

# Niagara Falls Storage Site and Lake Ontario Ordnance Works Site

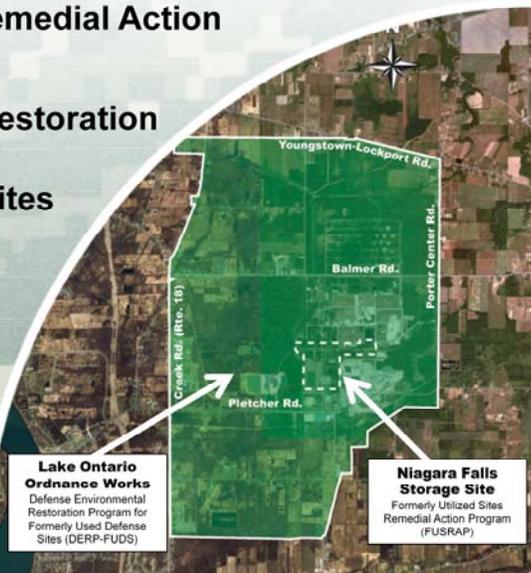
Formerly Utilized Sites Remedial Action  
Program

Defense Environmental Restoration  
Program for  
Formerly Used Defense Sites

Lewiston/Porter, New York  
June 23, 2010



US Army Corps of Engineers  
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Good evening everyone, please make sure you have a handout package and take your seats. My name is Arleen Kreuzsch and I am the Outreach Specialist for the Special Projects Environmental Team. I need to go over a few logistics with you before we start. The facilities are on my left and there are two emergency exits in the back in addition to the door you came in.

I just have a few operating principles for tonight's meeting to go over. Please turn off your cell phones or pagers, anything that will beep or buzz during the meeting. Please listen respectfully. We will be following the same format that we usually follow for this workshop starting with presentations, a poster session and then the discussion portion of the evening, so please hold your questions or comments for the discussion portion of the workshop..

I will now turn this meeting over to John Busse, Program Manager for the former Lake Ontario Ordnance Works Site and the Niagara Falls Storage Site.

Good Evening, my name is John Busse and I work for the US Army Corps of Engineers in Buffalo, NY. I am the Program Manager for the former Lake Ontario Ordnance Works/Niagara Falls Storage Site. The outlines of the former LOOW and NFSS are shown on this figure.

Before I review the agenda for tonight I would like to introduce you to the project team.

Bill Kowalewski, Special Projects Branch Chief; Bill Frederick, Environmental Projects Team Leader; Steve Bousquet Environmental Health Section Team Leader; Dave Frothingham, Environmental Engineering Section Team Leader; Michelle Barker, Regional Technical Specialist; Mick Senus, Lake Ontario Ordnance Works Project Manager; Jeff Hall, Lake Ontario Ordnance Works Project Engineer, Jeff is also the Project Manager for our Office of Economic Adjustment Work at the Lewiston Waste Water Treatment Plant; Jim Stachowski, who will be replacing Jeff Hall as the Project Engineer for the Lake Ontario Ordnance Works Site; and Jane Staten, Project Engineer for Niagara Falls Storage Site; also, Arleen Kreuzsch and Natalie Watson, our Outreach Team and Bruce Sanders our Chief of Public Affairs.

I'd also like to introduce Mr. Paul Giardina, Chief of the Radiation and Indoor Air Branch from from the US Environmental Protection Agency Region 2.

# Agenda

## 6:00 – 6:45 Presentations

### Niagara Falls Storage Site

- Building 401 Dismantlement
- Remedial Investigation/Feasibility Study Update
- What's Next

### Lake Ontario Ordnance Works

- Lewiston-Porter School Property Sampling

### U.S. EPA Presentation

## 6:45 – 7:15 Poster Session

## 7:15 – 8:45 Discussion Workshop

## 8:45 – 9:00 Team Available



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Tonight's Niagara Falls Storage Site presentation will include information on the dismantlement of Building 401, followed by an update on the Remedial Investigation and Feasibility study, as well as what is next for the project.

We received a request from the community to add an update on our projects on the former Lake Ontario Ordnance Works Site so this item was added to the agenda. The Lake Ontario Ordnance Works presentation will focus on the Corps' strategy for conducting sampling on the Lewiston-Porter School property.

Next, Mr. Paul Giardina from the U. S. Environmental Protection Agency will give a presentation regarding the Niagara Falls Storage Site.

Paul's presentation will be followed by a poster session while we rearrange the room for the discussion portion of the evening.

We did receive a request from the community to add a discussion of transparency to the agenda, if the community wants to discuss this topic, it can be brought up during the discussion portion of the workshop.

# Building 401

- History
- State Historic Preservation Office Requirements
- Overview of Demolition



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I will walk you through a brief history of this building, State Historical Preservation Office (SHPO) requirements, and an overview of the demolition of Bldg. 401.

## Building 401 History

- Steam generation building for TNT production
- Storage of radioactive materials in World War II
- Boron-10 production
- Inactive and deteriorating structure

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I know many of you are familiar with the site, but for those who are not, I am going to go through a brief history of Building 401.

This is a 1944 photograph of the site looking northeast with Building 401 annotated.

NFSS is located at 1397 Pletcher Road, Lewiston, New York, and the site is owned by the Federal Government. The site consists of an engineered 10-acre Interim Waste Containment Structure (IWCS), various buildings, and open areas. The site was originally a part of the Lake Ontario Ordnance Works (LOOW). The primary use of the site from early 1940s through mid 1950s was for storage of radioactive waste from various sources.

Building 401 was initially the powerhouse for the production of TNT at the former LOOW, and it was also used to store radioactive materials in support of Manhattan Engineer District activities during World War II.

It was used for the production of Boron-10 from 1953 to 1959 and from 1965 to 1971 and then became a waste storage facility used by the Atomic Energy Commission/Department of Energy (AEC/DOE).

In 1971, Building 401 was gutted and its instrumentation, equipment, and hardware were disposed of as surplus materials. This building has been largely inactive since, and there is evidence of bird and animal occupation.

From 1995 through 1997 Building 401 went through a decontamination effort.

An asbestos abatement was performed on the interior of Building 401 in the spring and summer of 2002, resulting in the removal of asbestos containing material.

## State Historic Preservation Office

- Memorandum of Agreement between the Corps and New York State Historic Preservation Office
- Historic American Building Survey-Historic American Engineering Record Level II



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Building 401 was determined eligible by the New York State Historic Preservation Office for listing in the National Register of Historic Places.

It was agreed between the Corps and the New York State Historic Preservation Office that Building 401 currently poses a safety hazard to site workers and to Corps and other agency personnel. Removal of the building excluding the slab is necessary for the Corps to address underlying contaminated soil. Additionally, although Building 401 is currently structurally stable, the deteriorated state of the building, localized areas of contamination, and its location on an active FUSRAP site warrant demolition of the building (and not reuse/rehabilitation).

