



McLouth Steel RI/FS Update

Community Advisory Group Meeting

September 12, 2024

Christopher Vandegrift, Project Manager, CDM Smith

Ernest Ashley, Project Technical Lead, CDM Smith

Nilia Moberly Green, Remedial Project Manager, USEPA



Remedial Investigation / Feasibility Study (RI/FS)

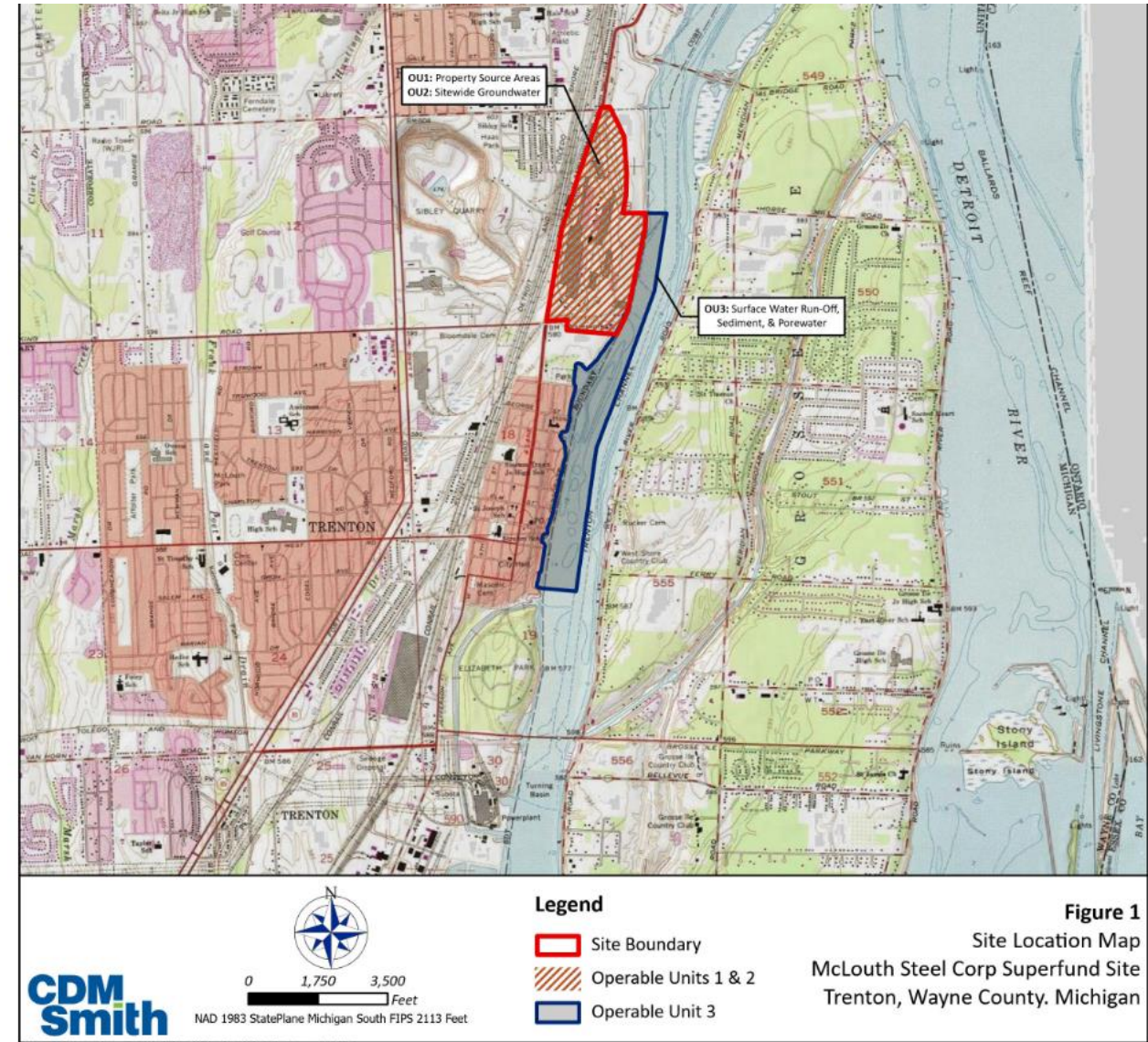
- A Remedial Investigation is being performed to collect information on the nature and extent of contamination at the former steel plant property.
- The goals of the RI are two-fold:
 - to provide enough detail to assess the risks posed by the site to human health and the environment, and
 - to enable evaluation of potential and appropriate remedial measures in the Feasibility Study .



