Velsicol Chemical

In-situ Thermal Treatment
Lessons Learned

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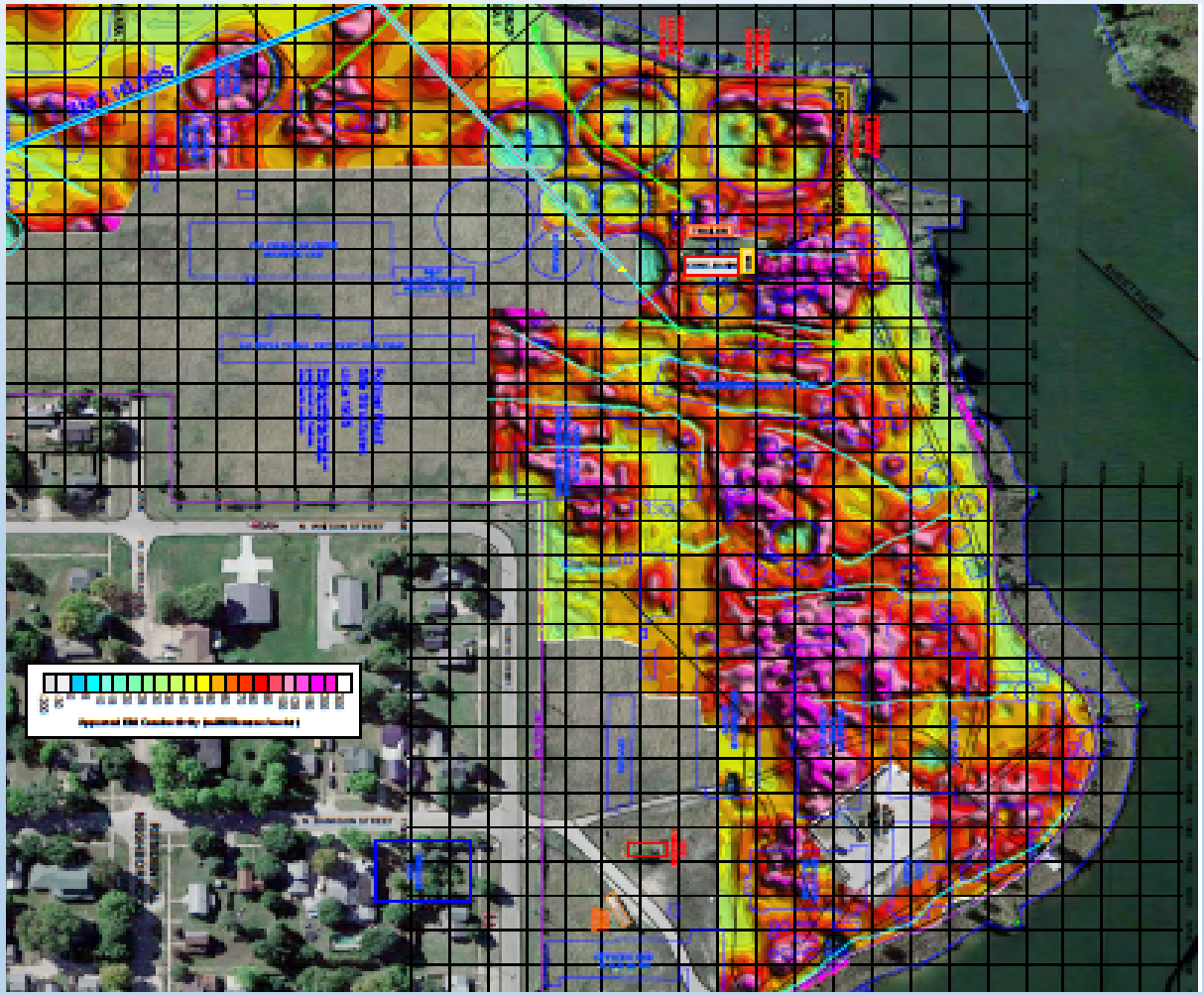
EPA Region 5


Velsicol Burn Pit
Remediation Boundary
W Prospect St
PINE RIVER
Remediation Boundaries
Area 2
A
B
C
D
E
Remediation Boundaries
Area 1
A
B
C
Velsicol Former
Plant Site
North Ave
W Center Ave
Orchard Ct
Wilson Pl
N Watson St
N Banksom St
N Delaware St
N Pine St
Legend
Velsicol Burn Pit - Remediation Boundary
Remediation Boundaries - Area 1
Remediation Boundaries - Area 2
N
0
300
600 Feet

Presence of Demolition Debris

1980 Demolition

2013-2014 Geophysical Survey



Drilling Debris – Area 2

Area 2 Facts

Phase 1 (Area B)

- Over One-Acre
- 242 heaters into till (7 ft) with 12 to 15 ft spacing
- 52 MPEs and 52 shallow vapor phase extraction wells
- Estimated 240 days heating

Phase 2 (Area A, C, D, E)

- Approximately two acres
- 325 heaters
- 70 MPEs and 70 shallow vapor phase extraction wells
- Estimated 228 days of heating