In accordance with Section 106 of the National Preservation Act, the Corps and the State Historic Preservation Office entered into a Memorandum of Agreement on March 1, 2010.

In consultation with the State Historic Preservation Office, the Corps will document Building 401 through a Historic American Building Survey/Historic American Engineering Record Level II Photographic documentation and accompanying narrative in accordance with the Secretary of the Interior's Guidelines for Architectural and Engineering Documentation.

Three sets of black and white photographs and one set of negatives that record the exterior appearance and major interior spaces will be prepared prior to the commencement of demolition activities.

A time-lapse video of the demolition project will be created and provided.

The Corps will also include a historical interpretation of the original Building 401 through the use of plaques or markers and illustrate the history of the complex, and the significance of its role.

# Demolition of Building 401

- Prepare work plans
- Mobilization
- Pre-demolition activities



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The photographs depicted on this slide are of the interior of Building 401 (left) and the northeast exterior of the building (right). Building 401 is a steel-framed multi-story structure with poured-concrete floors and has a ridge height of approximately 76.5 feet, encompassing 1,000 square feet. The main structural system of the building consists of steel and concrete load-bearing walls. The interior walls are primarily poured concrete and concrete block. The exterior is comprised of sections of corrugated steel and transite siding. Inside the building, there are multiple floors which contain rooms, offices, and building service areas (e.g., boiler rooms and tower areas). Building 401 also has three large concrete silos.

A contract was awarded to Terranear and Energy Solutions (TES) to demolish Building 401 using American Recovery and Reinvestment Act (stimulus) funding. TES will subcontract actual building demolition to a local demolition company, DEMCO (responsible for demolition of Buffalo's Memorial Auditorium, Yankee Stadium & numerous buildings at DOE facilities). By using a local demolition firm, TES was able to generate jobs within the local community using stimulus funding.

The services required under this scope of work involve characterization, demolition, packaging, and disposal of Building 401 in accordance with applicable local, state and federal regulations.

Removal/abatement precautions will be used to control waste streams such as: bird and animal waste; potential asbestos containing material in roofing and siding; lead-based paint on surfaces within the building; miscellaneous debris, and contaminated structural elements and concrete including sumps and drains. Potential contaminants include biological, radiological, chemical (VOC and SVOC), metals, pesticides, and PCBs. As a result, TES will need to characterize all waste streams to determine the appropriate disposal methods. All materials will be sorted, segregated, packaged and transported in accordance with regulatory requirements.

TES is currently in the process of developing work plans to complete this work. TES will provide work plans as follows: site operations plan, health and safety and radiation safety plans, sampling and analysis plan, waste management, transportation, and disposal plan, quality control plan, engineering and structural survey, and a demolition plan. The work plans will be available for public review by the end of July affording the community an opportunity to review and comment on the plans.

Once mobilization is completed sometime towards the end of August, TES and their subcontractors will begin pre-demolition activities. Pre-demolition work will be comprised of the following activities: asbestos survey of the exterior and selected interior areas; establishment of debris stockpile areas; radiological survey of work areas and building contents; plugging of drains and sumps after removal of liquids to extent practicable; inventory of hazardous materials within the building; development of drawings showing all utilities; and waste profile sheets for all waste streams. This will also include obtaining licenses, permits, and notifications.

Additional pre-demolition activities are as follows: TES will identify and quantify hazardous materials including lead, light ballasts, mercury sodium vapor lights, capacitors, and thermostats and remove prior to demolition; treat bird and animal waste; potential ACM material will also be identified and sampled prior to initiating any demolition activities and removed and properly packaged; materials in drains and sumps also will be sampled and analyzed to determine the appropriate disposal, handling, and safety and health considerations; windows and glass materials will be removed; and soils around building 401 will be covered with geotextile fabric and stone to prevent migration or impact to potentially contaminated soil surrounding the building.

# Demolition of Building 401

- Demolition
- Post demolition activities



Photographs of  
Linde Site Building  
Demolition



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The photographs above are of demolition activities at the Linde Site. In both of these pictures you can see that the building is taken down in pieces. This is the same approach we will use when we take Building 401 down at NFSS.

TES will complete the demolition of Building 401 and the attached silos by the end of the calendar year. The concrete floor slab will remain. TES intends on recycling the majority of steel within this building. In order to recycle steel or dispose of materials and debris within New York State, materials, debris, and steel must not have radiological levels above background and any materials, debris or steel exhibiting radiological levels above background will be disposed at energy solutions facility in Clive, Utah or decontaminated and resurveyed to meet compliance with stringent regulatory requirements.

Dust control measures will be implemented to prevent the spread of contamination and maintain particulate level at the permissible exposure level specified in OSHA regulations. The dust control program will consist of both dust suppression measures and ambient air monitoring to verify the success of the dust suppression. Dust control measures include the following: wetting demolition equipment and active demolition areas; covering waste/debris; hauling waste/debris in covered or closed containers; keeping vehicle speeds low; and applying a water spray during waste/debris handling and to unpaved vehicle access routes as necessary.

All wastewater will be diverted and collected during demolition of the building.

The demolition is better characterized as a safe and precise dismantling of Building 401. DEMCO will start at the top of the building and proceed downward bay by bay through the facility. The roof will be removed then each bay will be dismantled beam by beam, column by column.

Post construction survey will be performed on all equipment and work areas.

TES will demobilize all equipment from the site, cleanup the site as necessary, and provide a final report documenting demolition activities including sample and survey results.

At the conclusion of the dismantlement of Building 401, the work area will be left in a manner that is free of physical hazards.

## Current Schedule

- Work plans – Late July 2010
- Mobilization – Mid through late August 2010
- Pre-demolition activities – Late August 31 through late September 2010
- Removal/Abatement of miscellaneous waste – Late September through early November 2010
- Demolition – Late October through early December 2010
- Post Demolition Activities – Early December through mid-January 2011
- Final project report – March 2011



The current schedule for the dismantlement of Building 401 is listed on this slide. I would now like to introduce Michelle Barker, who will provide you with an update on the NFSS Remedial Investigation/Feasibility Study.

