohawk	This sample location is on the west side	Due to the unknown origin of this pile of material	Radionuclides
SB905	Property	of the West Ditch north of a pile of	and the potential of this rubble coming from the	Total Uranium
		concrete and steel of unknown origin.	former LOOW or the NFSS, samples will be	Gross α/β
			collected.	VOC
				PCBs
			The subsurface sample will be collected between	Metals
			1.5 and 2.0 feet below the ground surface or until	
			auger refusal at this location.	
SS906	Niagara-Mohawk	This sample location is on the top of the	This location exhibited two to four thousand	Radionuclides
SB906	Property	west bank of the West Ditch.	counts per minute (cpm) over the local	Total Uranium
			background (8,000 cpm) during the walkover	Gross α/β
			survey of the Niagara-Mohawk property.	VOC
				PCBs
			The subsurface sample will be collected between	Metals
			2.5 and 3.0 feet below the ground surface or until	
			auger refusal at this location.	

TABLE 1

RATIONALE FOR SELECTION OF SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Sample	Area of	Location	Justification for Sample point	Parameters to
Numbers	Investigation			be collected
SS907	Niagara-Mohawk	This sample location is on the west side	This location will be used to provide boundary	Radionuclides
SB907	Property	of the West Ditch on an embankment	information for the NFSS as well as investigate	Total Uranium
		that is a pile of soil/sediment that was	the possibility of offsite transfer of radiological	Gross α/β
		potentially dredged from the West Ditch.	contamination.	VOC
				PCBs
			The subsurface sample will be collected between	Metals
			2.0 and 2.5 feet below the ground surface or until	SVOCs
			auger refusal at this location.	Nitroaromatics
SS908	Niagara-Mohawk	This sample location is on the west side	This location will be used to investigate the	Radionuclides
SB908	Property	of the West Ditch on an embankment	possibility of offsite transfer of radiological	Total Uranium
		that is a pile of soil/sediment that was	contamination by the potential dredging of the	Gross α/β
		potentially dredged from the West Ditch.	West Ditch.	VOC
				PCBs
			The subsurface sample will be collected between	Metals
			2.0 and 2.5 feet below the ground surface or until	
			auger refusal at this location.	
SS909	Niagara-Mohawk	This sample location is on the west side	This location will be used to investigate the	Radionuclides
SB909	Property	of the West Ditch on an embankment	possibility of offsite transfer of radiological	Total Uranium
		that is a pile of soil/sediment that was	contamination by the potential dredging of the	Gross α/β
		potentially dredged from the West Ditch.	West Ditch.	VOC
				PCBs
			The subsurface sample will be collected between	Metals
			1.5 and 2.0 feet below the ground surface or until	
			auger refusal at this location.	

RATIONALE FOR SELECTION OF SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Sample	Area of	Location	Justification for Sample point	Parameters to
Numbers	Investigation			be collected
SS910	Niagara-Mohawk	This sample location is a pile of	Collection of surface and subsurface soil from this	Radionuclides
SB910	Property	soil/sediment that was potentially placed	sample point will be used to determine if the	Total Uranium
		due to dredging operations of the West	potential soil/sediment spoil pile from previous	Gross α/β
		Ditch. The pile is located at the northern	dredging activities was contaminated with	VOC
		end of the Niagara-Mohawk property	radionuclides.	PCBs
		west of the West Ditch approximately 30		Metals
		feet south of the NFSS Baker-Smith	The subsurface sample will be collected between	
		property line.	1.5 and 2.0 feet below the ground surface or until	
			auger refusal at this location.	

SURFACE AND SUBSURFACE SOIL SAMPLE LOCATIONS AND ANALYSES REQUIRED NIAGARA FALLS STORAGE SITE - NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Identification					Param	eters							
Sample Number	Area of Investigation	Sample Location	Matrix	Field QC Duplicate, QA Split, or MS/MSD Samples	VOCs	SVOCs	PCBs	Metals	Dissolved Radiological Isotopes	Total Radiological Isotopes	Total U	Gross a/b	Nitroaromatics
SS901-2079	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil	QA, MS/MSD	X	X	X	X		X	X	X	X
SB901-2080-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil		X	X	X	X		X	X	X	X
SS902-2081	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil		X		X	X		X	X	X	
SB902-2082-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil		X		X	X		X	X	X	
SS903-2083	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil	QC-2084	X	X	X	X		X	X	X	X
SB903-2085-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil	QC-2086	X	X	X	X		X	X	X	X
SS904-2087	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil		X		X	X		X	X	X	
SB904-2088-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil		X		X	X		X	X	X	
SS905-2089	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil		X		X	X		X	X	X	
SB905-2090-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil		X		X	X		X	X	X	
SS906-2091	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil		X		X	X		X	X	X	
SB906-2092-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil		X		X	X		X	X	X	
SS907-2093	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil		Х	Х	X	Х		X	X	X	X
SB907-2094-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil	QA, MS/MSD	X	X	X	X		Х	X	X	X
SS908-2095	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil		X		X	X		X	X	X	
SB908-2096-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil		X		X	X		X	X	X	
SS909-2097	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil		X		X	X		X	X	X	

