

An aerial photograph showing a large body of water, Cayuga Lake, with a salt mine facility visible on the shoreline. The facility includes several large, rectangular, light-colored storage piles and a dark, rectangular structure. The surrounding landscape is a mix of bare trees and green fields. The sky is overcast.

Risks of Salt Mining to Cayuga Lake & Shoreline Communities

24 August 2025 talk to WSNA

By

John V. Dennis

What is CLEAN?

- CLEAN = Cayuga Lake Environmental Action Now
- citizens' advocacy group
- Formed in 2017
- One part-time employee: Stephanie Redmond
- Hire experts: geologist, hydrogeologist, environmental attorney
- Depend on donations-😊 CLEANCayugaLake.org
- Depend on people speaking up
- Steering Committee

Some news

- DEC issued Cargill new 5-year mining permit allowing S3 flooding
- 2030-2032: salt reserves at north end of the mine exhausted?
- Cargill already seeking to extend permitted reserves northward?
- Increasing secrecy: 2023 & 2024 mine maps

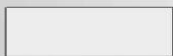
MYERS
POINT



Town of Ulysses boundary



S3 mine section, Level 6



Already mined, Level 6



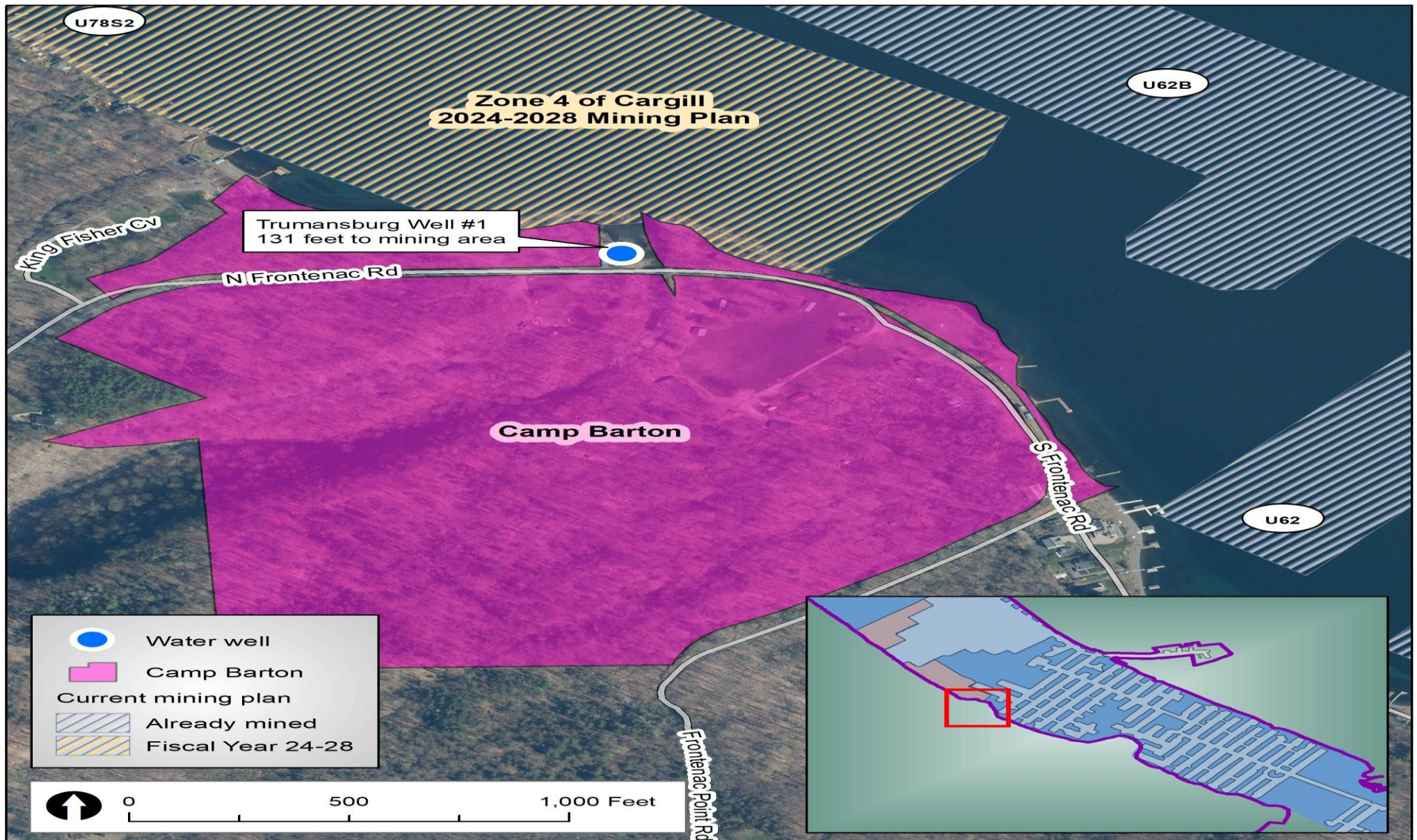
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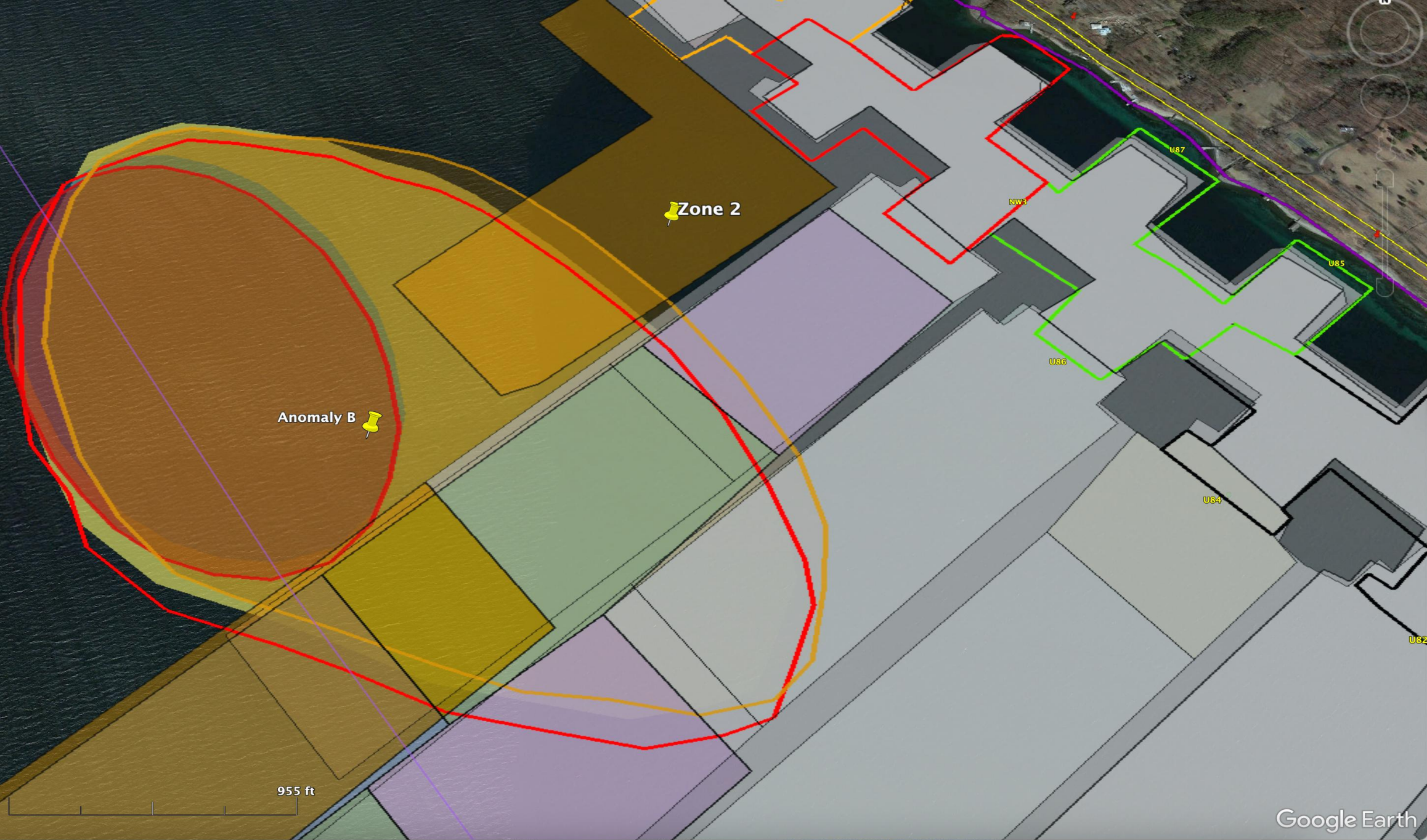
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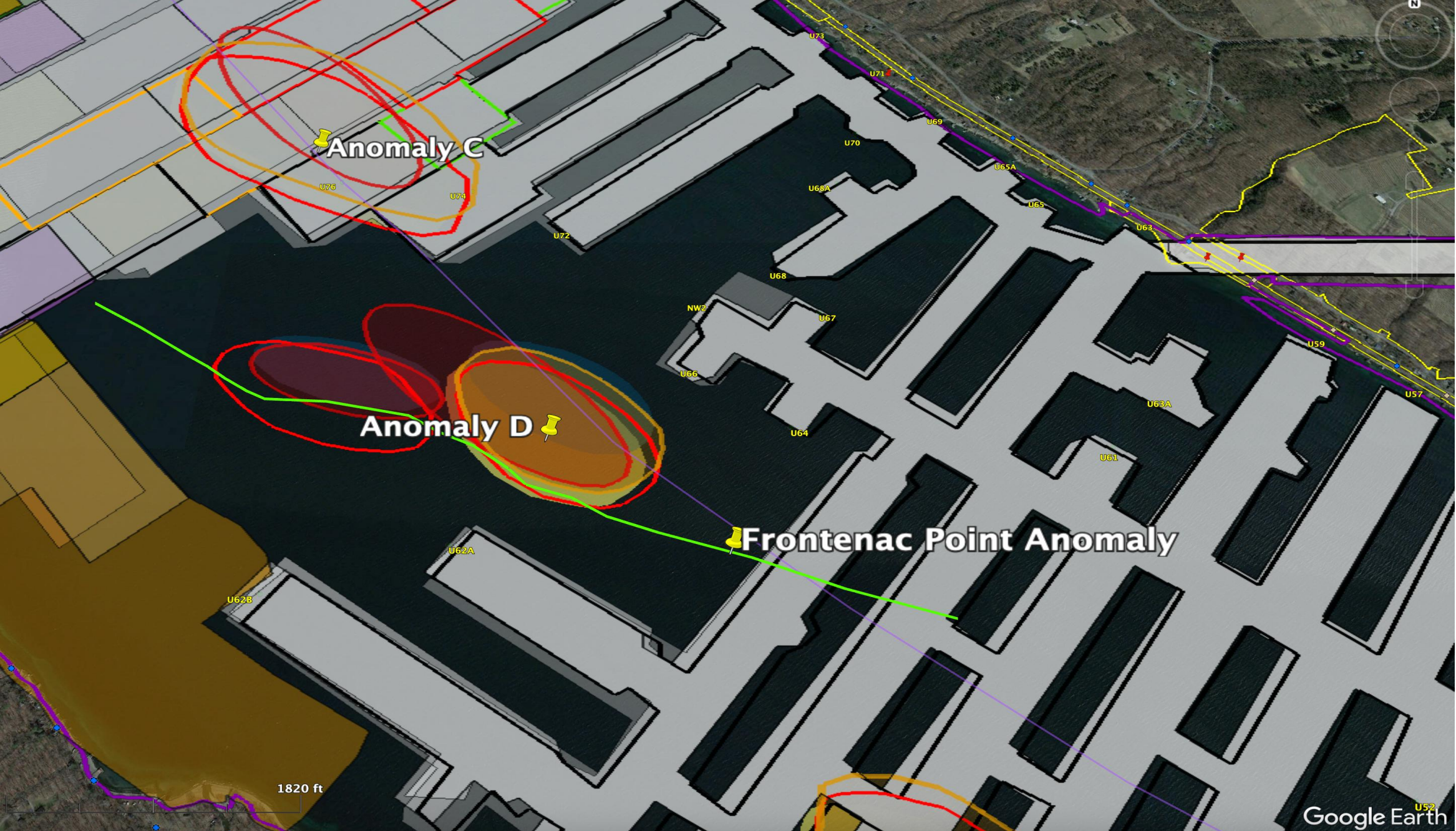
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Miles

