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FUSRAP

Formerly Utilized Site Remedial Action Program

Project Update

March 2005

Tonawanda Sites • Tonawanda New York

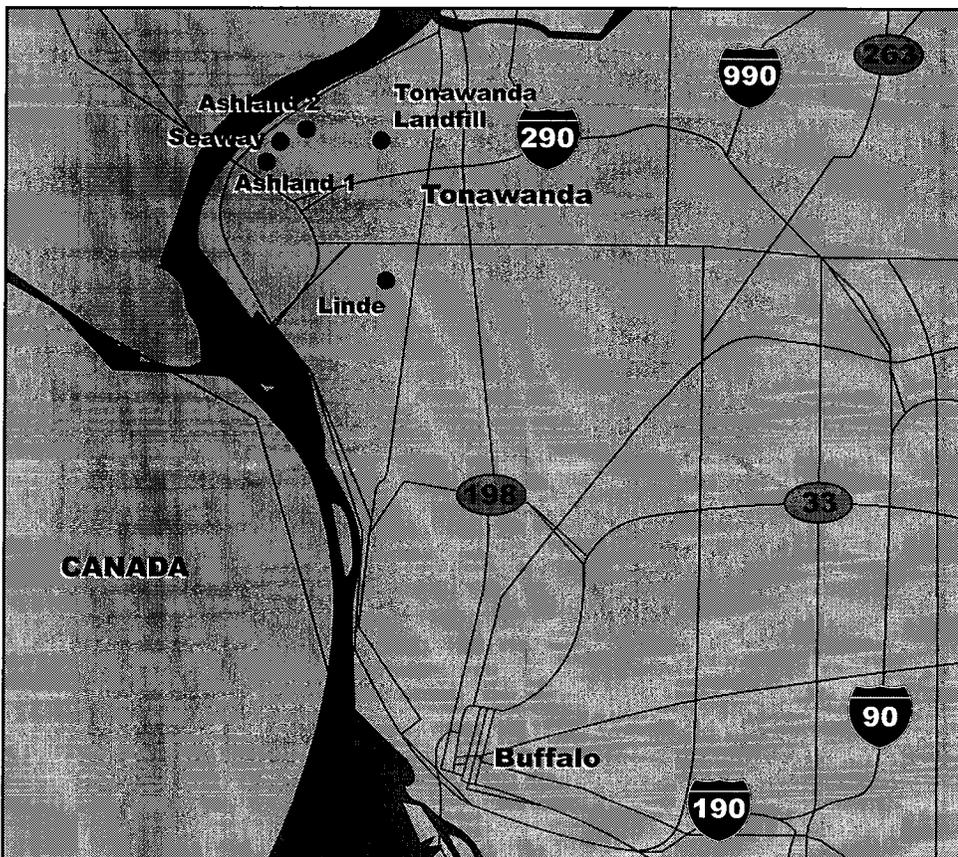
This is one in a series of fact sheets that provides information about regulatory, technical, and other issues related to the Formerly Utilized Sites Remedial Action Program (FUSRAP).

Since 1997, the U.S. Army Corps of Engineers, (the Corps) has been investigating six sites in Tonawanda as part of its Formerly Utilized Sites Remedial Action Program (FUSRAP). FUSRAP was first created in 1974 to identify, investigate and take appropriate cleanup action at sites with radioactive contamination resulting from the nation's early atomic weapons development program.

In October 1997, Congress transferred the management of this program from the Department of Energy (DOE) to the Corps. Through this program, the Corps addresses the environmental remediation of certain

sites once used by DOE's predecessor agencies, the Manhattan Engineer District and the Atomic Energy Commission. The waste at FUSRAP sites in Tonawanda consists mainly of low levels of uranium, thorium and radium, along with some mixed wastes. Cleanup primarily involves contaminated soil and building debris.

Upon completion of remedial activities, these sites are transferred to DOE for long-term stewardship activities.