# Niagara Falls Storage Site

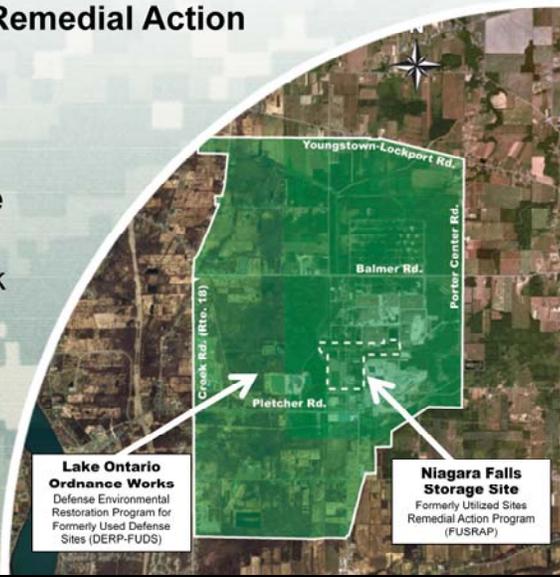
Formerly Utilized Sites Remedial Action Program

Remedial Investigation/  
Feasibility Study Update

Lewiston/Porter, New York  
June 23, 2010



US Army Corps of Engineers  
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Thank you John. My name is Michelle Barker and I will be providing an update tonight on the Remedial Investigation and Feasibility Study activities for the Niagara Falls Storage Site.

# NFSS Remedial Investigation Conclusions

- No immediate off-site risk
- No current off-site contaminant migration is occurring via surface water or sediments in drainage ditches
- Limited groundwater contamination



The goal of the Remedial Investigation that was conducted between 1999-2003 was to define the nature and extent of radiological and chemical contamination resulting from historic Manhattan Engineer District and Atomic Energy Commission operations and to evaluate potential risks to human health and the environment.

As discussed at the public workshop last June, findings from the NFSS RI are highlighted on this slide.

After the RI Report for NFSS was published in December 2007, the Corps received 334 comments. In 2009, the Corps conducted additional fieldwork to prepare an addendum to the RI to address data gaps and these comments.

The Corps is concurrently preparing documentation in support of the Feasibility Study for the Interim Waste Containment Structure (IWCS) to examine a variety of options to address potential long-term risks associated with the IWCS.

To ensure protectiveness of human health and the environment in the interim the Environmental Surveillance Program and site operations and maintenance activities will continue.

## RIR Addendum Focus

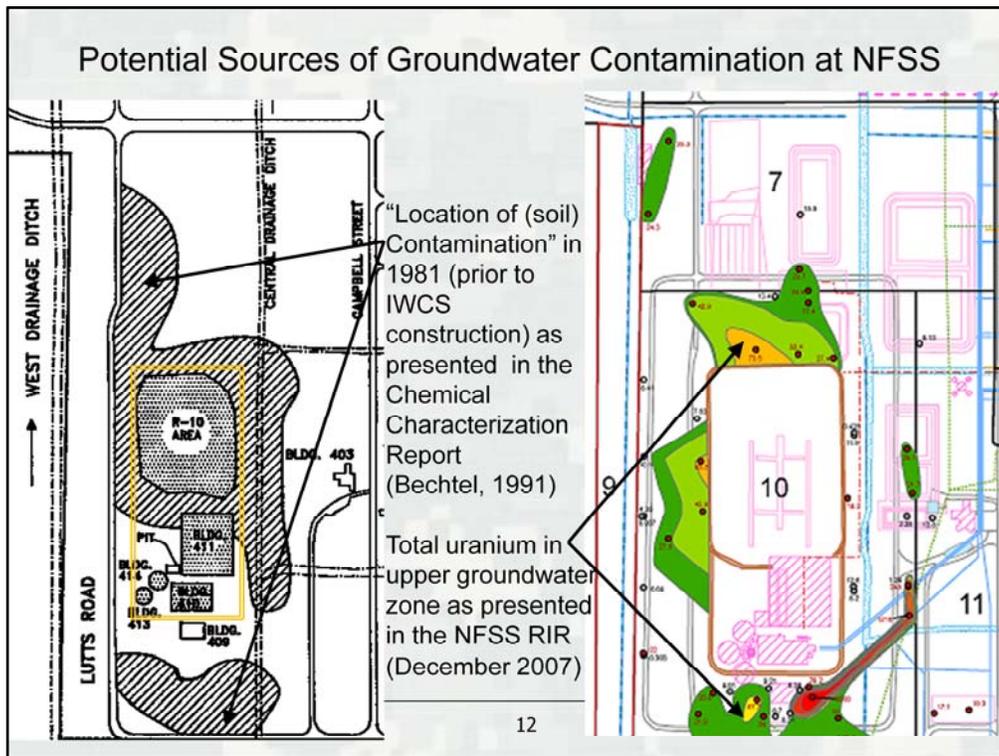
- Potential sources of groundwater contamination at NFSS
- Potential for off-site migration of contaminants in groundwater
- Potential for contaminated groundwater to discharge to ditches
- Integrity of the Interim Waste Containment Structure
- Potential for plutonium and fission products on NFSS



A majority of the 334 public comments received on the Remedial Investigation Report for NFSS can be categorized into 5 areas of interest that you can see on the slide.

1. Potential sources of groundwater contamination at NFSS;
2. Potential for off-site migration of contaminants in groundwater;
3. Potential for contaminated groundwater to discharge to ditches;
4. Integrity of the IWCS; and
5. Potential for plutonium and fission products on NFSS.

This presentation will generally discuss how each of these topics will be addressed in the Remedial Investigation Addendum Report, which is under development and is currently scheduled for public release by the end of this calendar year.



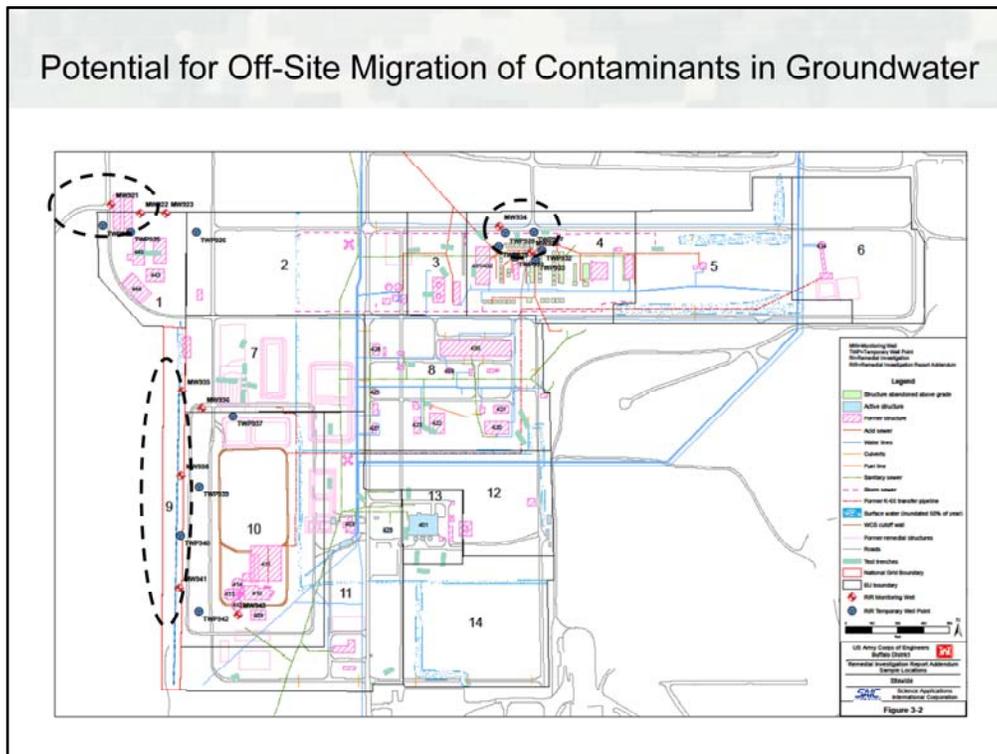
The first topic of interest for the Remedial Investigation Addendum for NFSS is the potential sources of groundwater contamination near the Interim Waste Containment Structure (IWCS). The concern with groundwater contamination near the IWCS boundary is the ability to distinguish whether the IWCS is performing as designed.