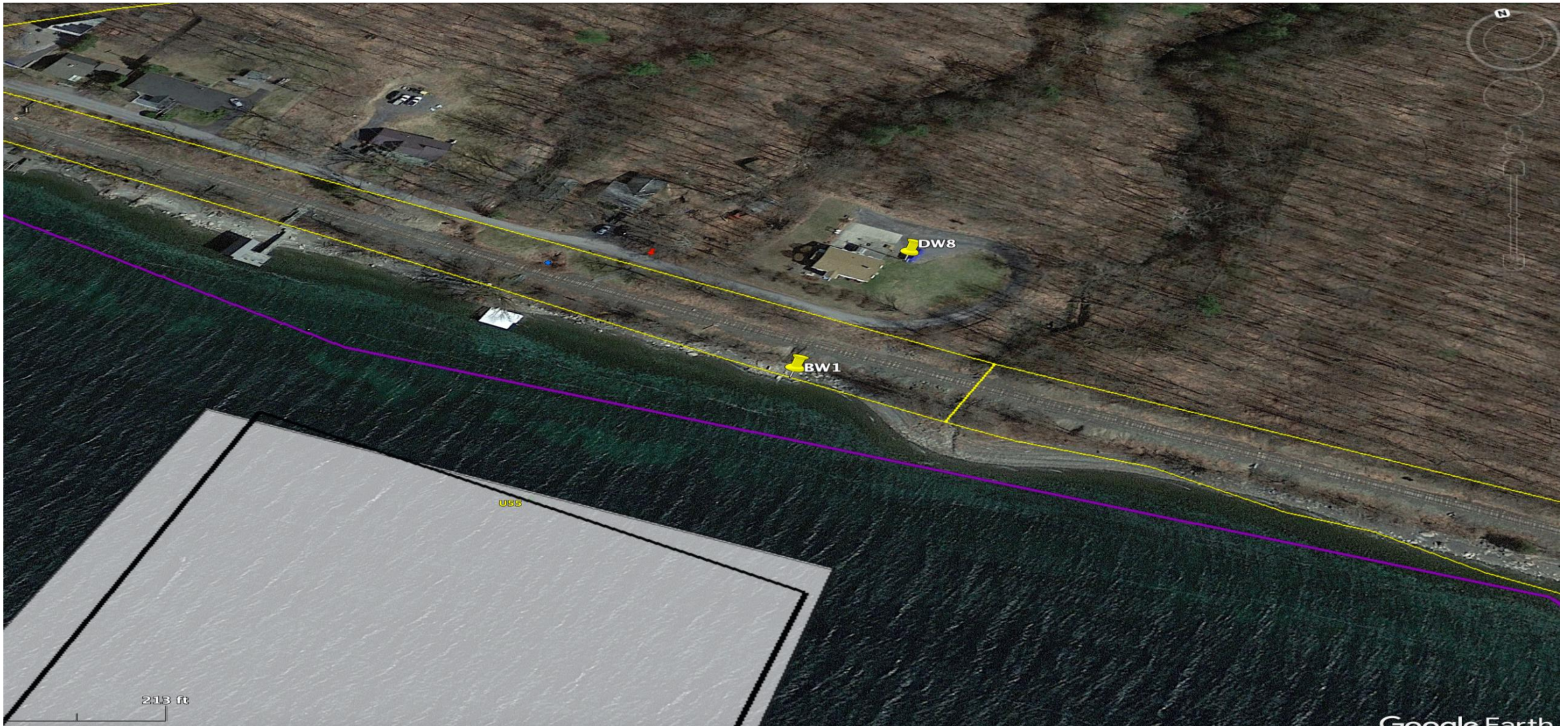








Beach Well @s. end of Bill George Road:
salinized after Cargill mined U55?



Cayuga Salt Mine vs Hampton Corners Salt Mine

descriptor	Cargill Cayuga Salt Mine	ARS Hampton Corners Salt Mine
Parent corporation gross revenues	\$177B in fiscal 2023	\$40M in 2022
Annual production	≈2.4 million tons	≈4.3 million tons
Number of employees	≈165	≈400 w trucking
Is workforce unionized?	No	Yes
Geologists on Staff	0	2
Mining under a lake	Yes	No
Water intrusion problems	Possibly at U12	No
Rate of water inflow	About 34 GPM	About 4 GPM
Environmental Impact Statements	0 over 54 years	2 in 25 years
No. of fatalities	6	0
Disposal of shaft leakage waters in the mine	Yes	No
Extraction ratio	43%	60%

Environmental harm to drinking water

- This harm already exists: Bolton Point 2024 report: sodium 33 mg/L
- EPA's guidance for people on very low sodium diets: 20 mg/L
- Road salt loading of the lake could be reduced 30% by using brine for deicing
- Bill George Rd brine seep: one of many?

Q& A

Some Chronology

- 1970. Cargill buys rights to mine salt under Cayuga Lake from Cayuga Rock Salt.
- 1974-76. Himrod Salt Mine failure/closure; 2 fatalities (\approx 18 miles from CSM)
- 1980. Lake Peigneur drains into the Diamond Crystal Salt Mine, Louisiana
- 1986. Solvay Process Co. closes Tully Valley Brine operations (\approx 25 miles from CSM)
- 1994. Akzo Nobel's Retsof mine collapses and floods (\approx 65 miles from CSM).
- 2022. Cargill closes & begins flooding the Avery Island Salt Mine
- February 2023. Cargill begins flooding the S3 without a permit modification or EIS
- July 2023 Cargill hires Deutsche Bank to sell Cayuga Salt Mine
- 2023-25 CLEAN asks DEC, OGS, & Gov Hochul for mine closure & \$10B bond.
- 2025.08.14 DEC extends Cargill mining permit for 5 years allowing S3 flooding