McLouth Steel

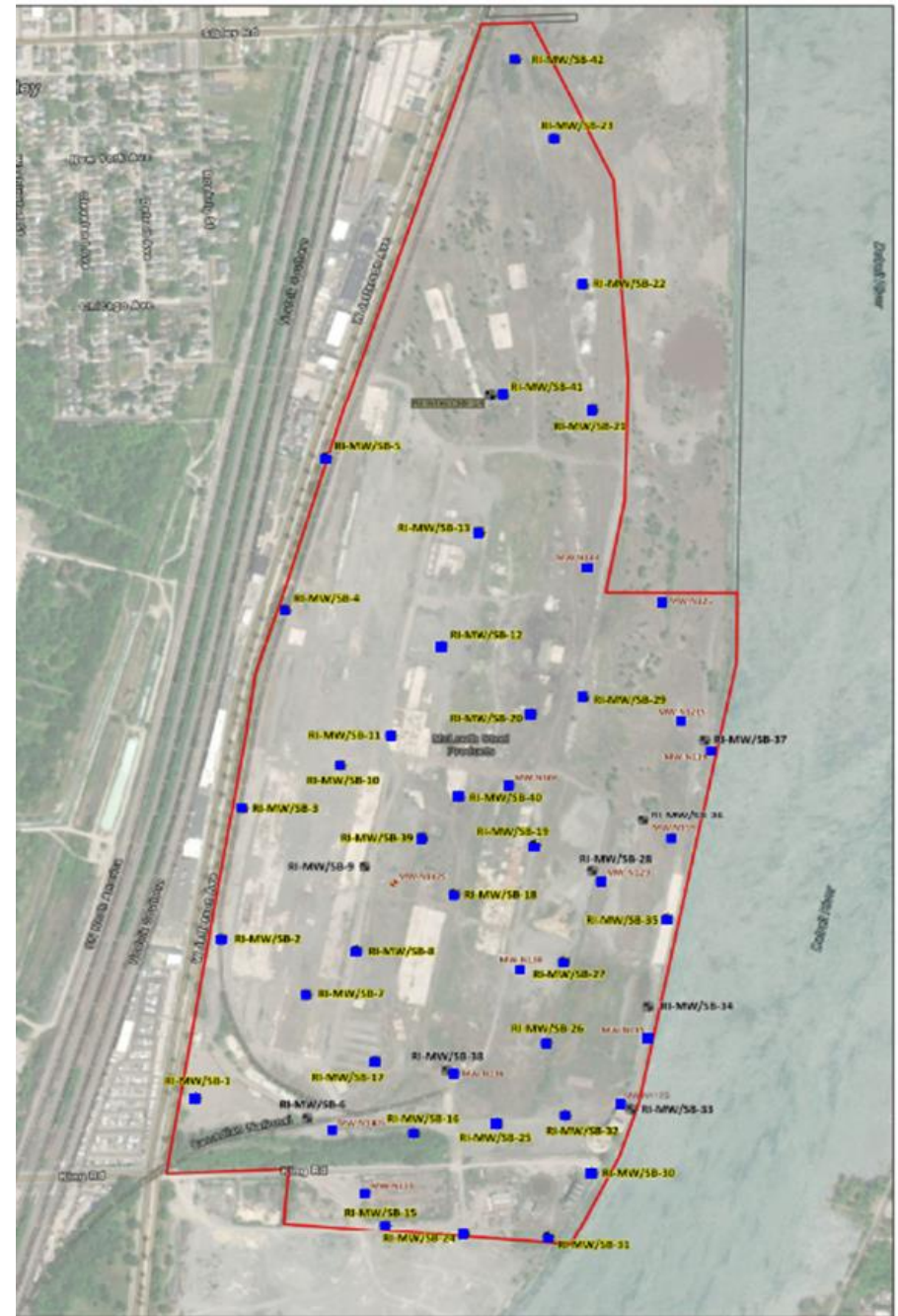
Three Operable Units

- Operable Unit 1 (OU1) – Source Areas
 - Releases to the land, fill materials, steel plant slag, etc.
- Operable Unit 2 (OU2) – Groundwater
 - Impacts to groundwater, assessment of site hydrogeology, evaluation groundwater discharge
- Operable Unit 3 (OU3)– Trenton Channel
 - Groundwater discharge to surface water, impacts to sediment and porewater



OU1 and OU2 - Investigation

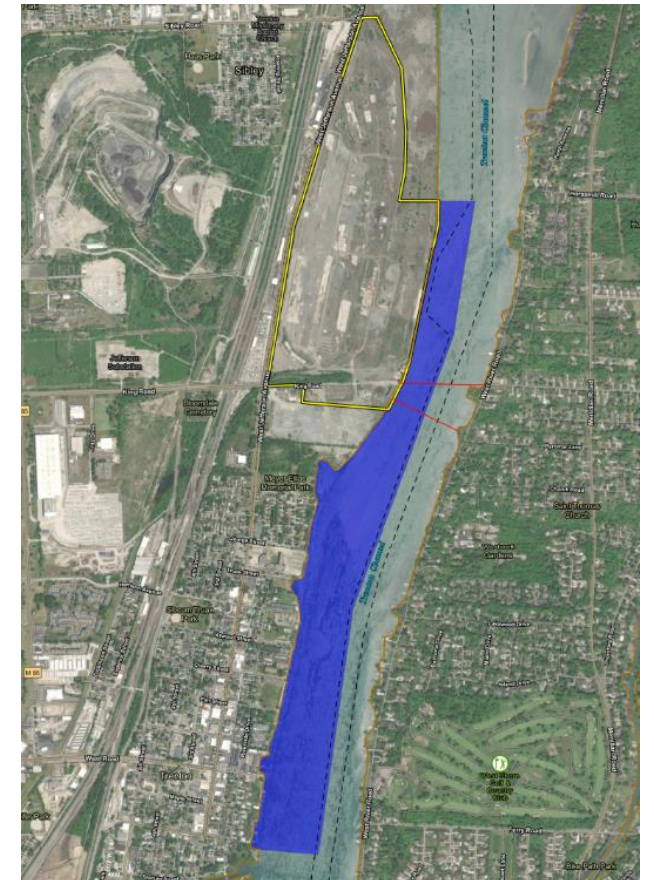
- Work Completed
 - ✓ Soil borings/soil sampling (34 borings)
 - ✓ Monitoring well installation (32 new wells)
 - ✓ Well development (32 new & 14 existing)
 - ✓ Synoptic round of water level elevations
 - ✓ Groundwater sampling (46 wells)
 - ✓ Hydraulic testing of monitoring wells (12 wells)
 - ✓ Survey of monitoring wells
 - ✓ Technical Memorandums (EPA website)