The left figure is Figure 2-3 in the Chemical Characterization Report prepared by Bechtel National in December of 1991. In this report, Bechtel highlights “areas of known contamination” in 1981, prior to the construction of the cell, which closely resemble total uranium contamination in groundwater measured over 25 years later.

The Final Report on a Comprehensive Characterization and Hazard Assessment of the DOE (Battelle, June 1981) states “The area (referring to the R-10 area highlighted in the figure to your left) has been fairly unstable, eroding east to the Central Drainage Ditch and eroding west onto the area west of the site and into the West Ditch. Also, this area is underlain by one or more saturated zones, creating the potential for subsurface migration to off-site areas.”

The most likely source of groundwater contamination near the IWCS is historic leaching from the R-10 pile prior to the construction of the IWCS. The R-10 pile was left open to the elements from 1946 through 1982 (for 36 years). The R-10 spoil pile is now located inside the IWCS, along with other residues and wastes. However, current groundwater contamination near the IWCS (demonstrated by the figure on the right) closely mimics the documented location of contamination in 1981 (figure on the left), prior to the construction of the IWCS.

The Corps is committed to closely monitoring groundwater contamination near the IWCS as part of the ongoing Environmental Surveillance Program.



One data gap identified during the Remedial Investigation was the potential for groundwater contaminants to migrate off-site. Highlighted in this slide are the general areas of interest with the greatest potential for off-site groundwater migration, which were identified at the public workshop last June. The primary groundwater contaminant having the greatest potential for off site migration was uranium, however, chemical contamination also had the potential to migrate off-site in the rightmost highlighted area of interest.

To address this data gap, 23 temporary wells (identified in blue) were installed during the Remedial Investigation Addendum fieldwork. Of these 23 wells, ten wells (identified in red) were made permanent, based upon initial findings (such as quick-turnaround analytical data from the laboratory and radiological and chemical screening) and the rest were sampled and closed.

Preliminary results based on a single sampling event indicate that uranium contamination in groundwater exists off-site but only slightly above the US Environmental Protection Agency Safe Drinking Water Act (SDWA) standard.

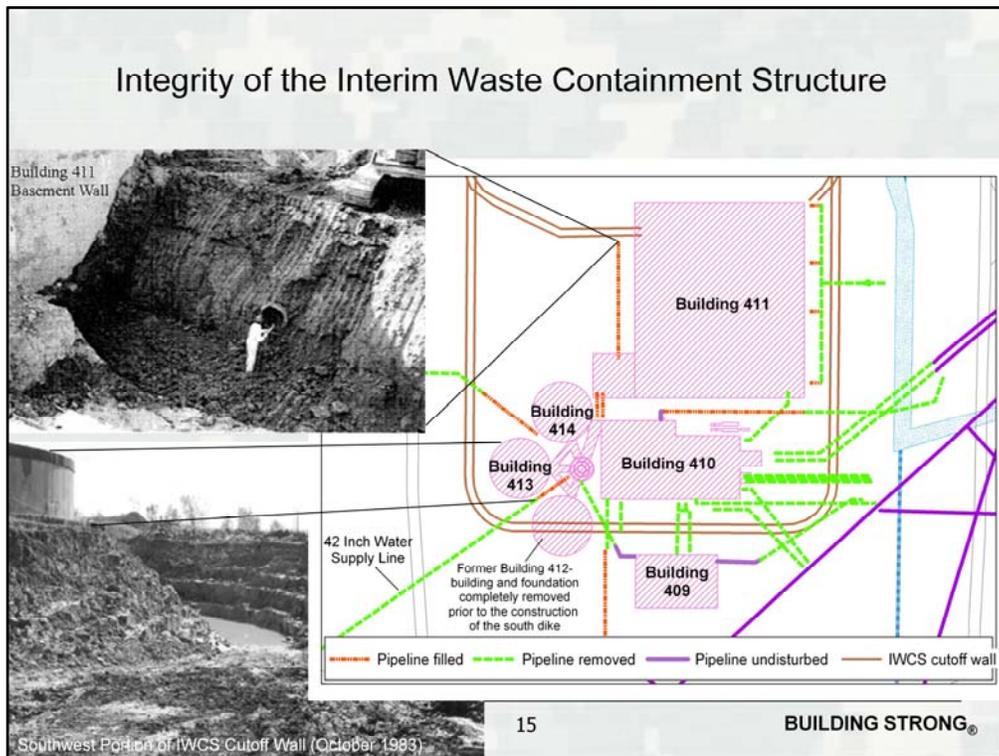
The Corps is assessing which of the newly installed wells should be incorporated into the Environmental Surveillance Program for monitoring to ensure protection of human health and the environment during the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) investigation.



The third topic of interest for the Remedial Investigation Addendum was the potential for contaminated groundwater to enter ditches on NFSS.

To address this comment in the RIR Addendum, the following approaches were taken.

1. Uranium in surface water from the West Drainage Ditch were compared to uranium in nearby groundwater to determine if a pattern existed which may infer a connection between surface water in the ditch and groundwater. It did not appear that there was a correlation.
2. Groundwater modeling was conducted to simulate groundwater entering ditches in order to estimate what levels of contaminated surface water would result.
3. In 2008, the Corps enhanced the Environmental Surveillance Program at NFSS by increasing the frequency of collection of surface water and sediment in the ditches from annual to biannual, the number of sample locations from seven to ten, and the parameters sampled for to include metals and organic chemicals in addition to radionuclide and water quality parameters. Currently, there are four surface water and sediment locations sampled in the Central Drainage Ditch, three in the West Drainage Ditch, and the remaining three in east-west ditches feeding into the Central Drainage Ditch. To date, uranium found above background in surface water in the West Drainage Ditch during RI sampling cannot be replicated. In other words, uranium in surface water from the West Drainage Ditch sampling as part of the Environmental Surveillance Plan remain comparable to background. Regardless, the Corps is committed to closely monitoring surface water and sediment in ditches as part of the ongoing Environmental Surveillance Program.