Tully Valley mud boil in 2005

brine has continued to flow to the surface 40 years after mining ended



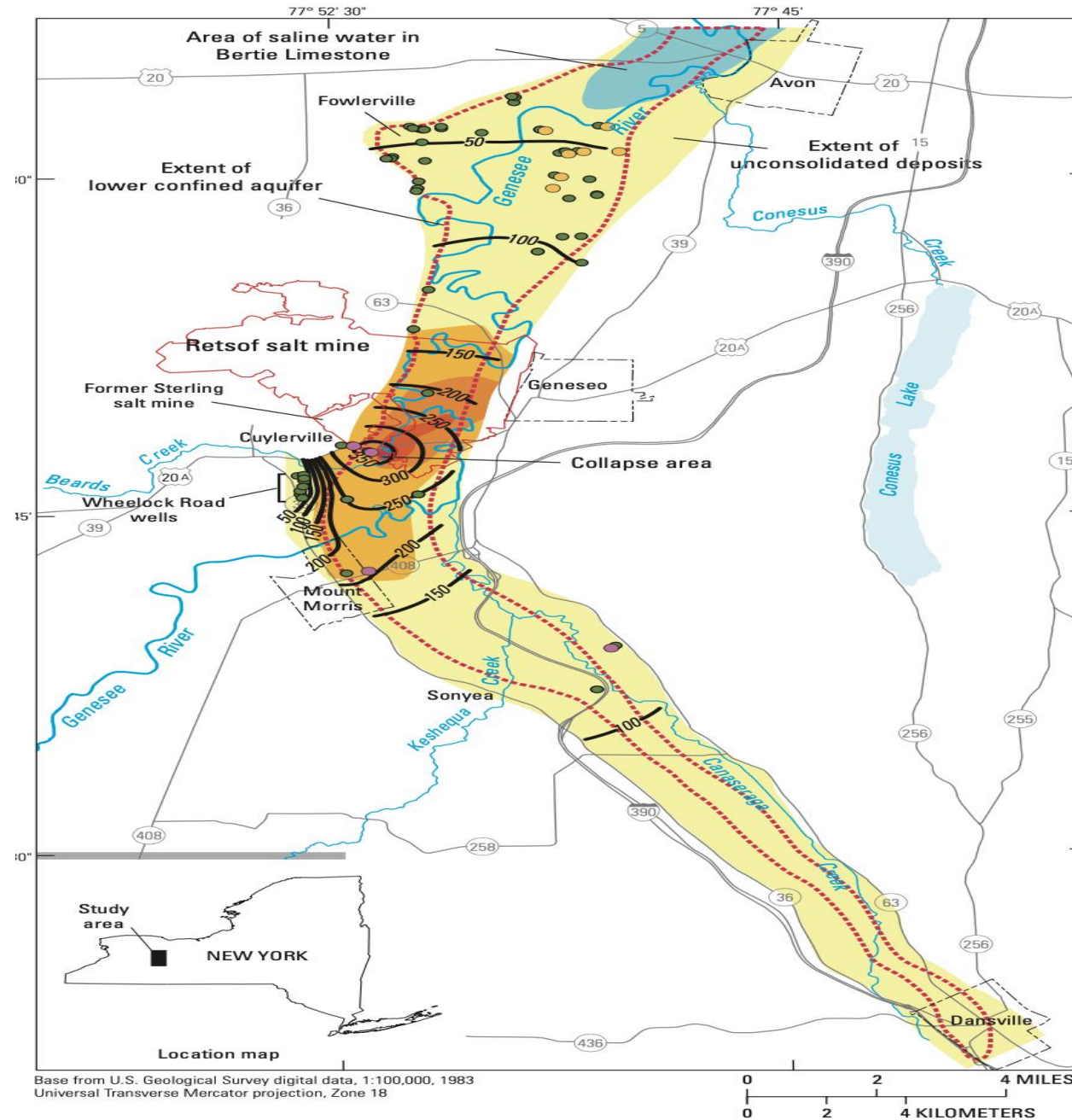


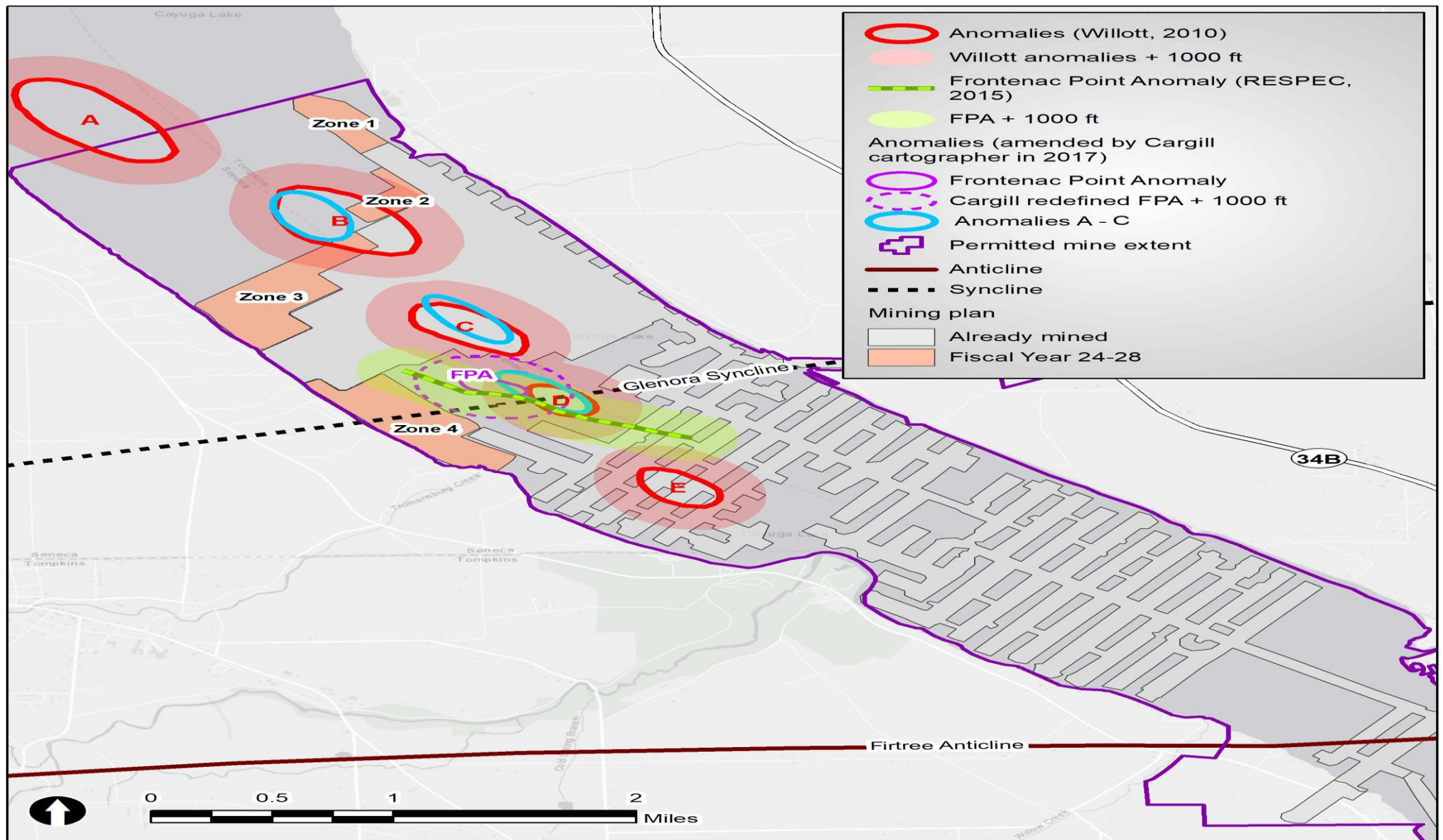
Lake Peigneur Disaster, 1980

Down the hole:

- 65 acres of botanic garden
- Two drilling platforms
- 11 barges
- A tugboat
- Some houses
- A loading dock