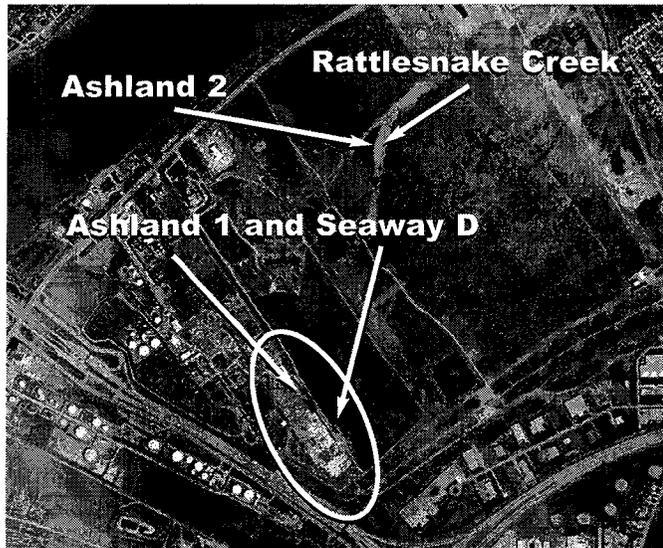
The 5 primary FUSRAP sites in Tonawanda are:

- The Ashland Sites (consisting of Ashland 1 & Seaway D, & Ashland 2 & Rattlesnake Creek)
- The Linde Site
- The Tonawanda Landfill & Mudflats Area
- The Seaway Landfill

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The Ashland Sites

Ashland 1, 2 and Seaway D



Ashland Sites

In 1998, the Corps signed a Record of Decision (ROD) for the environmental remediation (cleanup) of radiological contamination at the Ashland Sites in Tonawanda. The Ashland Sites consist of three discreet areas located within the industrial corridor along River Road in the Town of Tonawanda, just east of the Grand Island bridges and near the Seaway municipal landfill.

From 1944 to 1946, uranium processing wastes were transported from the former Linde Site to a 10-acre area known then as the Haist property (now called Ashland 1). These materials consisted of about 8,000 tons of low-grade uranium ore tailings. In 1960, the property was transferred to Ashland Oil for use in the company's oil refinery activities.

In 1974, Ashland Oil built two storage tanks on the property and moved excavated soil containing MED-related low-level radioactive residues and inorganic constituents to an area now known as Ashland 2 and Seaway Areas A, B and C.

The primary radioactive materials at the Ashland 1, 2 and Seaway Sites are uranium-238, radium-226, thorium-230, and their decay products. The Ashland Sites ROD calls for the excavation of soils exceeding the site-specific derived guideline of 40 picoCuries/gram thorium-230.

Ashland 2 Site - Complete

Remediation activities at the Ashland 2 Site were completed in 1999, with 52,250 tons of contaminated soil removed and disposed of out of state.

Ashland 1 and Seaway D - Complete

Remediation activities at the Ashland 1 & Seaway D Sites were completed in 2003, with 172,900 tons removed and disposed of out of state.

Rattlesnake Creek - Cleanup work begins March 2005

During cleanup of the Ashland 2 Site, the Corps discovered that the adjacent Rattlesnake Creek was also contaminated. The Rattlesnake Creek Site was added to the Ashland Sites ROD in 2004. The Corps tested for the contaminants of concern all the way downstream to the Niagara River, but found that the only area contaminated with radiological materials is the portion of Rattlesnake Creek between the Seaway Landfill and Two Mile Creek Road.