One concern raised in comments on the NFSS RI Report is the potential impact of former LOOW subsurface pipelines on the integrity of the Interim Waste Containment Structure (IWCS). The original purpose of these 1940s era pipelines was to support the former LOOW freshwater treatment plant.

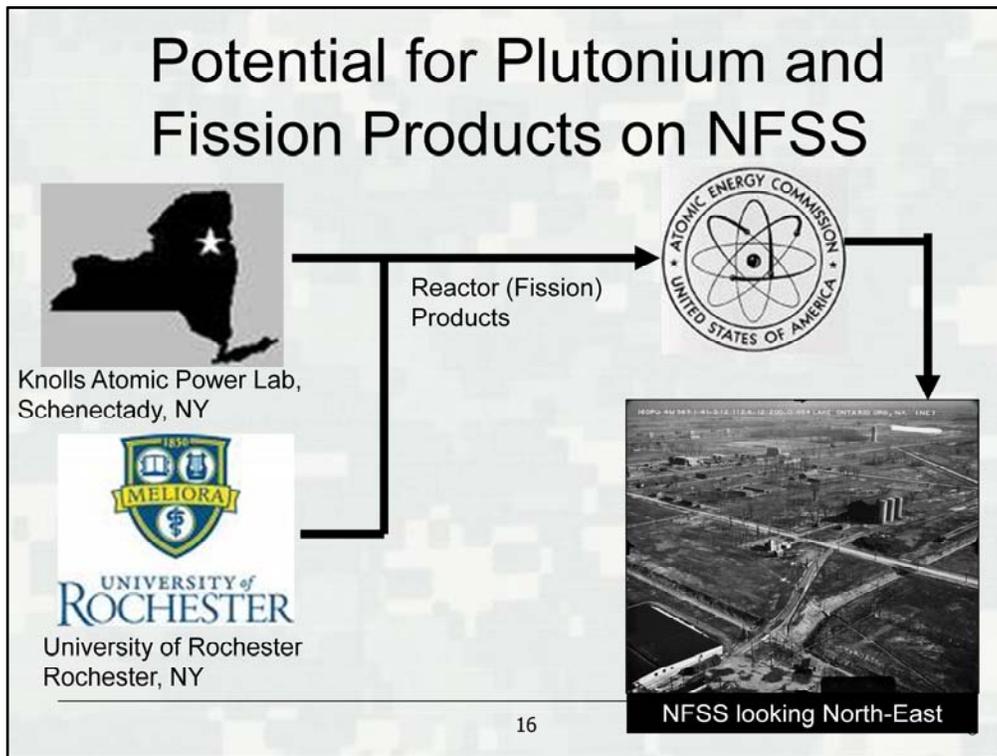
As shown on the photos in this slide, when the IWCS was constructed in the 1980s, the United States Department of Energy (USDOE) excavated around buildings that now house radioactive residues to the native confining clay layer and surrounded the waste with a compact clay cutoff wall. The purpose of the cutoff wall was to inhibit groundwater from entering or leaving the IWCS.

In the process of constructing the cutoff wall, the USDOE severed or removed and filled subsurface pipelines (as shown in the IWCS construction drawing titled the "South Dike Piping Plan and Schedule" above).

The following weights of evidence on IWCS integrity were discussed in the NFSS RI Report or will be discussed in the RIR Addendum:

1. Routine maintenance and monitoring of the IWCS cap.
2. Biannual sampling of contaminants in groundwater near in the IWCS as part of the Environmental Surveillance Program.
3. Groundwater modeling of potential contaminant transport from the IWCS assuming no protective cutoff wall demonstrated protectiveness for 160 years.
4. Limited migration of contaminants due to natural confining clay on-site.
5. Geophysical survey of areas north of Building 411 on the IWCS indicate no short-term competency issues such as fractures, depressions, potential voids and caverns that may impact IWCS integrity.
6. The lack of groundwater contamination in the lower water-bearing zones on-site.
7. A topographic survey, which measures elevations of the ground surface, compared 1991 as-built elevations to 2009 to determine if settling of the IWCS has occurred over the past 20 years that may compromise IWCS integrity. Negligible settling was evident.

The Corps is committed to closely monitoring the IWCS as part of the ongoing Environmental Surveillance Program as ensuring the protectiveness of human health and the environment is the Corps #1 mission at the site.



The potential for plutonium and fission products on NFSS and adjacent properties was raised as a public comment during review of the NFSS Remedial Investigation (RI) Report. Between 1952 and 1954, spent fuel rods, reactor waste, and combustible material from Knolls Atomic Power Lab (KAPL) in Schenectady, NY and animal remains and medical debris from radiological inhalation tests on animals at the University of Rochester in Rochester, NY were sent to the Lake Ontario Ordnance Works (LOOW). In the later 1950's, a majority of the KAPL waste stream was shipped from the LOOW site to burial grounds at the Oak Ridge National Laboratory in Tennessee.

To address this concern in the RIR addendum, the plutonium data set was supplemented with 17 additional soil sample locations, and 54 soil samples of drummed RI waste from dedicated locations were analyzed to ensure a greater level of coverage throughout the site.

Cesium levels in soil posed unacceptable risk in the RI at NFSS and will be evaluated further in the Balance of Plant (BOP) Feasibility Study. Cesium found above background in groundwater during the NFSS RI, although below drinking standards, could not be replicated during the Remedial Investigation Addendum. It is assumed that the detections of cesium in groundwater during the NFSS RI may be a function of turbidity and not representative of the actual concentration available in groundwater at the site.

The Corps will continue to consider the potential for plutonium and fission products on the NFSS, however, our current focus for the Feasibility Study phase will be the IWCS.

I'd now like to introduce a new member of the Corps team, Jane Staten. Jane is the Project Engineer for the Niagara Falls Storage Site.

## What's Next

- Remedial Investigation Report Addendum
- Feasibility Study for the Interim Waste Containment Structure
- Fact Sheets and Technical Memoranda
- Ongoing site maintenance, environmental monitoring, and annual reporting



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1. As Michelle explained, the Corps is currently preparing the Addendum to the Remedial Investigation Report which will be available for public comment by the end of this calendar year.
2. Concurrently, the Corps will begin preparing the Feasibility Study for the Interim Waste Containment Structure.
3. The public will be given the opportunity to review and comment as we progress through the development of the Feasibility Study. The Corps will first release a fact sheet describing the objectives of each technical memorandum and ask for public input on these objectives. The Corps will consider the comments received and then develop and release each technical memorandum. The public will again be provided the opportunity to comment on each technical memorandum. Responses to public comments on each technical memorandum will be made available on the project website. Comments on the Technical Memoranda will be considered in the development of the Feasibility Study for the IWCS.
4. The first of these fact sheets is in your handout package and outlines the objectives of the first IWCS Feasibility Study Technical Memorandum; the Radon Assessment. Public comment on the objectives of this technical memorandum is requested by July 23, 2010.
5. Throughout the process the Corps will continue to maintain the site, to monitor the air, sediment, and water at the site, and to issue the findings of the monitoring in the annual report.