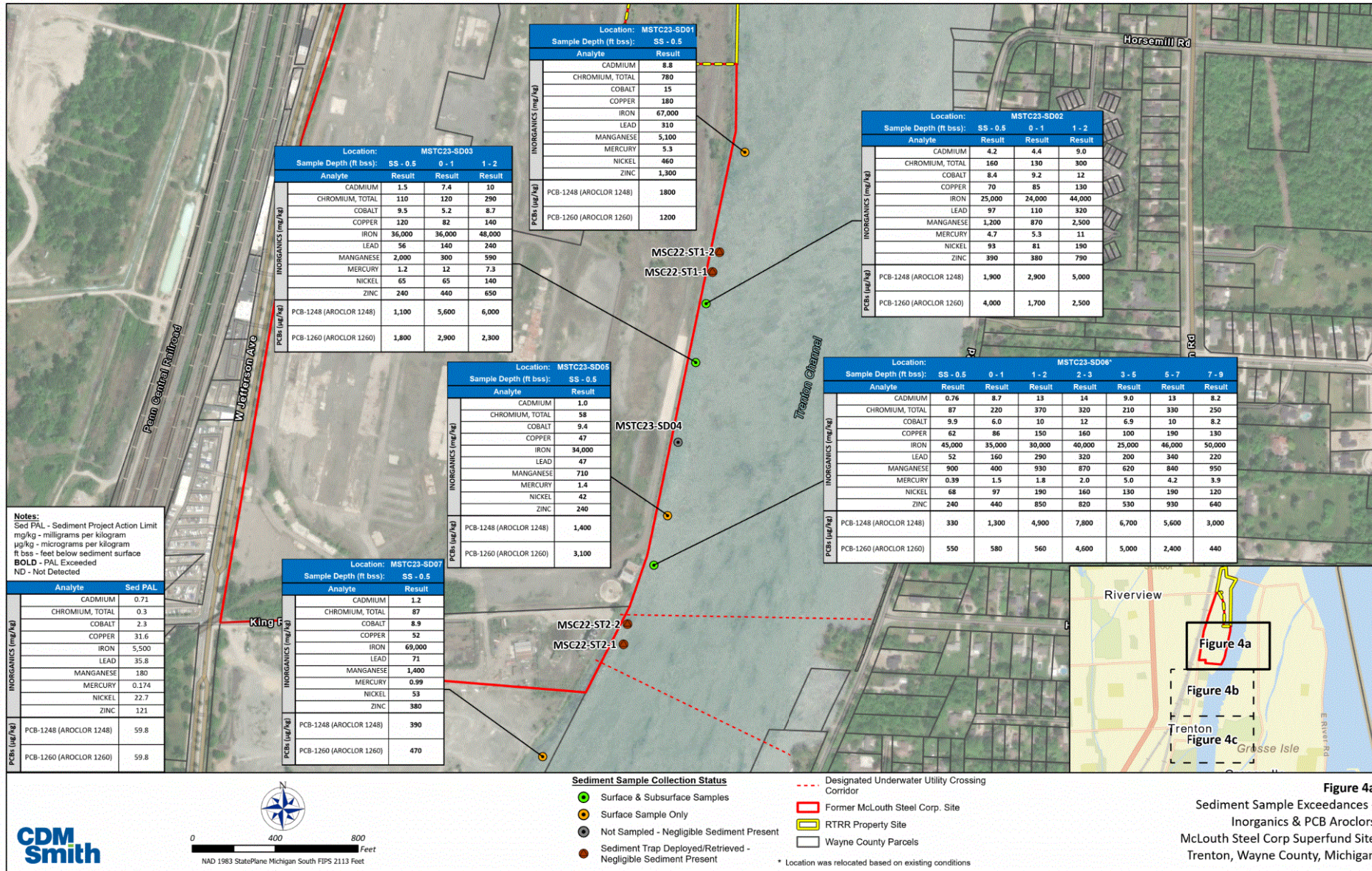
OU3 - Investigation

■ Work Completed

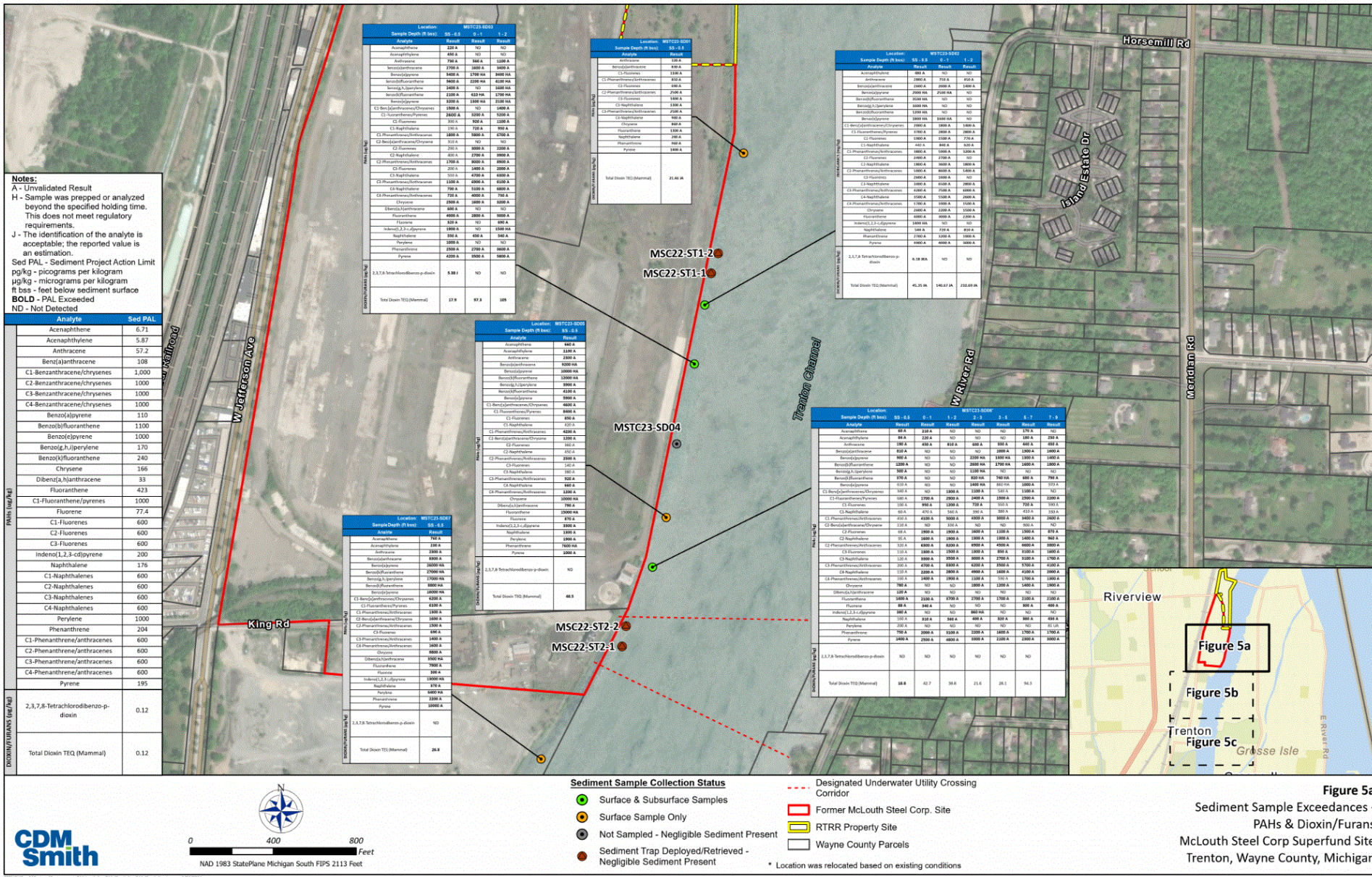
- ✓ Sediment Sampling by PONAR dredge and Vibracore
 - 17 locations, 16 surface samples, 29 core samples
 - PCBs, Metals, PAHs, D/Fs exceeded screening levels
- ✓ Sediment Trap Sampling – limited sediment recovered
 - Insufficient sediment for chemical analyses
- ✓ Surface Water Sampling
 - Collected April 2024 after 1.4” rain event
 - No appreciable flow from site outfalls
 - Collected one site seep sample and samples of five downstream outfalls
 - Data under review