Nm_tbl - Table 2 - soil sampling

SURFACE AND SUBSURFACE SOIL SAMPLE LOCATIONS AND ANALYSES REQUIRED NIAGARA FALLS STORAGE SITE - NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Identification					Parameters								
Sample Number	Area of Investigation	Sample Location	Matrix	Field QC Duplicate, QA Split, or MS/MSD Samples	VOCs	SVOCs	PCBs	Metals	Dissolved Radiological Isotopes	Total Radiological Isotopes	Total U	Gross a/b	Nitroaromatics
SB909-2098-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil		X		X	X		X	X	X	
SS910-2099	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Soil		X		X	X		X	X	X	
SB910-2100-X	Niagara-Mohawk Property	MARSSIM Unit 9A	Subsurface Soil		X		X	X		X	X	X	

Note: See Section 5.0 of the Niagara-Mohawk Investigation FSP for methods and specific analytes

Nm_tbl - Table 2 - soil sampling Page 2 of 2

⁻X will be replaced with the depth to the bottom of the sample in feet

RATIONALE FOR SELECTION OF SEDIMENT AND SURFACE WATER SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

The following locations represent the areas of primary interest identified on the Niagara-Mohawk property during the May 2001 Site Reconnaissance. Notes: Both sediment and surface water samples will be collected from each location and analyzed for the parameters specified.

Surface water samples will be collected prior to the collection of the sediment samples to minimize turbidity.

Sample Number	Area of Investigation	Location	Justification for Sample point	Parameters to be collected
SD911	Niagara-Mohawk Property	This sample is located near the southern boundary of the subject study area in the West Ditch. This location is approximately 20 feet south of the NFSS	This sample will provide information on the levels of radiological concern at the southern (upstream) property line.	Radionuclides Total Uranium Gross α/β
SW911	Niagara-Mohawk Property	Co-located with SD911	This sample, when used in conjunction with its corresponding sediment sample, will allow for the determination if the radiological parameters of interest are accumulating in the surface water of the West Ditch at this point.	Total Radionuclides Dissolved Radionuclides Total Uranium Gross α/β
SD912	Niagara-Mohawk Property	This sample is located in the West Ditch directly east of the potential dredge spoil piles and an area devoid of significant vegetation.	Due to the absence of vegetation significant erosion can occur. This erosion has the potential to move radiological constituents into the ditch at this point.	Radionuclides Total Uranium Gross α/β
SW912	Niagara-Mohawk Property	Co-located with SD912	This sample, when used in conjunction with its corresponding sediment sample, will allow for the determination if the radiological parameters of interest are accumulating in the surface water of the West Ditch at this point.	Total Radionuclides Dissolved Radionuclides Total Uranium Gross α/β

TABLE 3

RATIONALE FOR SELECTION OF SEDIMENT AND SURFACE WATER SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Sample Number	Area of Investigation	Location	Justification for Sample point	Parameters to be collected
SD913	Niagara-Mohawk Property	This sample location is in the West Ditch at the end of a stainless steel culvert. This sample is west of the sediment sample 703), collected from a tributary from the IWCS to the West Ditch, which exhibited an elevated radium-226 concentration.	This location exhibited eight to twelve thousand counts per minute (cpm) over the local background (8,000 cpm) during the walkover survey of the Niagara-Mohawk property.	Radionuclides Total Uranium Gross α/β
SW913	Niagara-Mohawk Property	Co-located with SD913	This sample, when used in conjunction with its corresponding sediment sample, will allow for the determination if the radiological parameters of interest are accumulating in the surface water of the West Ditch at this point.	Total Radionuclides Dissolved Radionuclides Total Uranium Gross α/β
SD914	Niagara-Mohawk Property	This sample is located in the West Ditch approximately halfway between two tributary ditches that are located to the east.	This sample will be used to narrow the extent of potential contamination due to the elevated gamma readings from the upstream sample location. This location is also within the area marked as contaminated on historical documents.	Radionuclides Total Uranium Gross α/β
SW914	Niagara-Mohawk Property	Co-located with SD914	This sample, when used in conjunction with its corresponding sediment sample, will allow for the determination if the radiological parameters of interest are accumulating in the surface water of the West Ditch at this point.	Total Radionuclides Dissolved Radionuclides Total Uranium Gross α/β
SD915	Niagara-Mohawk Property	This sample location is in the West Ditch at the end of a stainless steel culvert. This sample is west of the sediment sample 702 collected from a tributary from the IWCS to the West Ditch.	This sample will be used to determine if potential contamination exists at this location. This location is also within the area marked as contaminated on historical documents.	Radionuclides Total Uranium Gross α/β