I'd now like to introduce Mick Senus who will present the Lewiston-Porter School Property sampling.

# Lake Ontario Ordnance Works

Defense Environmental Restoration Program  
for Formerly Used Defense Sites

## Lewiston Porter School Property Sampling

Lewiston/Porter, New York  
June 23, 2010



US Army Corps of Engineers  
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**Lake Ontario  
Ordnance Works**  
Defense Environmental  
Restoration Program for  
Formerly Used Defense  
Sites (DERP-FUDS)

**Niagara Falls  
Storage Site**  
Formerly Utilized Sites  
Remedial Action Program  
(FUSRAP)



Thank you Jane.

Good Evening, my name is Mick Senus, I am the Project Manager for the former Lake Ontario Ordnance Works, as many of you know as the LOOW site. The Corps, working in conjunction with the Lewiston Porter School Board and their environmental consultant, Dr. Joe Gardella, has developed a sampling strategy, within the Corps authorities, to address concerns regarding any potential impacts from former activities of the Department of Defense, Manhattan Engineering District, and the Atomic Energy Commission on the school property. I am here this evening to present this strategy.

On this slide, the Lewiston Porter Schools campus is located within the undeveloped portion of the former LOOW. The green shaded area in this figure is the former LOOW site. The outline of the campus is shown on this figure along Creek Road. Niagara Falls Storage Site is located within the developed area of the former LOOW, and is shown here in the dashed line in the central portion of the map.

As you may know, the Corps is performing ongoing investigations for the LOOW site under the Defense Environmental Restoration Program (DERP) for Formerly Used Defense Sites (FUDS). The Corps investigations for the Niagara Falls Storage Site (NFSS) are performed under the Formerly Utilized Sites Remedial Action Program, (FUSRAP). In other words, FUDS investigates potential chemical impacts from former Department of Defense activities at LOOW and FUSRAP determines potential radiological impacts from former Manhattan Engineer District (MED) and the Atomic Energy Commission (AEC) activities at NFSS.

In August of 2009, the Corps and the Lewiston-Porter School Board met and discussed data gaps in previous sampling and analyses conducted at the school property. As a result, the Corps performed a data gap analysis and developed a proposed sampling strategy to address concerns regarding any potential impacts from Department of Defense, Manhattan Engineer District, and AEC activities on Lewiston-Porter School property.

# Lew-Port Investigation History

August 2009	Corps and Lewiston-Porter School Board meeting
February 2010	Strategy memo to Lewiston-Porter School Board
May 2010	Right Of Entry signed and site walk-over
June 2010	Presentation to Lewiston-Porter School Board



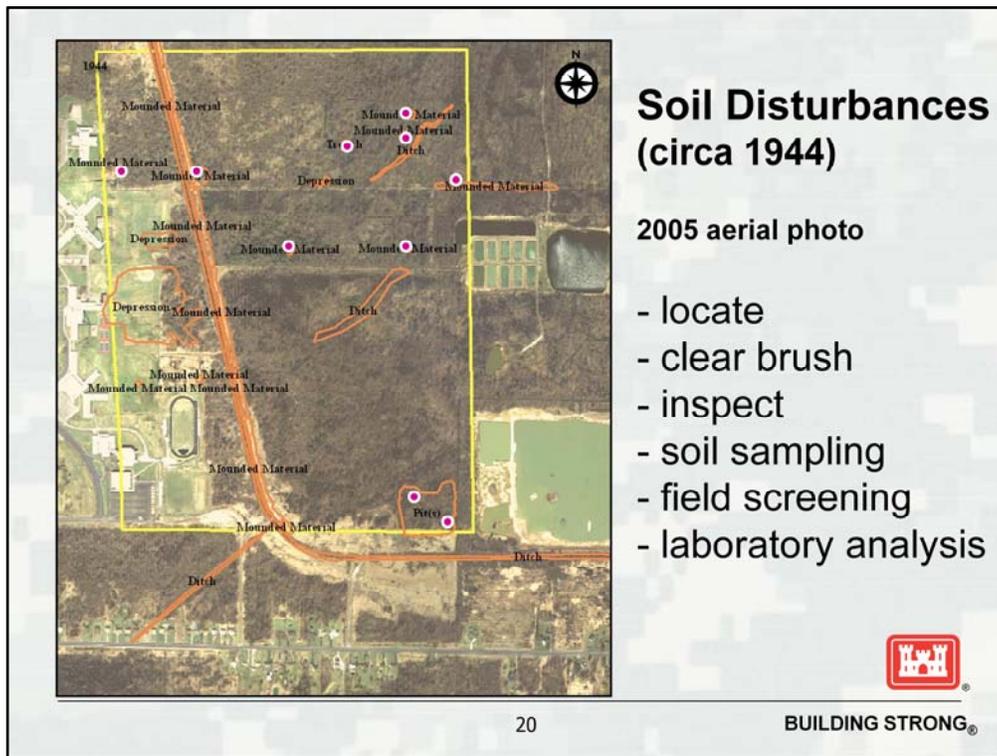
Due to funding constraints, the Corps has historically investigated LOOW in phases. Recently, the Corps developed the Management Action Plan which organizes and presents a summary of the Corps' strategy for completing and closing the LOOW site as parcel groups that meet the definition of FUDS under DoD DERP.

Now that the Management Action Plan is available, the Corps plans to close out environmental concerns with respect to past DoD activity by starting with sites with the least potential for environmental impact.

Historical sampling and results from previous investigations have identified the Lewiston-Porter School area as one of the least impacted sites. However, the Corps also acknowledges that the site is publically accessible, so a sampling effort will be conducted within the bounds of our authority under both DERP-FUDS and FUSRAP.

Upon completion of this sampling effort we will have collected sufficient data to conclude whether the school property has been impacted from past DoD activities.

The slide on the screen outlines recent history and our partnering efforts with Lewiston-Porter School.



The yellow border outlines the study area for Lewiston-Porter School property. The Lewiston-Porter campus building and Creek Road are located on the western portion of this map. The north arrow is in the top right corner of the map. The straight orange line that bisects the map from southeast to northwest is the Southwest Drainage Ditch as it flows into Four Mile Creek to the north.