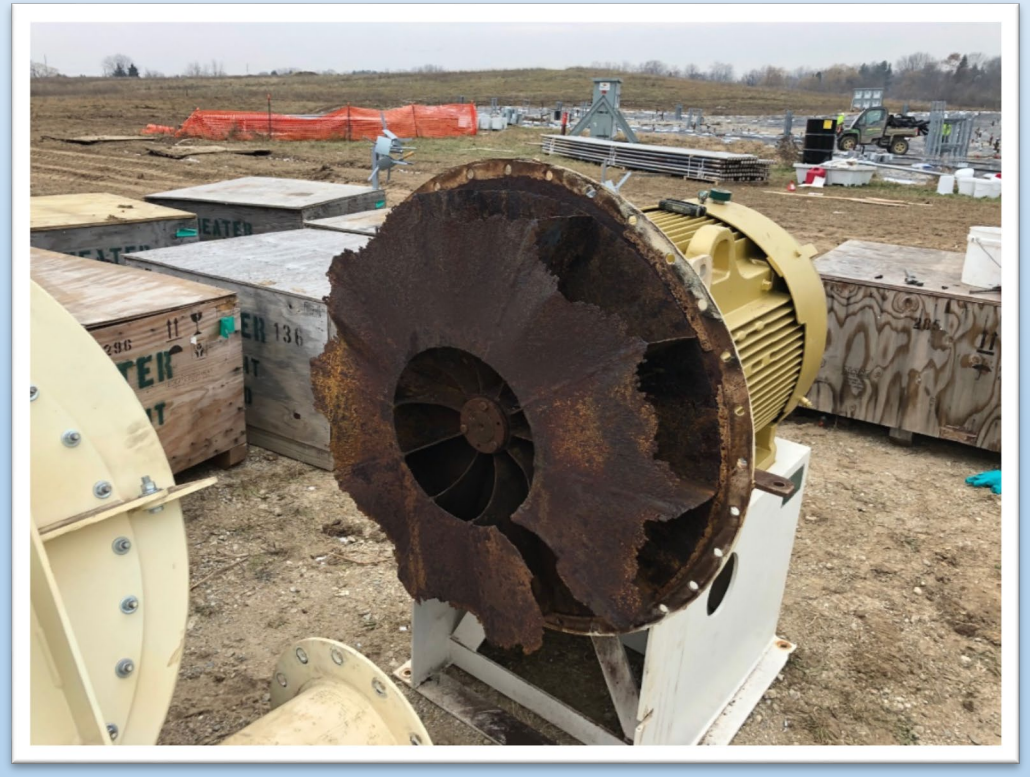
Completion scheduled for late summer/fall of 2021

Area 2 – Subarea B

Corrosion

Schedule 40 Piping (Pictured)
to Schedule 80 Piping

Epoxy Coating Impellers



More Than Expected NAPL Recovery

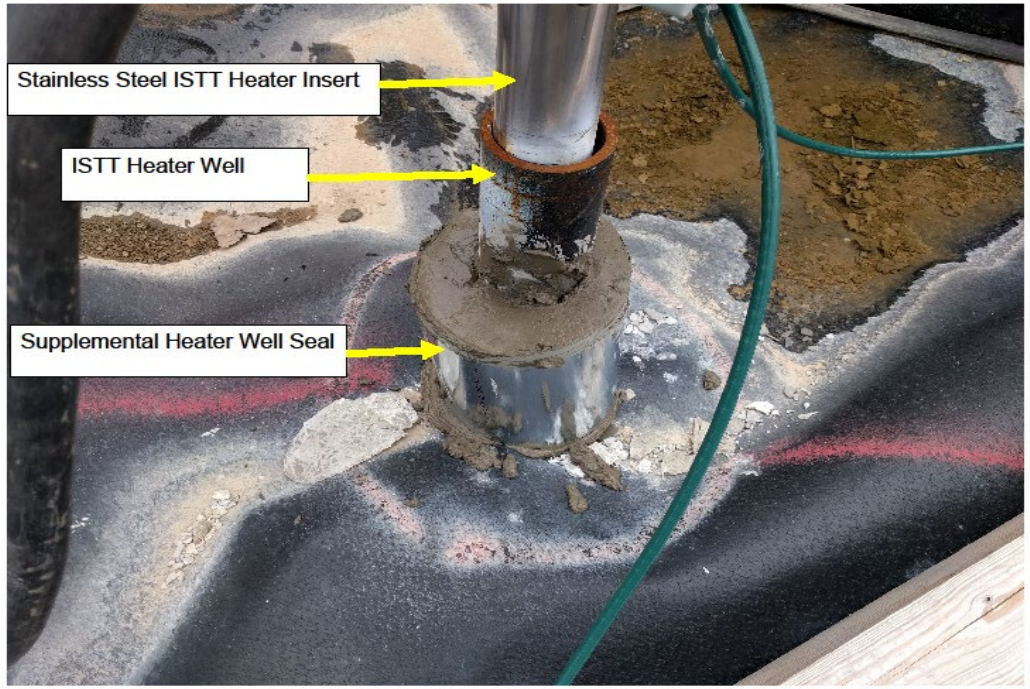
Modifications to Water Treatment System

Aesthetic Issues – Addition of Water Treatment Additives

Vapor Phase Redundancy

Additional Shallow Vapor Extraction Wells

Odors - Inspection/sealing of heaters



Backup Generator

Winter Protection for Water Treatment Plant

Cleanup Summary

More than 55,000 pounds contaminants removed

Over twice estimated design mass.

Energy 9,700,000 kWh

Additional 25% promoting more robust treatment.

Maintained target treatment zone temperature ~103 ^{o}C.

Treated over 5,700,000 gallons of contaminated groundwater

Air Monitoring Program

Over 5,000 wellfield perimeter PID measurements with no detections.

Over 1,000 ambient air laboratory samples with no system related exceedances.

Over 1 million data points monitoring system operation

30,000 manually collected system operations data points.

1,000 system vapor PID samples.

400 wastewater and 160 vapor laboratory samples.