RATIONALE FOR SELECTION OF SEDIMENT AND SURFACE WATER SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Sample Number	Area of Investigation	Location	Justification for Sample point	Parameters to be collected
		C- 1	This could be a second in a second in	Total Radionuclides
SW915	Niagara-Mohawk	Co-located with SD915	This sample, when used in conjunction	
	Property		with its corresponding sediment sample,	Dissolved Radionuclides
			will allow for the determination if the	Total Uranium
			radiological parameters of interest are	Gross α/β
			accumulating in the surface water of the	
GD 04.6)		West Ditch at this point.	D !!
SD916	Niagara-Mohawk	This sample location is in the West Ditch	This sample will be used to determine if	Radionuclides
	Property	at the end of a stainless steel culvert.	potential contamination exists at this	Total Uranium
		This sample is west of the sediment	location. This location is also within the	Gross α/β
		sample 701 collected from a tributary	area marked as contaminated on	
		from the IWCS to the West Ditch.	historical documents.	
SW916	Niagara-Mohawk	Co-located with SD916	This sample, when used in conjunction	Total Radionuclides
	Property		with its corresponding sediment sample,	Dissolved Radionuclides
			will allow for the determination if the	Total Uranium
			radiological parameters of interest are	Gross α/β
			accumulating in the surface water of the	
			West Ditch at this point.	
SD917	Niagara-Mohawk	This sample location is in the West Ditch	This sample will be used to determine if	Radionuclides
	Property	at the mouth of a tributary that	potential contamination exists at this	Total Uranium
		discharges from the west (towards the	location. This location is also within the	Gross α/β
		interior of the Niagara-Mohawk	area marked as contaminated on	_
		property).	historical documents.	
SW917	Niagara-Mohawk	Co-located with SD917	This sample, when used in conjunction	Total Radionuclides
	Property		with its corresponding sediment sample,	Dissolved Radionuclides
			will allow for the determination if the	Total Uranium
			radiological parameters of interest are	Gross α/β
			accumulating in the surface water of the	,
			West Ditch at this point.	

RATIONALE FOR SELECTION OF SEDIMENT AND SURFACE WATER SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Sample Number	Area of Investigation	Location	Justification for Sample point	Parameters to be collected
SD918	Niagara-Mohawk	This sample location is in the West Ditch	This sample will be used to determine if	Radionuclides
	Property	at the end of a stainless steel culvert.	potential contamination exists at this	Total Uranium
		This sample is west of the sediment	location. This location is also within the	Gross α/β
		sample 742, collected from a tributary	area marked as contaminated on	
		from the IWCS to the West Ditch.	historical documents.	
SW918	Niagara-Mohawk	Co-located with SD918	This sample, when used in conjunction	Total Radionuclides
	Property		with its corresponding sediment sample,	Dissolved Radionuclides
			will allow for the determination if the	Total Uranium
			radiological parameters of interest are	Gross α/β
			accumulating in the surface water of the	
			West Ditch at this point.	
SD919	Niagara-Mohawk	This sample location is in the West Ditch	This sample will be used to determine if	Radionuclides
	Property	near the guy wires from the Niagara-	potential contamination exists at this	Total Uranium
		Mohawk three-pole power structures.	location due to the presence of the	Gross α/β
			anchors holding the guy wires. It is	
			possible that a depositional environment	
			exists due to these potential surface	
CWO10	N:1-	C- 14-141 CD010	water flow constrictions.	T-4-1 D - 4: 1: 4
SW919	Niagara-Mohawk	Co-located with SD919	This sample, when used in conjunction	Total Radionuclides
	Property		with its corresponding sediment sample, will allow for the determination if the	Dissolved Radionuclides
				Total Uranium
			radiological parameters of interest are	Gross α/β
			accumulating in the surface water of the West Ditch at this point.	
SD920	Niagara-Mohawk	This sample location is in the West Ditch	This sample will be used to determine if	Radionuclides
3D920	Property	at the southern end of a large diameter	potential contamination exists at this	Total Uranium
	Troperty	culvert. This culverts leads off the	location.	Gross α/β
		property back onto the Baker-Smith area	iocation.	Οιοςς α/ρ
		1 1 0		
		of the NFSS.		

RATIONALE FOR SELECTION OF SEDIMENT AND SURFACE WATER SAMPLING LOCATIONS NIAGARA FALLS STORAGE SITE – NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Sample	Area of	Location	Justification for Sample point	Parameters to be
Number	Investigation			collected
SW920	Niagara-Mohawk	Co-located with SD920	This sample, when used in conjunction	Total Radionuclides
	Property		with its corresponding sediment sample,	Dissolved Radionuclides
			will allow for the determination if the	Total Uranium
			radiological parameters of interest are	Gross α/β
			accumulating in the surface water of the	-
			West Ditch at this point.	