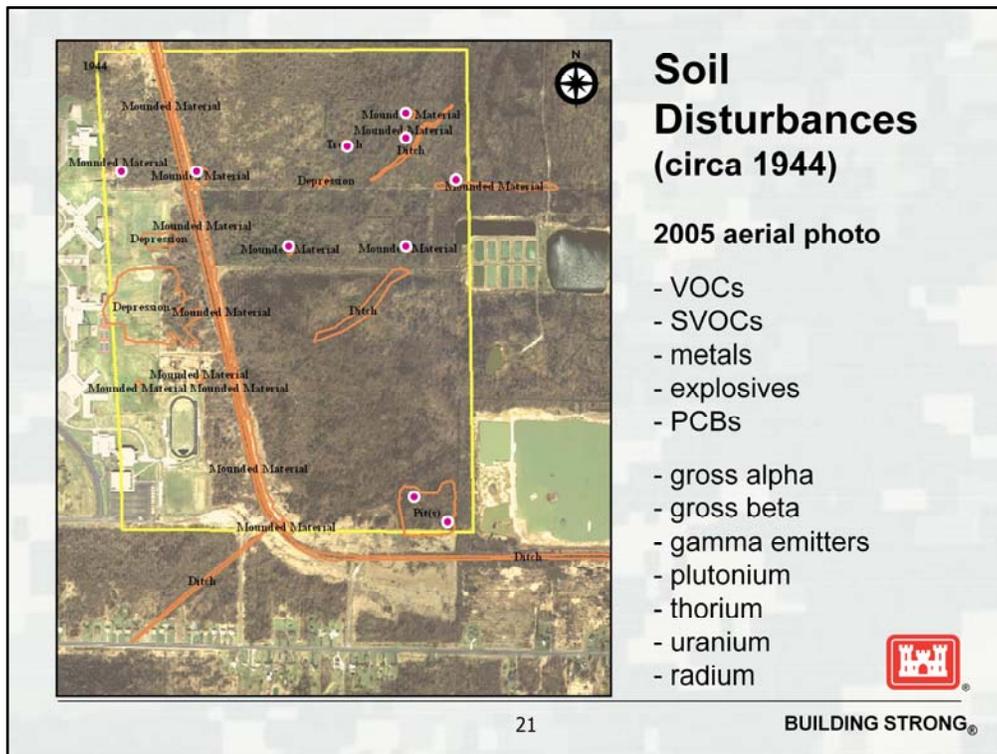
The first part of the sampling strategy involves investigating soil disturbances that occurred during the time that the DoD owned the school property, which was from 1942 until 1945. 1944 soil disturbances identified during a historical aerial photo analysis performed by the Corps are overlain in orange on this 2005 photo of school property. The features identified during the analysis include: ditches, depressions, mounded materials, trenches, and pits. Upon further analysis and within our authority, the Corps plans to investigate the soil disturbances on the undeveloped portion of the property that are the most suspicious. These locations are shown in RED on the figure and include mounded materials not adjacent to a ditch, the trenches, and the pits. Note that the Southwest Drainage Ditch will also be investigated, but I will discuss that later.

The Corps will use a global positioning system, or GPS, to locate each of the targeted disturbances. Next, brush will be cleared, as necessary, to provide access to the locations. The Corps intends to access the majority of locations via the Occidental property from the east and will clear the brush with mechanical equipment. Hand clearing will be performed when it is necessary to access a location from the campus. Once brush clearing is completed, the Corps will inspect each location in order to determine if the soil disturbance still exists, estimate the size of the feature, and determine if anything else in the immediate vicinity of the historical disturbance warrants investigation.

Depending on the size of the disturbance, one to four soil borings will be performed to a maximum depth of 10-feet below ground surface. The soil borings will be performed using direct push technology to obtain continuous soil samples. This equipment is mechanized and pushes the samplers through the subsurface. For locations accessed from the campus, soil borings will be performed by hand, utilizing augers, which drill through the subsurface.

All soil samples will be inspected for evidence of potential impacts including: staining, discoloration, and odors. The samples will be field screened with an organic vapor monitoring device that detects the presence of volatile organic compounds. Field test kits will be used to verify that explosives are not present. Finally, the samples will be screened with radiological field instruments for health and safety purposes.

Depending on the size of the soil disturbance, field observations, and screening results; one to four surface soil samples and one to four subsurface soil samples will be submitted for laboratory analysis for each disturbance location. Sample intervals will be biased towards potential impacts that have been observed or detected.



The laboratory analyses include volatile organic compounds, VOCs; semi-volatile organic compounds, SVOCs; metals; explosives; and polychlorinated biphenyls also know as PCBs.

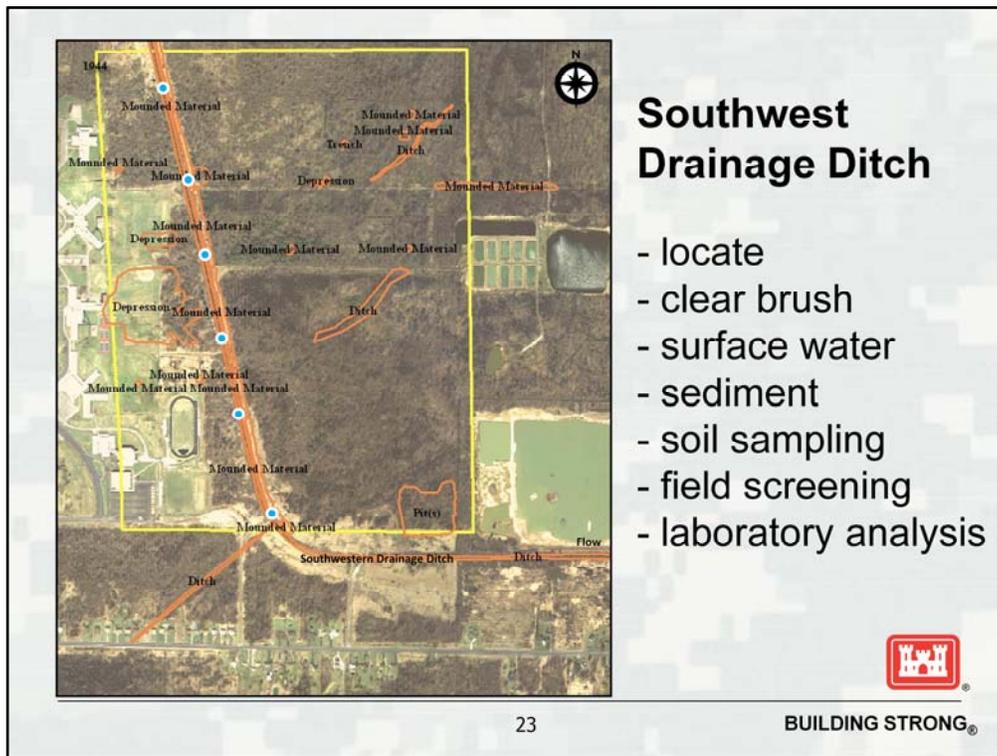
If radiological measurements exceed two times the established background concentration for a soil sample, that sample will be submitted for laboratory analysis of:

- gross alpha
- gross beta,
- gamma emitters,
- plutonium,
- thorium,
- uranium, and
- radium.