OU3 Sediment Data – PCBs and Metals


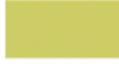




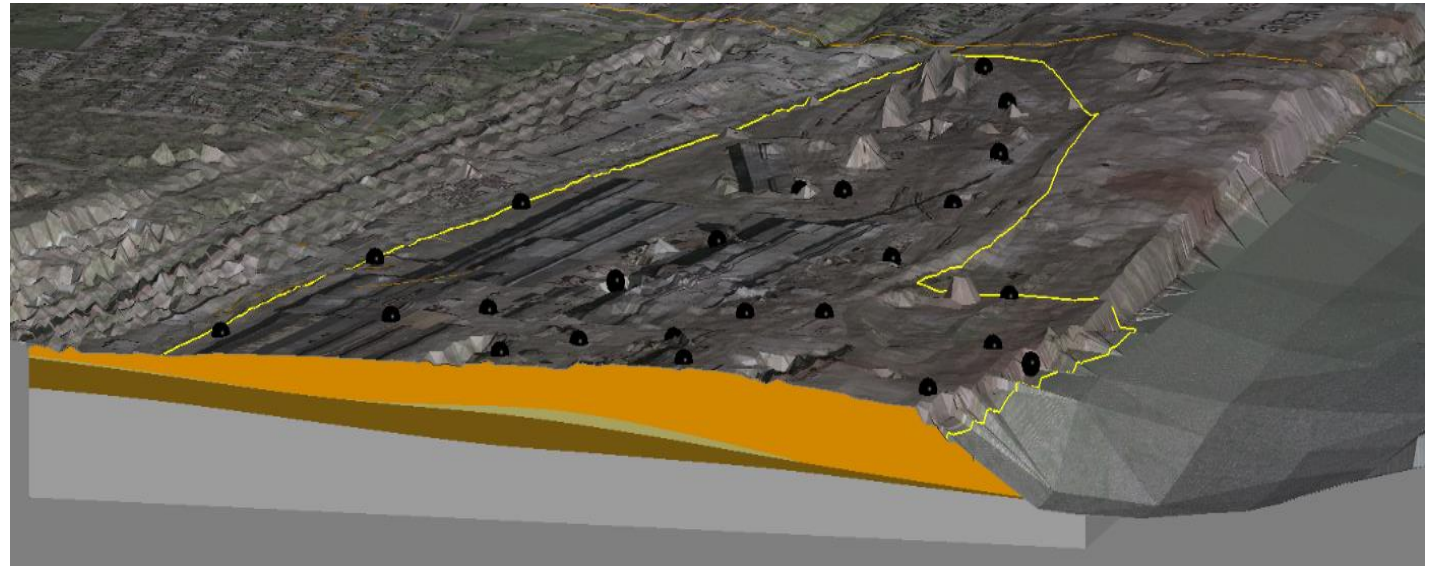
OU3 Sediment Data - PAHs, Dioxins and Furans