SEDIMENT AND SURFACE WATER SAMPLE LOCATIONS AND ANALYSES REQUIRED NIAGARA FALLS STORAGE SITE - NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

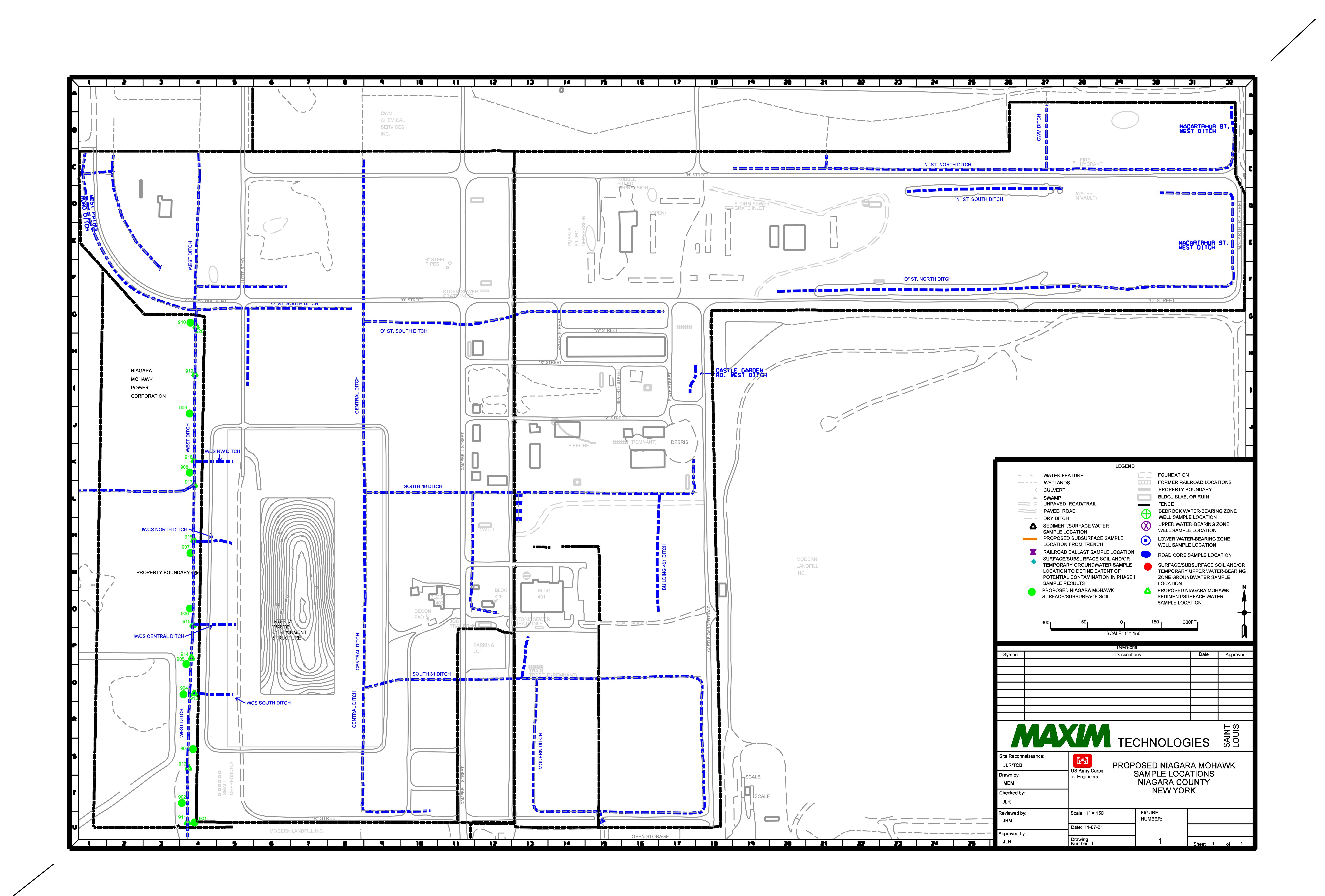
Identification							Parameters									
Sample Number	Area of Investigation	Sample Location	Matrix	Field QC Duplicate, QA Split, or MS/MSD Samples	VOCs	SVOCs	PCBs	Metals	Dissolved Radiological Isotopes	Total Radiological Isotopes	Total U	Gross a/b	Nitroaromatics			
SD911-2101	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment	QA						X	X	X				
SW911-2102	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water	QA					X	X	X	X				
SD912-2103	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment							X	X	X				
SW912-2104	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water						X	X	X	X				
SD913-2105	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment							X	X	X				
SW913-2106	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water	QC-2105					X	X	X	X				
SD914-2108	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment							X	X	X				
SW914-2109	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water						X	X	X	X				
SD915-2110	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment	QC-2109						X	X	X				
SW915-2112	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water						X	X	X	X				
SD916-2113	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment							X	X	X				
SW916-2114	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water						X	X	X	X				
SD917-2115	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment							X	X	X				
SW917-2116	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water						X	X	X	X				
SD918-2117	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment							X	X	X				
SW918-2118	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water						X	X	X	X				
SD919-2119	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment	MS/MSD						X	X	X				

