



US Army Corps
of Engineers
Buffalo District

Town of Tonawanda Landfill and Mudflats Area

*Vicinity Property of the
Linde FUSRAP Site*

June 30, 2000



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Tonawanda Landfill and Mudflats Area

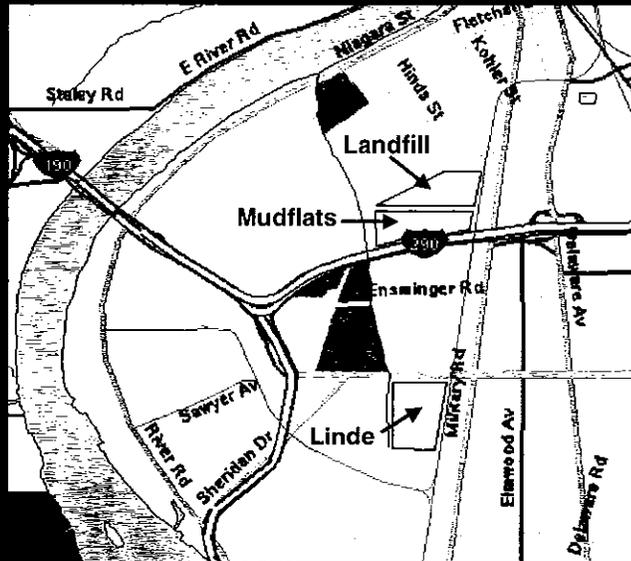
Purpose of Briefing

- Site History
- FUSRAP Schedule
- Issues



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- Location of Tonawanda Landfill and Mudflats Area with respect to the Linde Site.

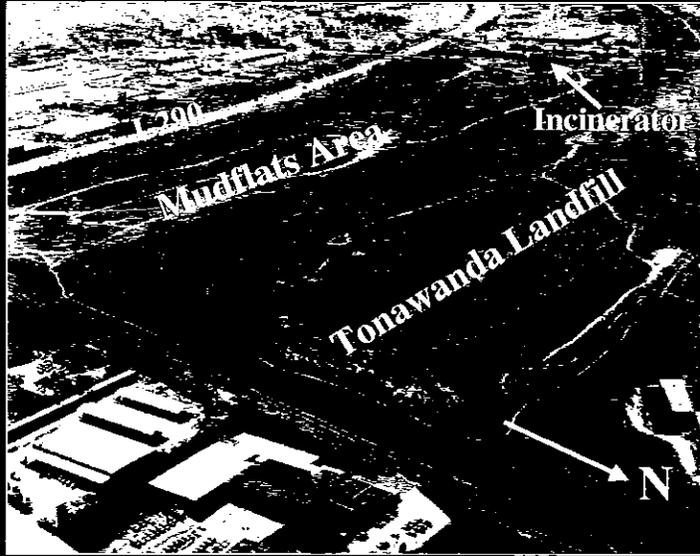
- Boundaries

- North - Residential - City of Tonawanda
- South - Interstate 290
- West - East Park Drive
- East - Conrail Line
- Divided by Niagara Mohawk Right-of-Way



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- Aerial photo of the Tonawanda Landfill and Mudflats Area.
- Size
 - Landfill - 55 acres
 - Mudflats - 115 acres



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Site History

- 1930s - 1989 - Landfill accepted municipal waste, incinerator ash, and sludge. Mudflats Area was vacant except for incinerator. (Town)
- May 1984 - Aerial survey conducted for Am-241, which was detected in Landfill. Slightly elevated radioactivity also detected in Mudflats Area. (NYSDOH)
- Feb. 1988 - Radiological characterization of Landfill for Am-241 completed. (Town)
- Apr. 1989 - Town receives approval from NYSDOH to close Landfill with Am-241 in place. (Town)

•Landfill

- Primary waste stream was incinerator ash from Town's incinerators.
- When incinerators were not operating, material went straight to the landfill.

•Mudflats Area

- Undeveloped property owned by Town of Tonawanda.
- Incinerator burned sewage treatment plant sludge from Town's wastewater treatment plant.

•Am-241 Contamination

- Am-241 is transuranic radionuclide similar to plutonium
- Alpha and gamma emitter
- Area = 81,000 sq ft, Depth = 7 ft
- Surface Soil Max = 157 pCi/g Avg. = 31 pCi/g
- Subsurface Soil Max = 544 pCi/g Avg. = 97 pCi/g
- Conc. limit for uncontrolled release = 30 pCi/g



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Site History (continued)