Site Geology

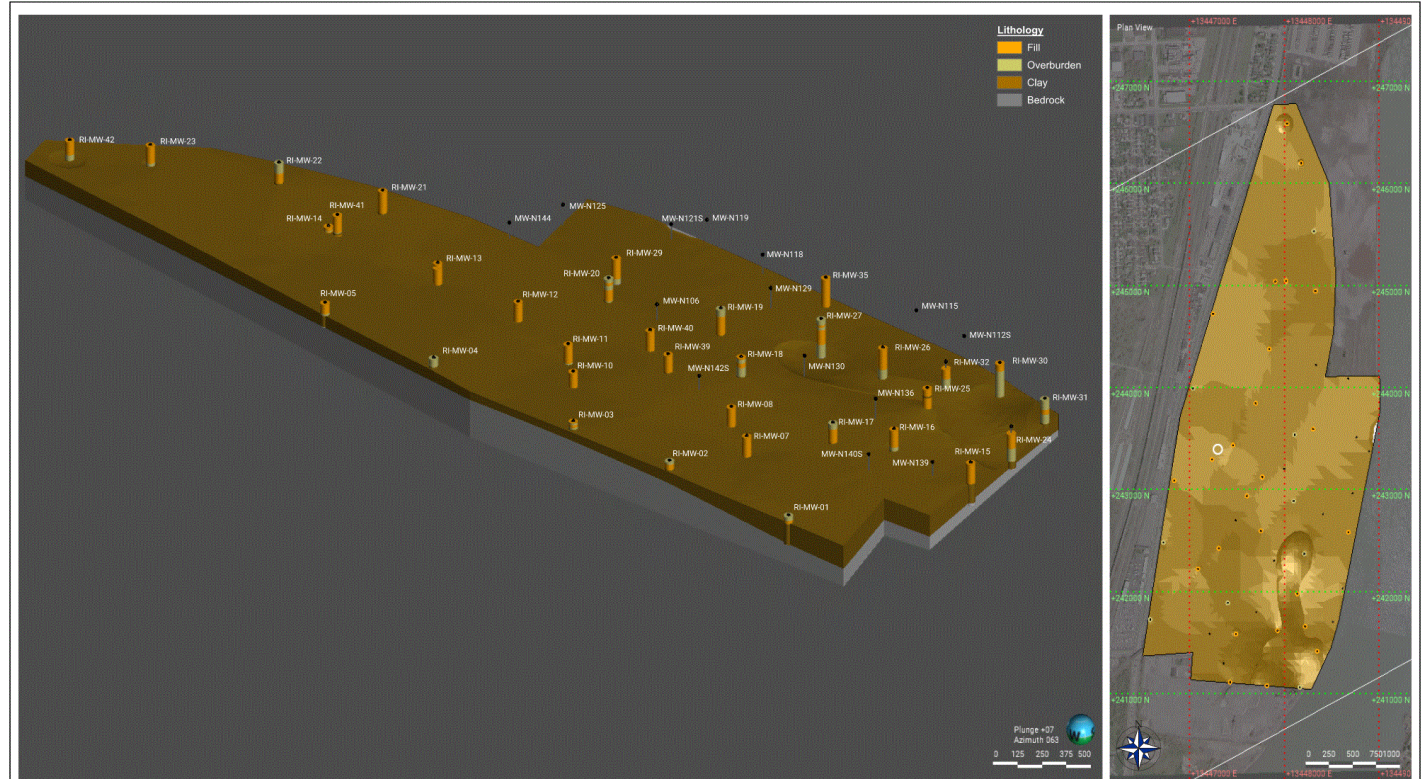
Geologic Cross Section

- Fill 
- Native Overburden 
- Native Clay 
- Dolomitic Limestone 



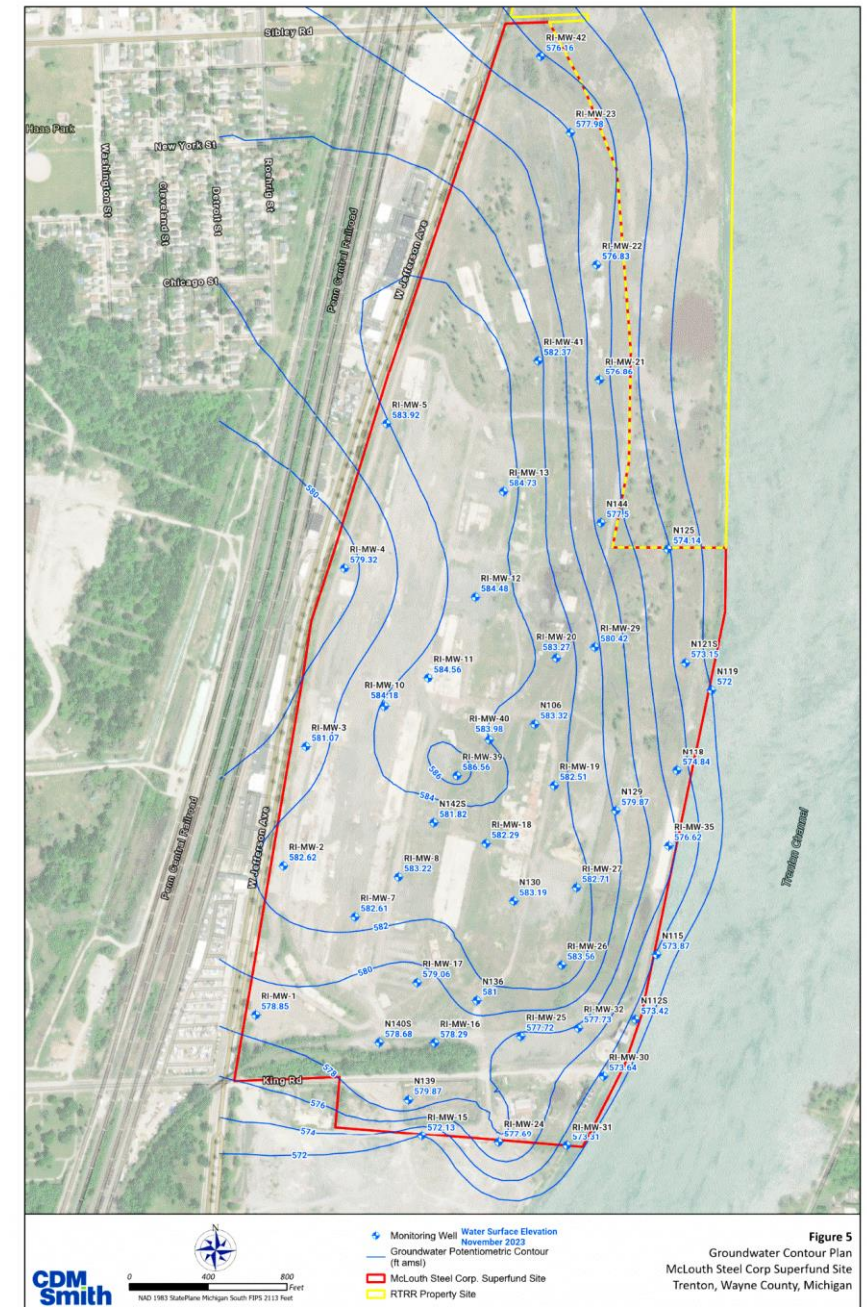
Top of Clay Surface

- Clay noted across the site
- Erosion of clay surface noted in southern portion of the site