SEDIMENT AND SURFACE WATER SAMPLE LOCATIONS AND ANALYSES REQUIRED NIAGARA FALLS STORAGE SITE - NIAGARA-MOHAWK PROPERTY INVESTIGATION LEWISTON, NEW YORK

Identification					Parameters									
Sample Number	Area of Investigation	Sample Location	Matrix	Field QC Duplicate, QA Split, or MS/MSD Samples		SVOCs	PCBs	Metals	Dissolved Radiological Isotopes	Total Radiological Isotopes	Total U	Gross a/b	Nitroaromatics	
SW919-2120	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water						X	X	X	X		
SD920-2121	Niagara-Mohawk Property	MARSSIM Unit 9A	Sediment							X	X	X		
SW920-2122	Niagara-Mohawk Property	MARSSIM Unit 9A	Surface Water	MS/MSD					X	X	X	X		

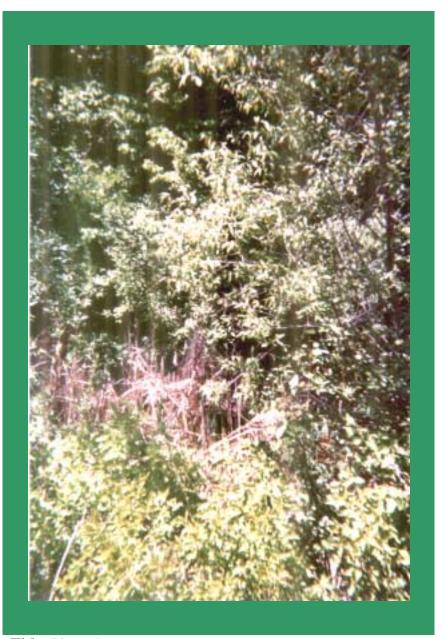
Note: See Section 5.0 of the Niagara-Mohawk Investigation FSP for methods and specific analytes

FIGURES



...\nfss_prpsd_nmohawk_loc_11_07_0 Dec. 02, 2003 09:08:59





Title: Photo 1 **Description:** Heavy vegetation, looking west, north of N-M property, near fence.



Title: Photo 2

Description: View to south from north end of N-M property. 20' wide strip between fence and ditch.

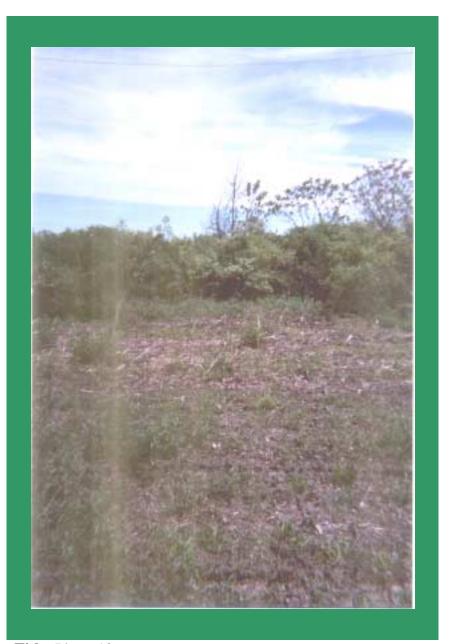


Title: Photo 6

Description: View to south, west of ditch, cut timber to west.



Title: Photo 12 **Description:** View to SW, soil pile on west side of ditch, 4' higher than east bank.



Title: Photo 13 **Description:** View to E. Cleared area in foreground. Thick bushes in background.



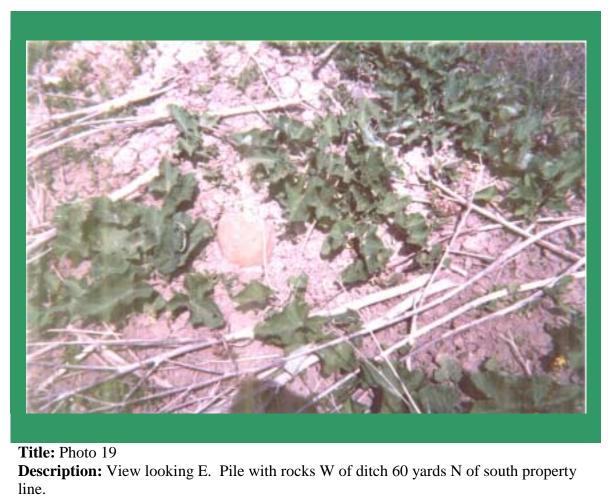
Title: Photo 14 **Description:** View to SW. Base of powerline poles elevated above surroundings.