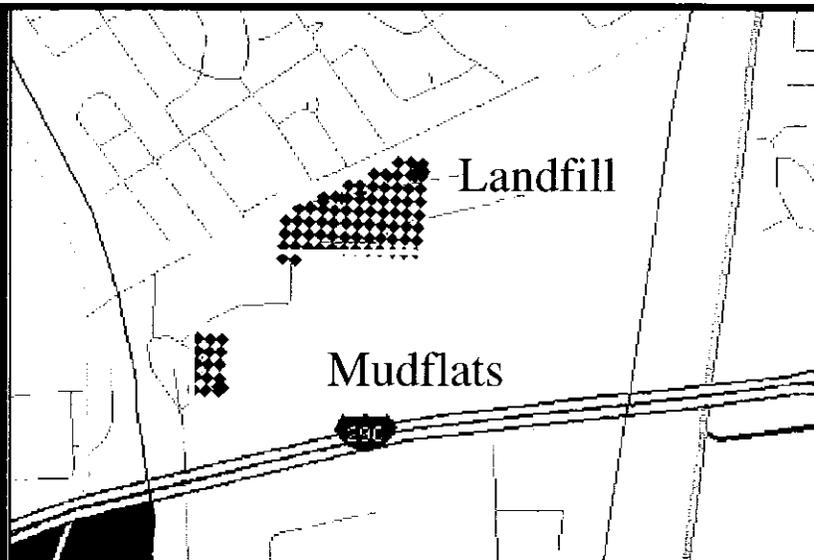
- Apr. 1990 - Mobile gamma scan of areas surrounding Linde FUSRAP Site. Spot with elevated Ra-226 and U-238 in Mudflats Area. (DOE)
- Sep. 1991 - Radiological survey of Landfill and Mudflats Area. Small areas of contamination found in both. (DOE)
- Dec. 1992 - Designated as Vicinity Property of Linde FUSRAP Site. Restricted to areas containing radioactive materials from activities of DOE's predecessors. (DOE)
- Nov. 1994 - Additional sampling in Landfill and Mudflats Area. (DOE)

- Contamination "similar to the residue or byproduct of the refinery operation conducted at the Linde Plant."
- Currently unknown how contamination ended up in the Landfill and Mudflats
 - No records indicating how it got there
 - Theory 1 - Wastewater from Linde activities discharged to Two Mile Creek - Two Mile Creek dredged at some point (by Town?) - Dredged material deposited in Landfill
 - Theory 2 - Wastewater from Linde activities discharged to sewer system - Radionuclides settled out in sludge at WWTP - Sludge incinerated and placed in Landfill



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- Figure roughly depicts DOE sampling with respect to entire Landfill and Mudflats properties.

- Red sample points had radionuclide concentrations above guidelines.

- Landfill:

•Ra-226	Max = 2,000 pCi/g	Avg. = 128 pCi/g
•Th-230	Max = 4,300 pCi/g	Avg. = 232 pCi/g
•U-238	Max = 1,800 pCi/g	Avg. = 127 pCi/g

- Mudflats:

•Ra-226	Max = 120 pCi/g	Avg. = 8.21 pCi/g
•Th-230	Max = 600 pCi/g	Avg. = 26.8 pCi/g
•U-238	Max = 78 pCi/g	Avg. = 9.38 pCi/g



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Site History (continued)

- Feb. 1999 - Radiological Human Health Assessment completed. Current doses are 10 mrem/yr for Landfill and 2.9 mrem/yr for Mudflats. CERCLA risk is 5.4×10^{-5} for Landfill and 1.5×10^{-5} for Mudflats. (USACE)
- June 1999 - Preliminary closure proposal to cap FUSRAP material in Landfill submitted to NYSDEC. NYSDEC expresses concern over plan. (Town)
- Sep. 1999 - CANiT and NYSDEC briefed on site status. Town of Tonawanda requests that USACE take lead in addressing FUSRAP materials.



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FUSRAP Schedule

- Award Contract** - March 2000
- Cost reimbursable contract awarded to SAIC to conduct Remedial Investigation / Feasibility Study.
- TPP Meeting** - March 2000
- Attended by representatives from USACE, NYSDEC, USEPA, Town of Tonawanda, and SAIC.
 - NYSDEC requested additional investigation of Tonawanda Landfill and Mudflats Area.
- Project Work Plan** - August 2000
- Describes overall conduct of the RI/FS.



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FUSRAP Schedule (continued)

Community Assessment - September 2000

- Assesses community's information and involvement needs during RI/FS.

Field Work Plans - January 2001

- Details sampling that will be conducted at site.

Field Work - March 2001

- Extent not defined yet, but will probably include gamma walkovers, soil borings, and possibly groundwater sampling.
- All samples will be analyzed for radionuclides. Some samples will be analyzed for disposal characteristics.



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FUSRAP Schedule (continued)

RI/FS Report - August 2001
– Evaluates sampling data and develops remedial action alternatives.

Proposed Plan * - January 2002
– Proposes preferred remedial action alternative for public review.

Record of Decision * - July 2002
– Final decision document identifying selected remedial alternative.

* Probably separate actions for Landfill and Mudflats if they are split into two operable units.



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Issues

- Americium-241
- Potentially Responsible Party Investigation
- USACE Sampling May Identify Additional Contaminants
- Community Relations/Stakeholder Relations
- Delay in Town's Plans