OU2 - Groundwater Contours

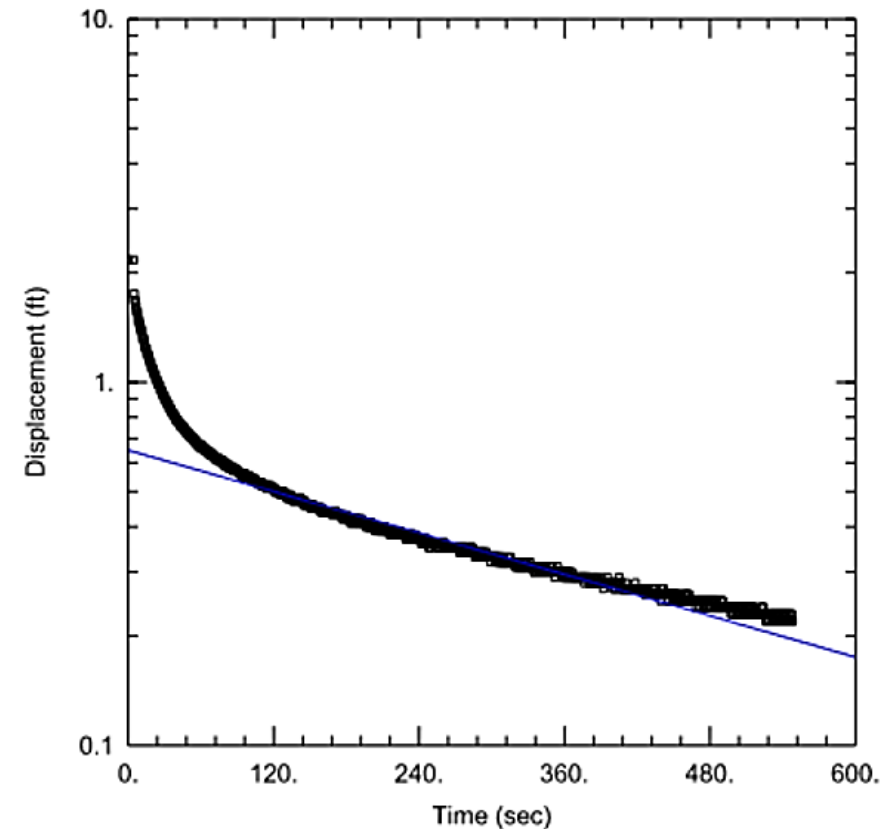
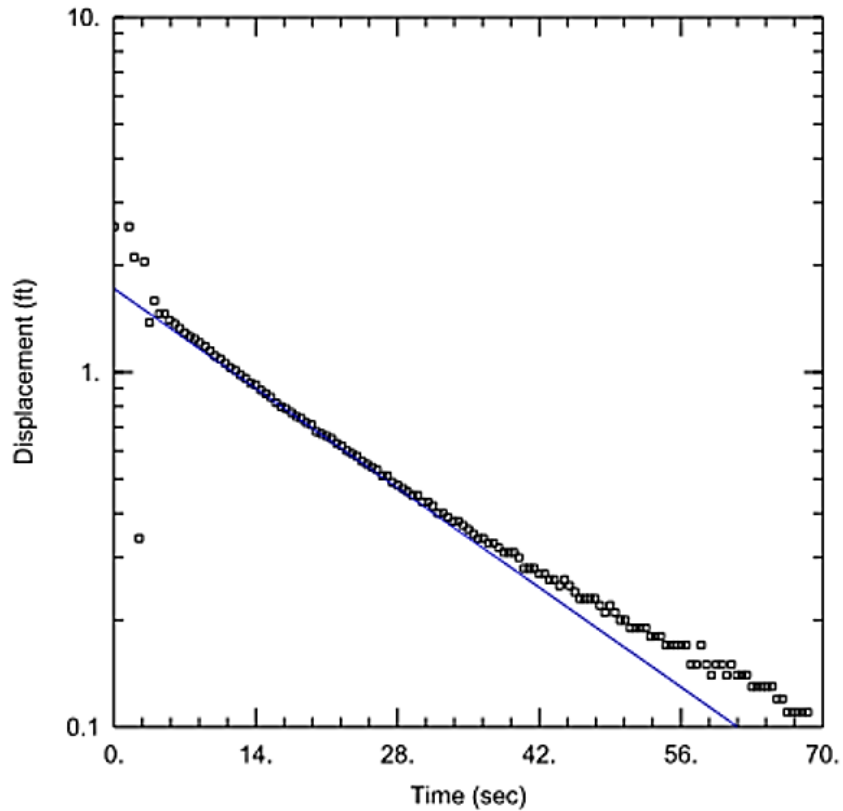
- Highest water levels near center of the site
- Most of the gradient toward Trenton Channel
- Some westerly flow component noted
- Dewatering at former quarry influence likely
 - Pumping ~1050 gpm, 1.5 million gallons per day



TWO FOOT GROUNDWATER ELEVATION CONTOURS

Hydraulic Conductivity Values Varied Across the Site

- Conductivity of the fill ranged from 0.1 to 24 ft/day
- Information for evaluation of groundwater flow and contaminant transport



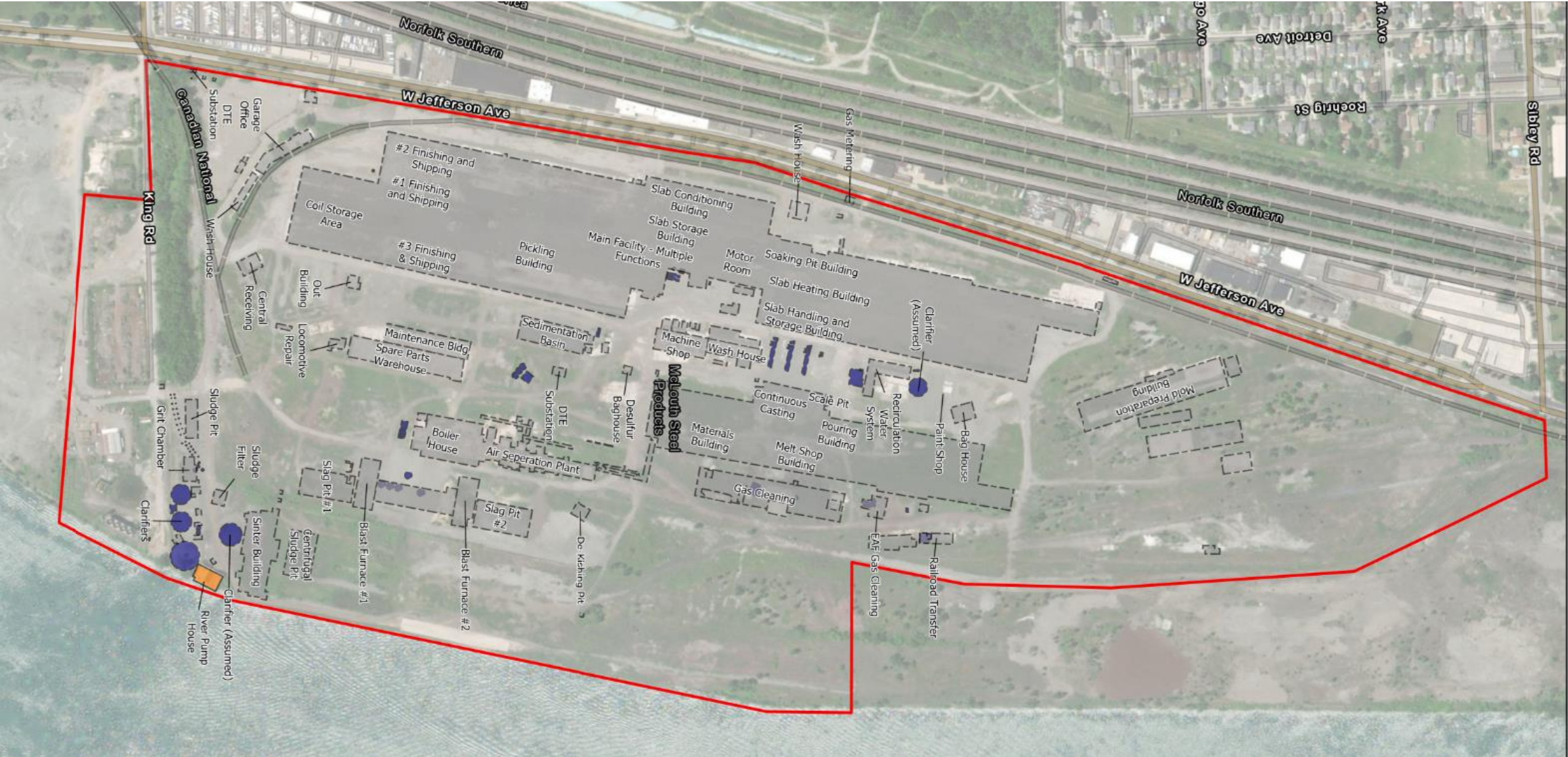
Fast Recovery - High hydraulic conductivity