Environmental Consequences of the Retsof Salt Mine Roof Collapse





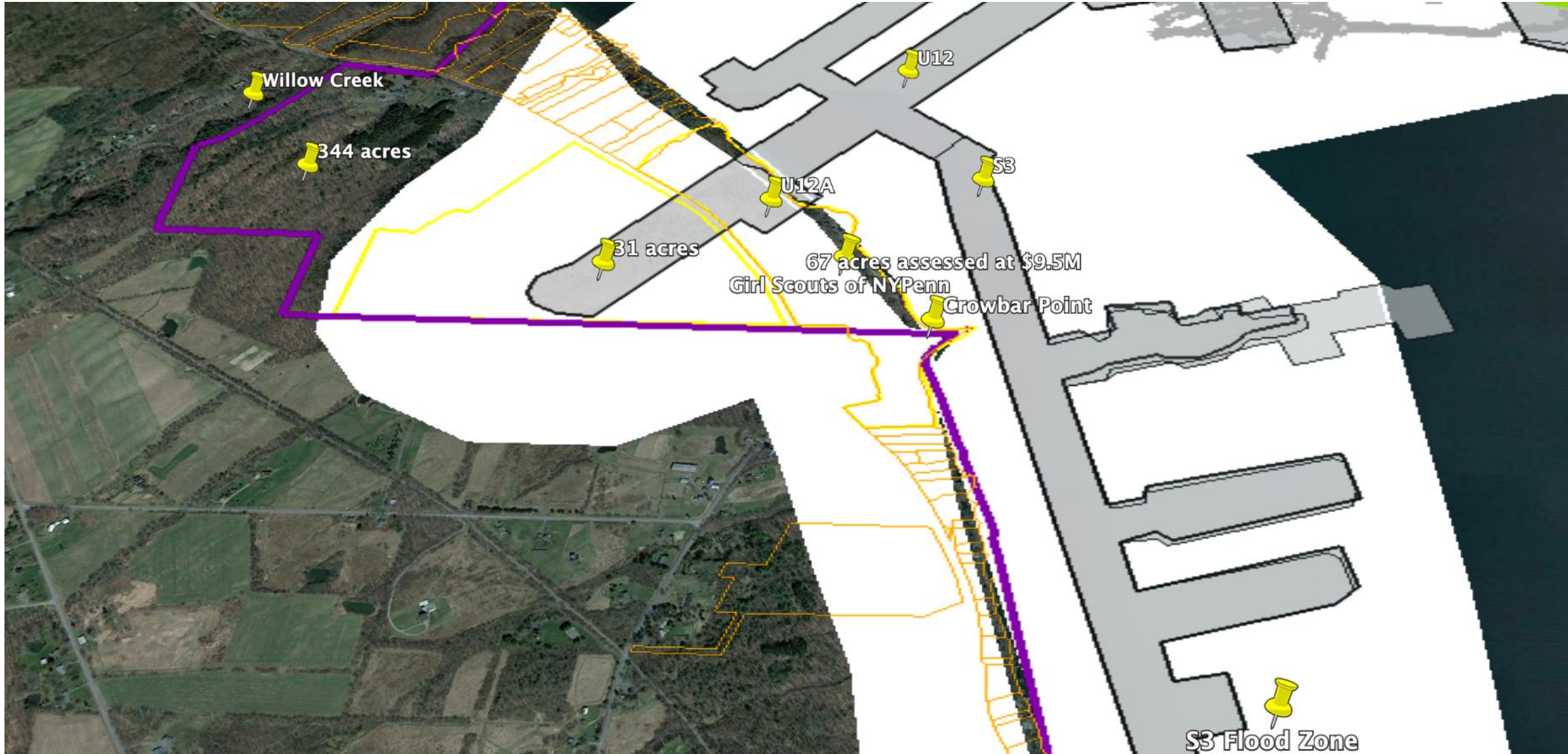
What is an EIS? When is one needed?

- EIS stands for Environmental Impact Statement
- It is a thorough scientific study by a third party
- Paid for by the applicant
- SEQRA (the State Environmental Quality Review Act) mandates an EIS be performed whenever a proposed project is likely to have significant adverse environmental impacts

Risks posed by flooding S3

- Mine collapse: RESPEC: 1st 15' of claystone ceiling may lose 95% of strength
- Rubble chimneys between mine and lake
- Possible vortex damaging shoreline and water quality
- Loss of option to repurpose mine voids for other uses such as carbon sequestration

SUBSIDENCE ZONE if 35° angle of draw



ECL 23-2703 (2) (b) provides the basis for the exemption from state jurisdiction and it states:

"For the purposes stated herein, this title shall supersede all other state and local laws relating to the extractive mining industry; provided, however, that nothing in this title shall be construed to prevent any local government from:

- a. enacting or enforcing local laws or ordinances of general applicability, except that such local laws or ordinances shall not regulate mining and/or reclamation activities regulated by state statute, regulation, or permit; or**
- b. enacting or enforcing local zoning ordinances or laws which determine permissible uses in zoning districts ..."**

Mine Closure Scenarios

- Keeping the mine voids dry (default pre-EIS)
- Flooding as mining continues
 - Risky
 - The least-cost approach to mining
- Catastrophic Mine Failure:
 - Lake Peigneur-->Vortex/shore damage
 - Large hydraulic connection between lake and the mine
- Flooding at Decommissioning
 - 2022 Cargill closed their Avery Island Salt Mine
 - The larger the mine, the more saturated brine available
 - No known Cargill studies of risks to the lake; only posts \$3.5M in FA

Offering Cargill a gracious exit

- \$10B Environmental Bond
- EIS pre-closure: keep voids dry or flood the voids
- >\$100M endowment for the Cargill Salt Mining Museum; site rehab
- Funding the conversion of road salt application in the Keuka, Seneca, & Cayuga Lake Watersheds to brine application w >30% reduction