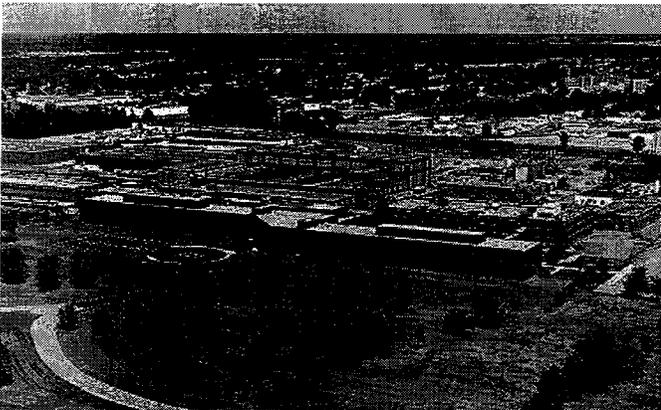
The Corps will begin work at Rattlesnake Creek this March and finish in late 2005.

The Linde Site

The former Linde Site is located in the Town of Tonawanda, just north of the city of Buffalo, New York. The 105-acre site was previously owned by the Linde Division of Union Carbide and was used to process uranium ores under contract with the Manhattan Engineering District between 1942 and 1946. That activity resulted in residual radiological contamination at portions of the property.

The current owner is Praxair Inc. (an industrial gases business). The Corporation uses its Tonawanda facility as its worldwide research and development facility. Adjacent properties include an elementary school, residential areas, a public park and golf course, railroad tracks, industrial and commercial businesses.

The Corps is managing cleanup of the radionuclides under the Formerly Utilized Sites Remedial Action Program (FUSRAP).



Linde (Praxair Site)

Linde Soils CleanUp Continues

The Corps issued a Record of Decision to clean up radiologically contaminated soils in March 2000. The selected remedy is fully protective of human health and the environment, complies with Federal and state requirements and meets community commitments. Principal radionuclides of concern are uranium, thorium, and radium.

Since 2000, six buildings and over 210,000 tons of contaminated material have been removed to permitted facilities outside of New York State.

Restoration activities began in April 2002 and will continue through completion.

Linde Building 14 Demolition Complete

In April 2003, the Corps issued a Record of Decision to remove Building 14. The Corps began a safe and methodical dismantling of the building in April 2004 and removal of debris is now complete.

Groundwater Investigation

The Corps has completed its groundwater investigations and released a Feasibility Study in October 2004. The Corps is now preparing a proposed plan and is scheduled to reach a Record of Decision in late 2005.

Ensuring Worker and Community Safety

The Corps environmental surveillance at the Linde Site includes continuous high volume air monitoring around the perimeter of the site (including one located on the roof of the Holmes Elementary School). The Corps will continue air monitoring through the conclusion of remedial activities at the Linde Site.

Tonawanda Landfill and Mudflats Area

The Tonawanda Landfill and Mudflats Area (also called the Tonawanda Landfill Vicinity Property) consist of approximately 170 acres in the Town of Tonawanda, New York. Adjacent properties include a residential area within the city of Tonawanda, a railroad spur line, a Niagara Mohawk Power Corporation utility corridor, Interstate 290, and a former municipal incinerator that is no longer in use and has since been demolished.



Tonawanda Landfill and Mudflats Area

No historical records have been found to show that either Tonawanda Landfill or the Mudflats Area were part of the nation's early atomic weapons program, or that there is any connection between trace amounts of radioactive material found in the landfill to the Manhattan Engineer District (MED) or Atomic Energy Commission (AEC) activities. Records show that the landfill was primarily used by the Town of Tonawanda to dispose of construction and demolition material, leaves, incinerator ash, and municipal waste. Waste disposal began at the Tonawanda Landfill during the 1930s and continued through 1989.

However, in 1991 the DOE conducted a radiological survey of the properties, because of their proximity to the Linde FUSRAP Site. The DOE discovered that small portions of the Tonawanda Landfill and Mudflats Area properties contained material similar to material found at other FUSRAP sites. To ensure a more complete investigation would occur, the DOE designated the two properties together as a "Vicinity Property" of the former Linde Site, ensuring the properties would be further investigated under FUSRAP.

In the summer of 2001, the Corps began a more detailed sampling effort at both the landfill and Mudflats Area sites to gather more information about site conditions and the nature of the materials present. The Corps Buffalo Team collected hundreds of samples from soil, surface water, and groundwater, and tested those samples for uranium, thorium and radium.