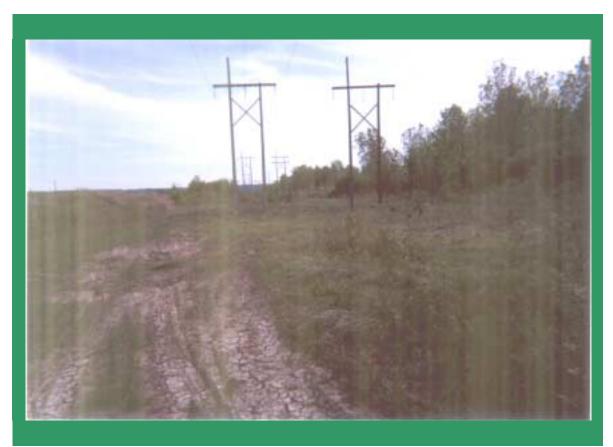


Title: Photo 15
Description: View looking east. Soil mound west of ditch.



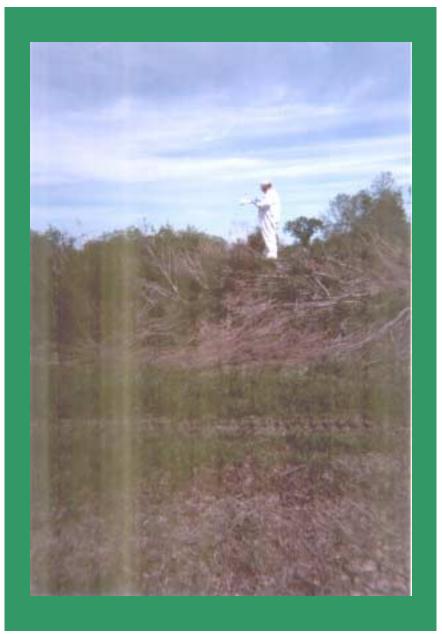
Title: Photo 18 **Description:** View looking west. Large rock present on W side of ditch, about 60 yards N of south property boundary.





Title: Photo 20

Description: View looking S, from southern property boundary. Property not covered in scope. Note drums in background.



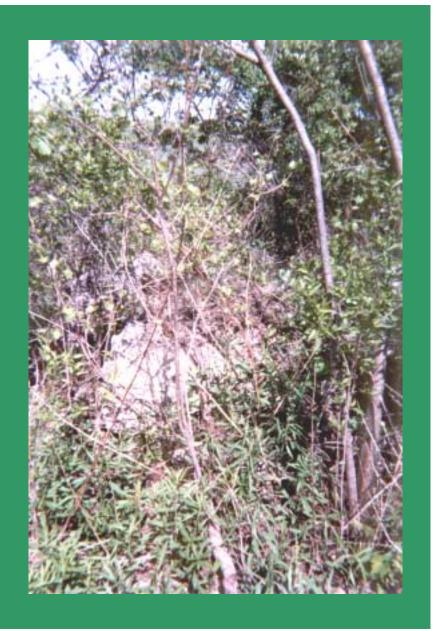
Title: Photo 21

Description: View to E, south end of property, west of ditch. Note elevation of soil pile. Ditch is beyond pile.



Title: Photo 22

Description: View to N. About 100 yards N of south property boundary. Road parallel to ditch, west of ditch. Note elevation on W side of road is several feet higher than on E side.



Title: Photo 23 **Description:** View to E, west side of ditch, east of road. Note debris including concrete blocks, steel pipe, fence post.

Comments on Field Sampling Plan Addendum for Niagara Falls Storage Site RI Niagara Mohawk Property J. S. Leithner, 15 July 2001

Comment #	Section/Page/ Paragraph	Item in Plan	Comment
1	1.0, Para. 3	"presence of migration of radiological constituents"	Please say "Surface Migration". One activist is claiming that we suspect migration from inside the waste containment structure. All of our data proves that migration from the WCS is NOT occurring.
2	Page 4, 3 rd bullet from bottom	Text refers to Photo 1 as depicting debris.	Photo 1 shows vegetation, not debris. (This does not require a change in the work plans before beginning work).
3	3.1, Para. 2.	A supplement to the FSP is promised.	Agreed, but please make this brief. It will not require a separate binder. A table like Table 1 with a companion figure showing sample location will suffice.
4	3.1, Para. 2 and Table 1	Depth of hand augering is covered by referring to Table 1.	How were these depths selected? Was this based on what you know about the geology at the specific areas? Hand augering can be difficult through hard packed soil, but is it possible to go down to the top of the upper clay layer?
5	Page 6, 5 th Para. from bottom.	It is assumed that foliage will not interfere with the topographics survey. However in later conversations with Maxim, was thought that site clearing will be needed for other reasons.	Apparently the West Ditch needs to be cleared to properly assess extent of potential rad migration. We need to settle the site clearing issue ASAP, since this work is about to begin.
6	Section 4.0, Para. 3.	Analysis of dissolved radionuclides is to be based on radionuclide risk-based screening levels from the main RI.	What are you calling the "risk-based" screening levels? Are these the rad screening values we used to assess data for Phases 1 and 2?