Slug being inserted into the well

Slow Recovery - Low hydraulic conductivity

McLouth Steel – Former Site Layout and Features

North



Groundwater Results - pH

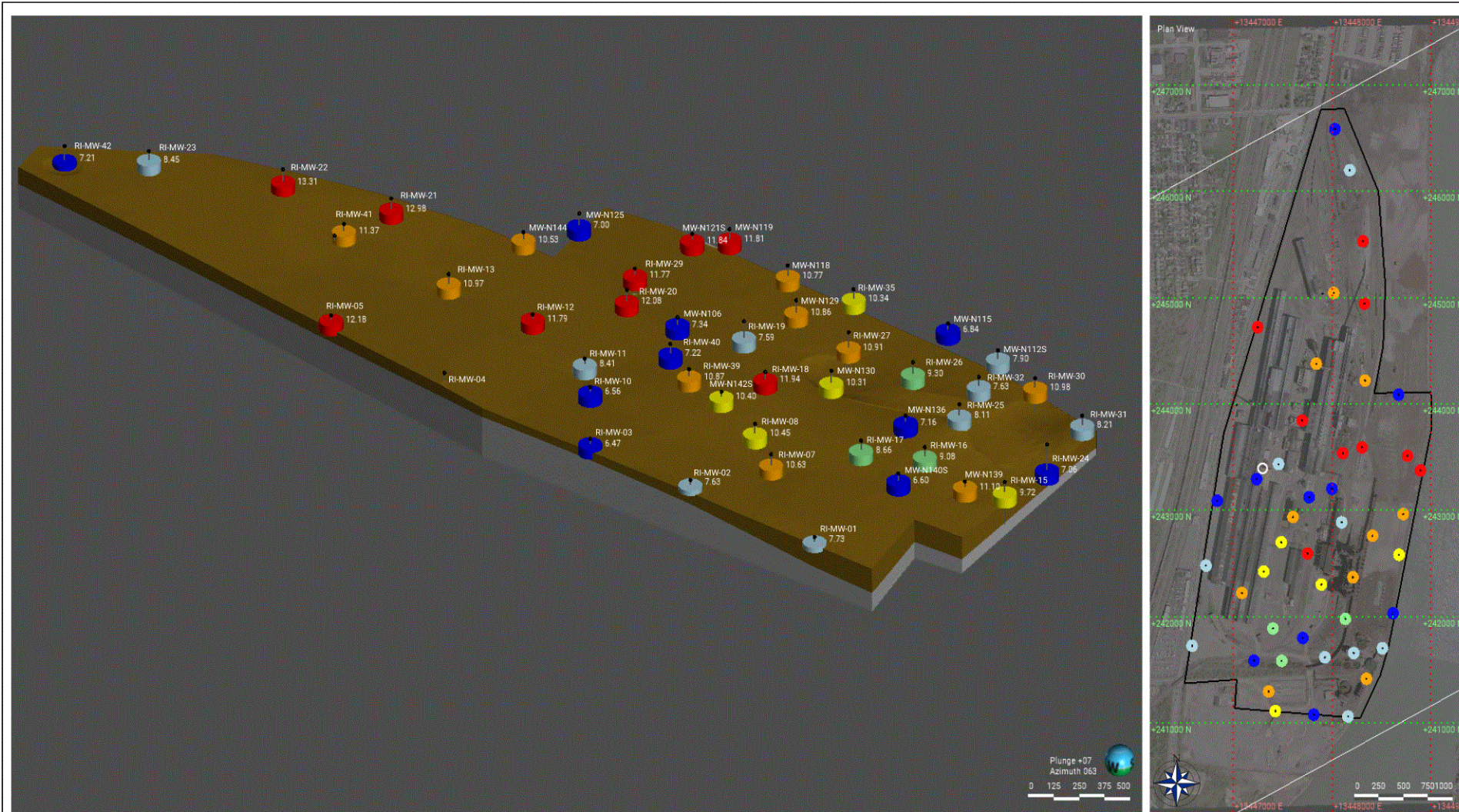
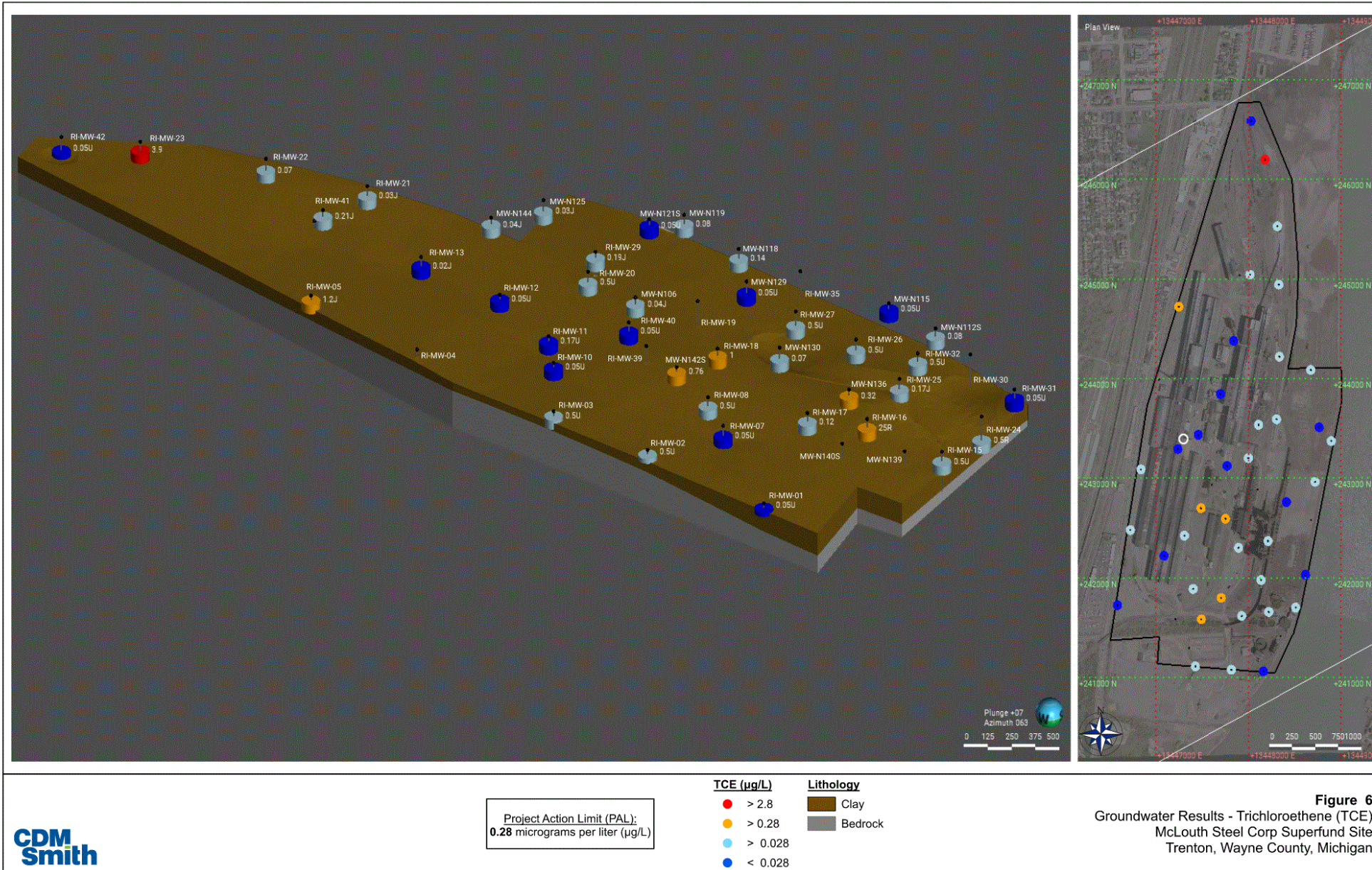


