

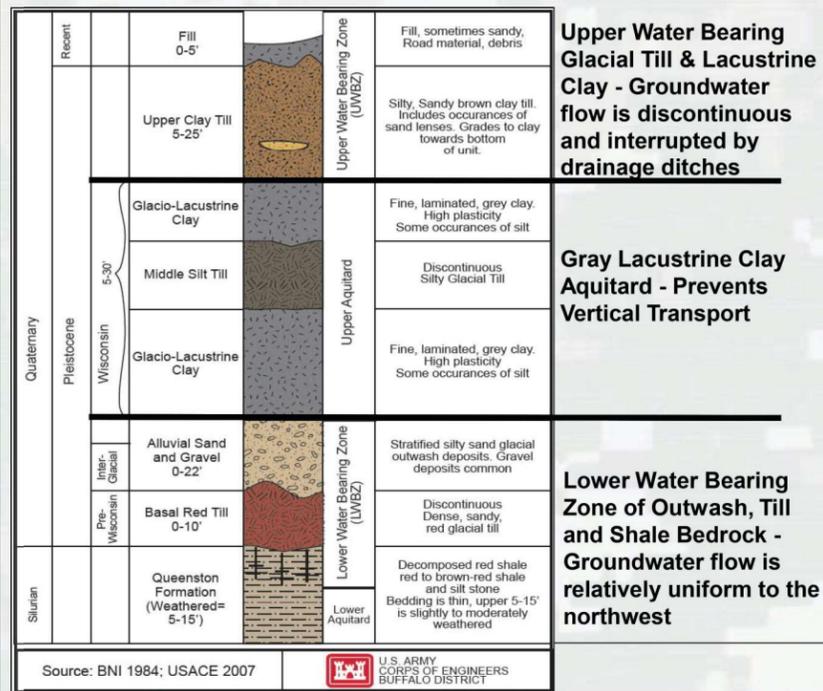


US Army Corps of Engineers®
Buffalo District

Niagara Falls Storage Site Balance of Plant and Groundwater Operable Units

Groundwater Operable Unit

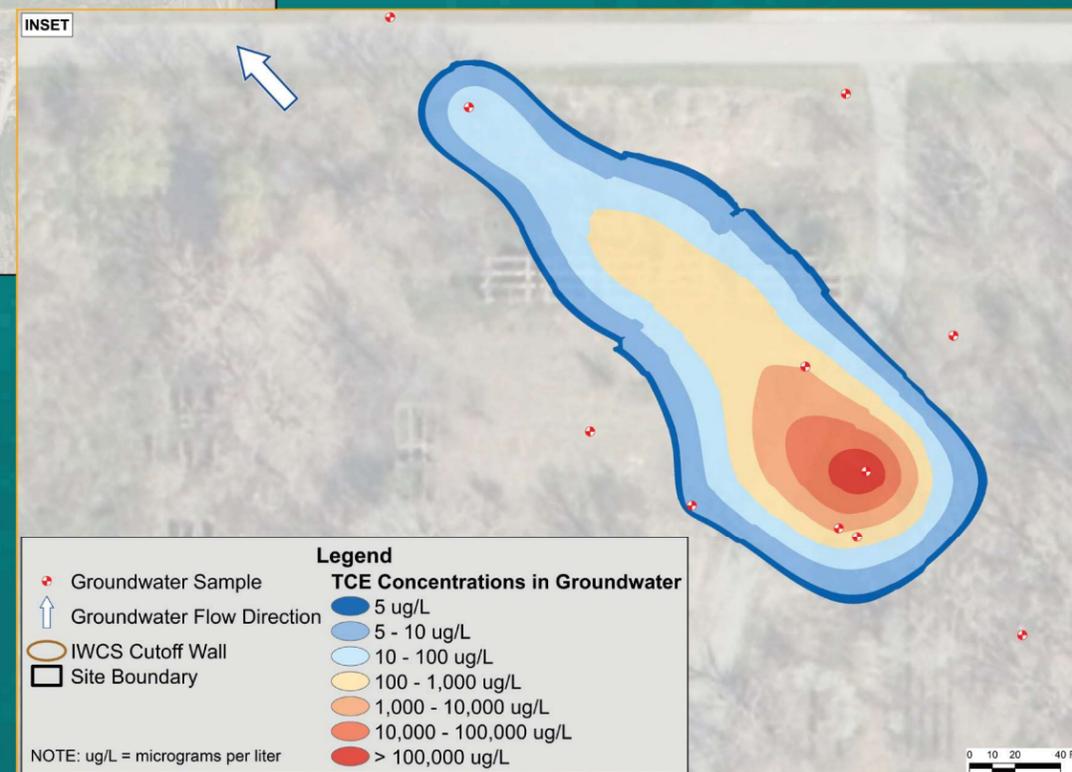
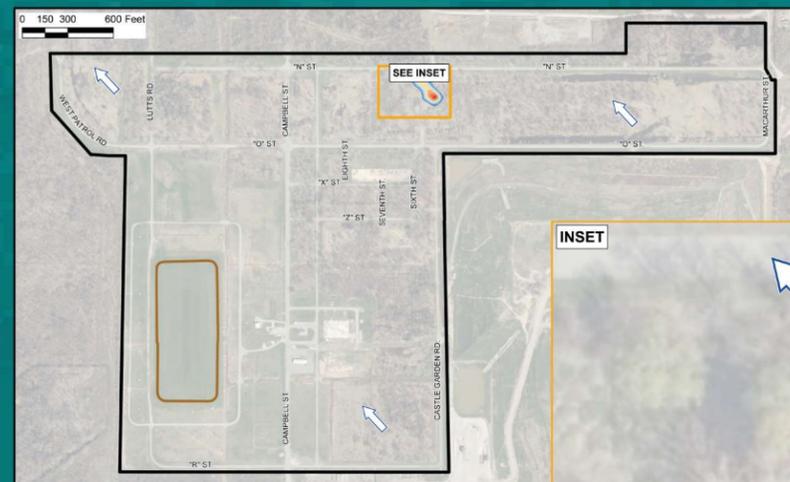
NFSS Hydrostratigraphy