Comment #	Section/Page/ Paragraph	Item in Plan	Comment
7	Table 1, Page 1 (etc)	Background is given as 8,000 cpm.	This differs from the 13,000-15,000 used by SAIC. Where did you obtain the data. This question will also be asked of SAIC, as we must use a consistent value throughout the project. This has been a favorite area for comment by some of the activists.
8	Photos	All of them.	This is a helpful addition to the plan. Thanks for providing them.

Comments on Field Sampling Plan Addendum for Niagara Falls Storage Site RI Niagara Mohawk Property
J. S. Leithner, 15 July 2001

Maxim Responses, 31 July 2001

Comment #	Section/Page/ Paragraph	Item in Plan	Comment
1	1.0, Para. 3	"presence of migration of radiological constituents"	Please say "Surface Migration". One activist is claiming that we suspect migration from inside the waste containment structure. All of our data proves that migration from the WCS is NOT occurring. Response: Agreed, surface will be placed in front of migration in this sentence.
2	Page 4, 3 rd bullet from bottom	Text refers to Photo 1 as depicting debris.	Photo 1 shows vegetation, not debris. (This does not require a change in the work plans before beginning work). Response: Agreed, to make the bullet correct, the reference to the photograph will be removed.
3	3.1, Para. 2.	A supplement to the FSP is promised.	Agreed, but please make this brief. It will not require a separate binder. A table like Table 1 with a companion figure showing sample location will suffice. Response: Agreed, this supplement needs only to show the results of the gamma walkover and to pinpoint the locations for sample collection. As such, a figure and table will be provided as the supplement.
4	3.1, Para. 2 and Table 1	Depth of hand augering is covered by referring to Table 1.	How were these depths selected? Was this based on what you know about the geology at the specific areas? Hand augering can be difficult through hard packed soil, but is it possible to go down to the top of the upper clay layer? Responses: The depths of the subsurface samples were

Comment #	Section/Page/ Paragraph	Item in Plan	Comment
	Paragraph		 chosen as follows: For samples that occur in the piles of material, the subsurface sample depth corresponds to the assumed level of the original bank height and 0.5 feet into the "original" upper Brown Clay Unit (i.e., the top 0.5 feet of the material that existed on the ditch bank prior to the placement of the spoil pile). For samples located in areas that are typical of "natural" grade, the subsurface sample will be collected from 1.5 to 2.0 feet below the ground surface. This interval is the same as used in the Phase II of the Remedial Investigation for the evaluation of the vertical extent of hot spots. Yes, the depths were based on the geology (assumed to be dredged material) at the specific areas and by the field observation of the material. Agreed, it is tough hand augering through hard packed soil. From our Phase II and Pipeline Investigation experience, hand augering has been appropriate to a depth of at least 4 feet below the ground surface. The most difficult problems encountered during hand augering at the NFSS have been from rocks and gravel at some of the sampling locations. The observed piles of material lining the majority of the western bank of the West Ditch are assumed to be composed primarily of dredge spoil.
			Dredged materials are not typically consolidated and packed with machinery upon excavation. Additionally, the upstream material found within the ditches around the NFSS does not contain many stones and gravel. Therefore,

Comment #	Section/Page/ Paragraph	Item in Plan	Comment
			it is unlikely that the spoil pile contains sufficient amounts of stone or gravel to preclude the use of the hand augering sample collection technique.
5	Page 6, 5 th Para. from bottom.	It is assumed that foliage will not interfere with the topographics survey. However in later conversations with Maxim, was thought that site clearing will be needed for other reasons.	Apparently the West Ditch needs to be cleared to properly assess extent of potential rad migration. We need to settle the site clearing issue ASAP, since this work is about to begin. Response: Agreed, the clearing of the ditch will allow for collection of GPS/gamma walkover data which will be much more efficient, accurate, and cost effective than the hand drawn and manually input data.
6	Section 4.0, Para. 3.	Analysis of dissolved radionuclides is to be based on radionuclide risk-based screening levels from the main RI.	What are you calling the "risk-based" screening levels? Are these the rad screening values we used to assess data for Phases 1 and 2? Response: At this point in time, the "risk-based" screening levels will be the same as the screening values previously used to screen the Phase I and Phase II data. These screening values are subject to change based on further discussions with the USACE risk assessor and health physics personnel.
7	Table 1, Page 1 (etc)	Background is given as 8,000 cpm.	This differs from the 13,000-15,000 used by SAIC. Where did you obtain the data. This question will also be asked of SAIC, as we must use a consistent value throughout the project. This has been a favorite area for comment by some of the activists. Response: This was the "local" background value reported to Maxim by one of SAIC's health physics technicians at the time of the initial Niagara-Mohawk

Comment #	Section/Page/ Paragraph	Item in Plan	Comment
			survey. Maxim is unaware of the 13,000-15,000 cpm value used by SAIC. The background calculated and presented in the Phase II FSP (based on the walkover surveys performed during Phase I) was 10,000 cpm.
8	Photos	All of them.	This is a helpful addition to the plan. Thanks for providing them. Response: Thanks