# Study area



These photos represent the terrain and land features of the study area as of last month - when we walked the sampling locations. The lower left photo is the near the 30-inch outfall where it bisects the Southwest Drainage Ditch. The photo in the upper right shows one of soil disturbances located under grouping of trees.

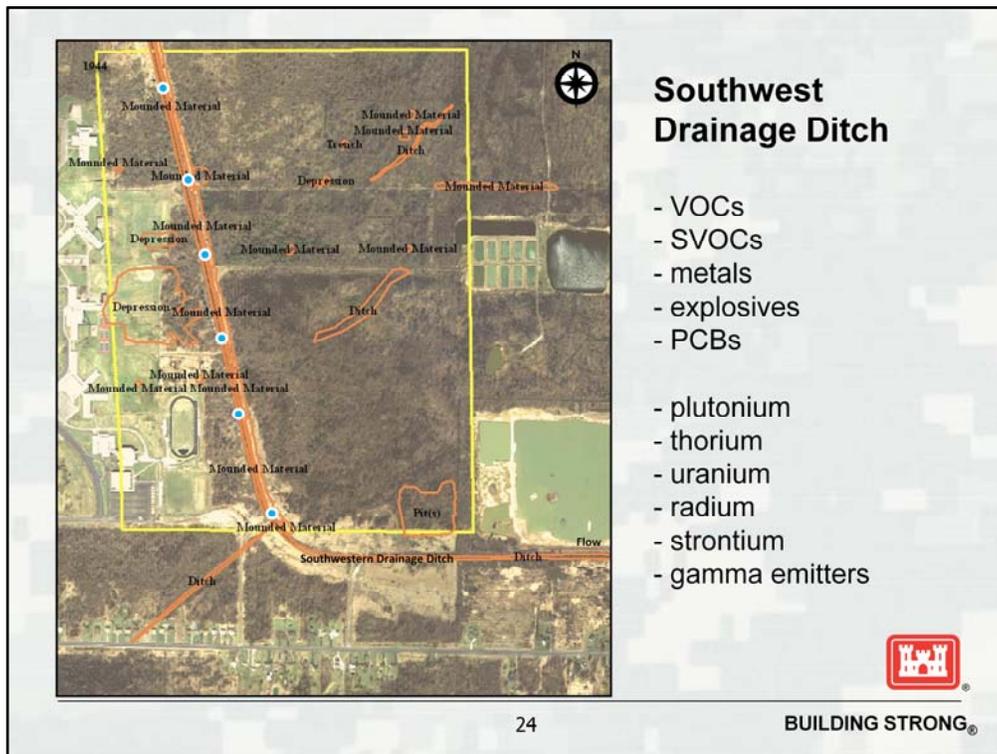


The second portion of the investigation focuses on the Southwest Drainage Ditch which flows through the campus from south to north. This ditch was constructed as part of the drainage system for the former LOOW. Six locations along the Southwest Drainage Ditch, shown on this figure in blue, will be investigated.

The Corps will clear brush mechanically along the east side of the ditch, as necessary, to provide access. For each location, a surface water sample will be collected using a pump. Additionally, a Shelby tube or hand auger will be driven manually into the center of the ditch for collection of sediment and subsurface soil to a maximum depth of four feet below ground surface.

The sediment and subsurface soil samples will be inspected for evidence of potential impacts including: staining, discoloration, and odors. The samples will be field screened with an organic vapor monitoring device that detects the presence of VOCs. Field test kits will be used to determine the presence of explosives. Finally, the samples will be screened with radiological field instruments.

The surface water and sediment from each location will be submitted for laboratory analysis.



The analyses at the Southwest Drainage Ditch will include: VOCs, SVOCs, metals, explosives, PCBs, plutonium, thorium, uranium, radium, strontium, and gamma emitters.

Based on field observations and field screening results one to two subsurface soil samples will be selected for lab analysis from each location. One sample interval will be submitted for chemical analysis and one for radiological analysis. Sample intervals will be biased towards potential impacts that have been observed or detected. It is possible that the soil interval selected for the chemical and radiological analysis will be the same.

# Sampling equipment



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On this slide you will see examples of some of the equipment the Corps will utilize to perform sampling on the Lewiston Porter School property. In the upper right-hand corner is an assortment of augers for the collection of soil and sediments by hand.

The other two pictures were taken during the Corps investigation of the former LOOW Wastewater Treatment Plant, performed last summer. A Geoprobe, which utilizes Direct Push Technology to collect surface and subsurface soils, is depicted in the lower left-hand corner. The lower right-hand picture depicts a soil core undergoing field screening tests.

## 2010 Lew-Port Schedule

June	work plans final
July	field work begins
August	data analysis
September	data validation
October	technical report

Website: [www.lrb.usace.army.mil/derpfuds/loow](http://www.lrb.usace.army.mil/derpfuds/loow)



This is the Lewiston-Porter study schedule for the remainder of this year. First, the Corps will prepare work plans which will be addendums to existing plans. The existing plans were developed for the investigation of the former LOOW Wastewater Treatment Plant and are currently available on the Buffalo District's website. The web address is shown on the slide. The work plan addendums are expected to be complete by the end of June and they will be posted to the same website.

The field work is scheduled to take place in late-July or August and data analysis and validation should be completed during September. A technical report will be prepared that will include all the field and laboratory results along with an explanation and discussion of results. That report, expected to be completed later in November, will also be posted electronically to the website for review.

## What's Next for LOOW

- Lew-Port School Sampling
- Occidental Feasibility Study Sampling
- Underground Storage Tank Closure Report
- Records Management Project
- Archive Search Report
- Phase IV RI Report



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In conjunction with the Lewiston-Porter School field effort, our contractor will be conducting supplemental sampling on Occidental property to determine the full extent of impacts.

Other updates on LOOW include the Underground Storage Tank removal from October 2008. This month we received the DEC Region 9 no further action memo regarding the post-excitation and geo-probe soil sample lab analysis results for the underground storage tank removal. The closure report and supplemental closure report will be posted on the web.

Also upcoming on LOOW is a records management project that will catalogue over 3,000 FUDS documents for LOOW, the final deliverable is expected in the spring of 2011.

For the OEA (Office of Economic Adjustment) safety project, the Town of Lewiston is currently getting cost estimates for their portion of the project.

For the Archive Search Report (ASR) , the Corps is reconciling the last of the comments made by the U.S. Army Corps of Engineers Center of Expertise. A final report is expected later this Fall.

And finally, the Phase IV RI is currently being reviewed by the Corps and is in the process of providing comments back to the contractor. This final Phase IV RI is expected at the end of this calendar year.

Thank you. I will now turn this meeting over to Paul Giardina from the US Environmental Protection Agency.