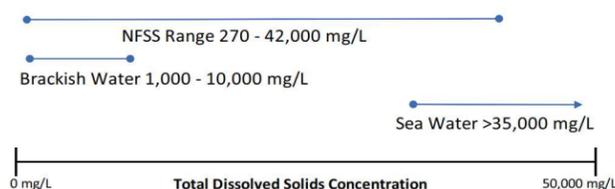
Upper Water Bearing Glacial Till & Lacustrine Clay - Groundwater flow is discontinuous and interrupted by drainage ditches

Gray Lacustrine Clay Aquitard - Prevents Vertical Transport

Lower Water Bearing Zone of Outwash, Till and Shale Bedrock - Groundwater flow is relatively uniform to the northwest



Total Dissolved Solids in Water



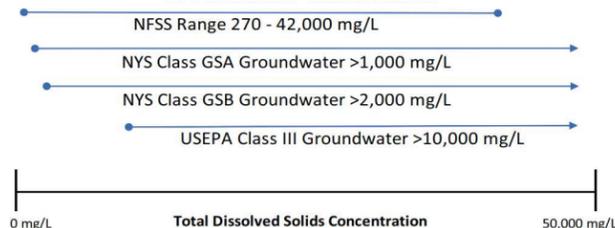
NFSS Groundwater Classification

Low permeability and shallow gradients minimize groundwater flow velocities resulting in high concentrations of total dissolved solids leached from the glacial sediments.

The naturally high concentration of salts produce a New York State GSA to GSB-classified saline water and an Environmental Protection Agency Class III water.

This naturally poor groundwater is replaced by nearby high-quality potable surface water sources in Niagara County (e.g., Niagara River and Lake Ontario).

Groundwater Classification



Groundwater Contamination

Groundwater samples collected quarterly to semi-annually at the NFSS since 1979 reflect historical site contamination derived from the Manhattan Engineer District/Atomic Energy Commission Activities.

The only constituents of concern for groundwater at the NFSS are volatile organic compounds (VOCs) that pose a risk to the construction worker due to incidental ingestion, contact, and inhalation of vapors.

The estimated volume of soil with VOC contamination is 3,300 cubic yards that is expected to yield about 3,300 gallons of impacted groundwater via gravity drainage. The groundwater volume is not significant since the contaminated soils are clayey and do not yield appreciable water.

While uranium contamination is present, it occurs at levels that do not pose a risk to the construction worker. Appendix A of the Feasibility Study includes a groundwater and surface water interaction analysis that shows that residual uranium in site groundwater will not degrade surface-water quality.