The sampling results from that effort, as well as results from past DOE efforts, have enabled the Corps investigative team to complete their Remedial Investigation (RI) of the site. As part of the Remedial Investigation, the Corps conducted a baseline risk analysis, to evaluate potential risks associated with the contamination for different users over a thousand-year period, under current and potential future land uses.

Next Steps for Tonawanda Landfill and Mudflats Area

The Corps has completed its investigative work at both the Tonawanda Landfill and the Mudflats area, and is now working to finalize the resulting Remedial Investigation Report, and is pleased to report that current risks for the Tonawanda Landfill are below USEPA guidelines, and that future risks after the Town of Tonawanda caps and closes the landfill as planned, will be well below USEPA guidelines. In the Mudflats Area, the Corps has confirmed that risks for the current and potential future site uses are also well below USEPA guidelines.

The Corps is now working to finalize the resulting Remedial Investigation Report and evaluating what the necessary steps will be to officially close out this site.

The Corps hopes to hold a public information session for the Tonawanda Landfill and Mudflats sites by this summer.

Seaway

The Seaway Site is located along River Road in Tonawanda, New York in the industrial area near River Road. Between 1930 and 1995 Browning Ferris Industries operated a landfill at the site that accepted a variety of municipal, commercial, construction, and industrial wastes. The area comprises about 100 acres and is called the Seaway Industrial Park. The current owner of the site is the Sands Mobile Park Corporation.

The Manhattan Engineer District (MED), a predecessor of the U.S. Department of Energy, hired the former Linde Air Products Division of Union Carbide to process uranium from 1942 to 1946. Residues from uranium processing were transported from the Linde Site to the Ashland 1 Site and Seaway Area D. This material was later relocated to the Seaway Areas A, B, C, and the Ashland 2 Sites. Approximately 6,000 cubic yards of low-grade uranium ore tailings were disposed of on Seaway Areas A, B, and C in 1974.

- Area A is an 11-acre area. It is estimated that 40 percent of Area A is covered by a layer of fill material and refuse up to 10 feet thick.
- Areas B and C combined are approximately 4 acres. It is estimated that Areas B and C have been covered with up to 40 feet of fill material and refuse.
- Area D has already been remediated and was completed along with the Ashland 1 Site in May 2003. The cleanup guidelines for Area D were determined under the Record of Decision for Ashland 1, Ashland 2, and Seaway Area D that was signed in April 1998. 173,000 tons of contaminated soil were excavated from the Ashland 1 and Seaway D Sites and shipped out of state and disposed of at a licensed waste management facility.

The Corps is working to better define the amount and location of contamination in Seaway Site Areas A, B, and C. The Corps performed drilling operations to obtain core samples from portions of the landfill where MED material was placed. These samples are being used to better define the depth of the contaminated areas, as well as the nature of the contamination. Additional sampling also has been performed to confirm that groundwater is not contaminated.



Seaway Landfill

The Corps is currently working to collect and summarize results from these studies in a report. This report is referred to as the Feasibility Study Addendum, because the DOE prepared a Feasibility Study in 1993 for all of the Tonawanda Sites (which were defined together at that time to include the Seaway Site, the Linde Site, the Ashland 1 Site, and the Ashland 2 Site). The Corps Addendum to the 1993 Feasibility Study report will describe not only the earlier investigations by DOE at the Seaway Landfill, but the Corps more recent investigations at Seaway. The report will identify the Contaminants of Concern (COCs), remedial action objectives (RAOs) and applicable or relevant and appropriate requirements (ARARs) for potential remedial actions at Seaway. Furthermore, it will identify and describe the remedial alternatives being considered for Seaway. This will be accompanied by a comparative evaluation of the potential remedial options for Seaway in terms of CERCLA evaluation criteria.

The Corps hopes to have a public information meeting for its work at the Seaway Site later this summer.