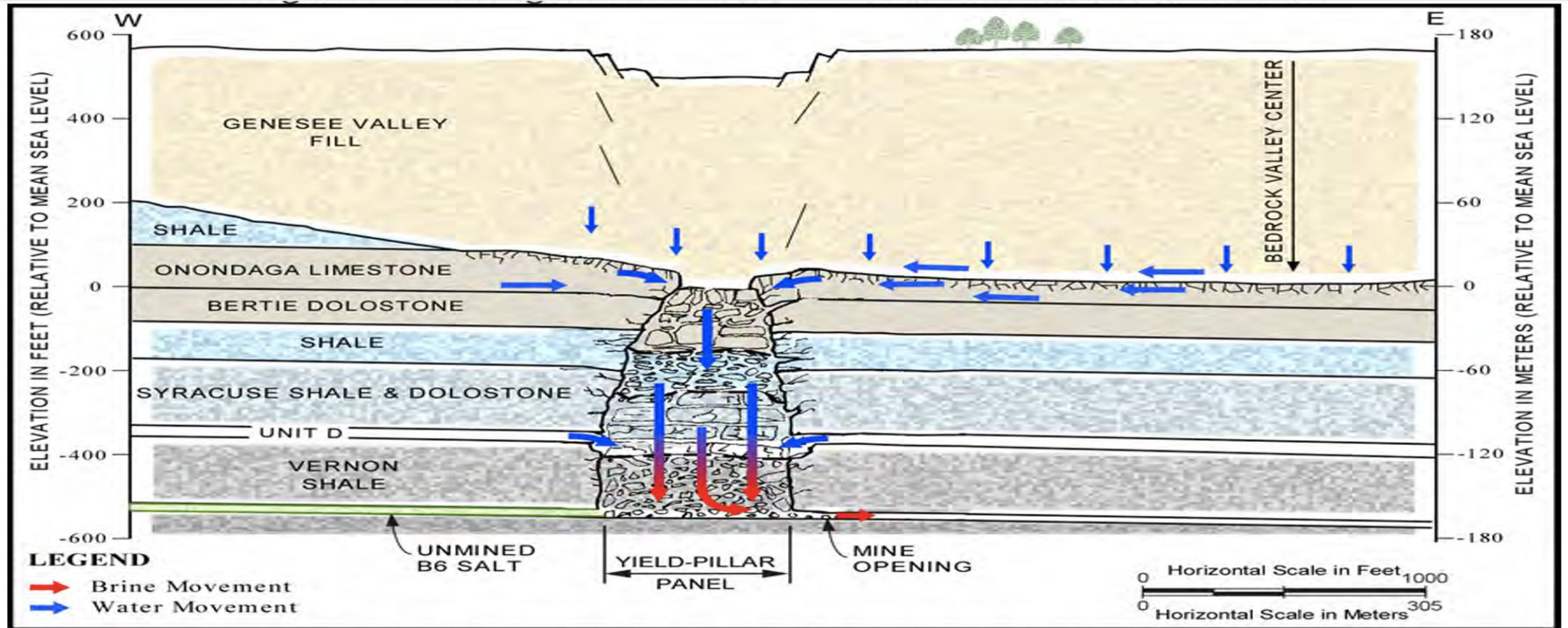


Figure 5. Condition after sinkhole formation at surface.

Table 1. 16 Opportunities when DEC could have required an EIS of the Cayuga Salt Mine			
No.	Material changes in life of mine, mining tech., or mining conditions	year(s) of change	Neg DEC
*	OGS transfers Cayuga Rock Salt rights to Cargill and adds 1600 acres to the Life of Mine	April 5,1974	
*	First NYSDEC Mine Permit issued	April 1,75	
1	Sinking Shaft 3 down to the 6-level salt; cutting ramps from 4- to 6-salt	1975-76	
2	Change in East Mine from large pillars to small yielding pillars	1976	
3	Mineral Rights extended to 1385 acres	April 1,84	
4	Commencement of mining under Cayuga Lake in the 6-level mine	1984	
5	Mineral Rights extended to 3485 acres	Jan 12, 94	
6	NYSDEC and Cargill enter an agreement that stipulates that Cargill will provide some information on mine operations and fund an independent mining consultant for DEC	Jan 14, 2000	
7	In lieu of an EIS, Expanded Environmental Assessment by Spectra Environmental	Dec 22, 2000	
8	1 st reporting on disposal of shaft leakage waters in 4-level mine	2003	
9	Cargill idles S3 area of mine following 24 seismic “pops” on July 15	2011	
10	Expansion of Life of Mine by 150 acres to enable panel U63 East to be mined to Shaft 4	June 2, 2015	
11	Mining under Anomaly C using large pillar technology	2016 & ff	
12	Construction of Shaft 4 receives Neg Dec	June 30, 16	yes
13	Cargill drill decompression boreholes in the ceiling of panel U12	2021-2022	
14	Cargill begins flooding S3 portion of the 6-level mine	Feb 2023	11/19/24
15	Lack of a closure plan for the mine despite Cargill having the mine for sale and Cargill ending the third shift in October 2024	2023-2024	
16	Expiration of Cargill’s mining permit	April 2024	
*The State Environmental Quality Review Act (SEQRA) became law on 1 August 1975. Sources: various, including documents released under FOIL by DEC			