Complete and Return to:	Judith Leithner - Pro	ject Manager	

Project: Niagara Falls Storage Site – Draft Field Sampling Plan Addendum for the Niagara Mohawk Property Investigation

Reviewer/Section: Michelle Rhodes – Assistant Project Engineer – CELRB-ED-EE _______ **Date:** 7/5/01

COMMENT NUMBER	PAGE OR SHEET	COMMENT	RESPONSE
1	Page 2, end of 1 st para	Please add "All revisions that may impact cost must be approved with USACE Project Manager prior to sampling." To the end of the first paragraph.	
2	Page 2, last Para	According to the negotiations for this modification, Maxim shall utilize the existing RPP. However, Maxim shall prepare an addendum to the existing SSHP to address new safety-related conditions associated with the Niagara Mohawk Property. The SSHP addendum shall address power transmission equipment, owners requirements relating to accident reporting, restrictions to on-site activities and equipment permitted to be on-site, site restoration, grounding, equipment storage, drainage, etc. per the February 23, 2001 revised Maxim cost proposal. Maxim shall ensure that all grounds of the right-of-entry are complied with during the performance of this work.	
3	Page 4, Bullet	You mention seeing concrete with steel reinforcement. Please show SAIC geophysical	

Complete and Return to:	Judith Leithner - Pro	ject Manager	

Project: Niagara Falls Storage Site – Draft Field Sampling Plan Addendum for the Niagara Mohawk Property Investigation

COMMENT NUMBER	PAGE OR SHEET	COMMENT	RESPONSE
	#2	reps this debris as it may be representative of the	
		building materials in the WCS.	
4	Page 6, Para 5	Please include that if overhead power lines or foliage interfere with the GPS, CPM data will be recorded in 2-second intervals and travel paths will be sketched during the survey (using distance measurements from the fence as a reference). The data will be color-coded and overlaid onto a map by Maxim. This method was indicated by SAIC in the January 24, 2001 proposal.	
5	Table 1	Although it is understood that the reasoning behind the >2.5ft depth for subsurface sample collection is due to the drilling method (hand auger), please indicate that the depth is at least 2.5 feet and until auger refusal.	

Complete and Return to: Judith Leithner – Project Manager

Project: Niagara Falls Storage Site – Draft Field Sampling Plan Addendum for the Niagara Mohawk Property Investigation

COMMENT NUMBER	PAGE OR SHEET	COMMENT	RESPONSE
1	Page 2, end of 1 st para	Please add "All revisions that may impact cost must be approved with USACE Project Manager prior to sampling." To the end of the first paragraph.	Agreed, the suggested text will be added.
2	Page 2, last Para	According to the negotiations for this modification, Maxim shall utilize the existing RPP. However, Maxim shall prepare an addendum to the existing SSHP to address new safety-related conditions associated with the Niagara Mohawk Property. The SSHP addendum shall address power transmission equipment, owners requirements relating to accident reporting, restrictions to on-site activities and equipment permitted to be on-site, site restoration, grounding, equipment storage, drainage, etc. per the February 23, 2001 revised Maxim cost proposal. Maxim shall ensure that all grounds of the right-of-entry are complied with during the performance of this work.	A revised SSHP will be prepared to address those concerns. Since this document will be a task specific update, a memo format will be adopted and this addenda will focus only on the Niagara-Mohawk electrical hazard, right-of-entry compliance, and other associated safety issues.
3	Page 4, Bullet	You mention seeing concrete with steel reinforcement. Please show SAIC geophysical	This concrete with reinforcement steel has already been shown to field team members of

Complete and Return to:	Judith Leithner – Project Manager

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Reviewer/Section: Michelle Rhodes – Assistant Project Engineer – CELRB-ED-EE ________ **Date:** 7/5/01

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	#2	reps this debris as it may be representative of the building materials in the WCS.	SAIC, but will also be shown to the geophysical personnel also.
4	Page 6, Para 5	Please include that if overhead power lines or foliage interfere with the GPS, CPM data will be recorded in 2-second intervals and travel paths will be sketched during the survey (using distance measurements from the fence as a reference). The data will be color-coded and overlaid onto a map by Maxim. This method was indicated by SAIC in the January 24, 2001 proposal.	The described method will be incorporated into the text of Section 3.1.1.
5	Table 1	Although it is understood that the reasoning behind the >2.5ft depth for subsurface sample collection is due to the drilling method (hand auger), please indicate that the depth is at least 2.5 feet and until auger refusal.	Although it is not anticipated that the scheduled sample depth will not be achieved, the following phrase will be added to each sample location in Table 1 with a subsurface sample: (using SS901/SB901 as and example) between 1.5 and 2.0 feet below the ground surface <i>or until auger refusal</i> at the location.