Figure 19
Groundwater Results - pH
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan



Groundwater Results - TCE



Groundwater Results – 1,4-Dioxane

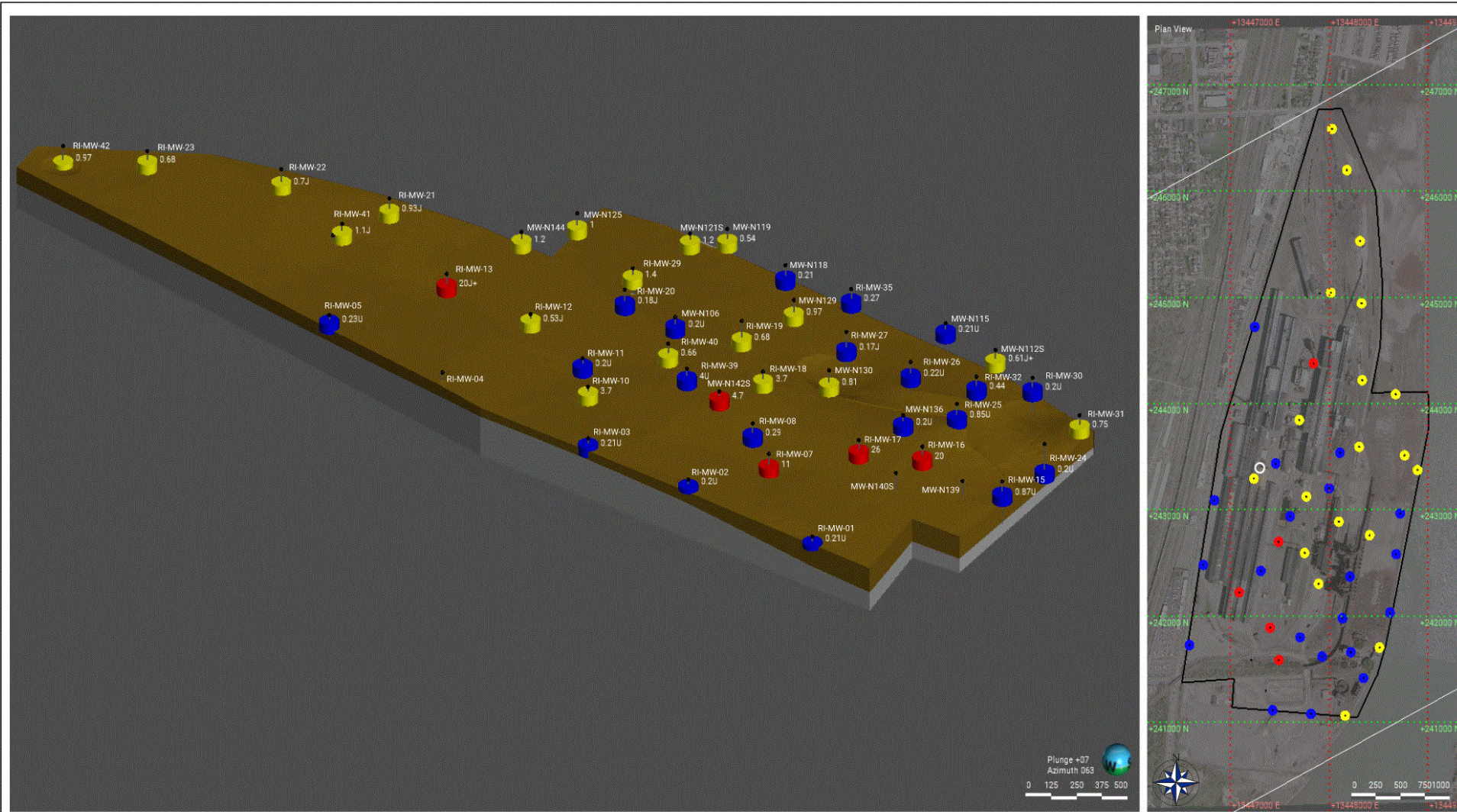


Figure 8
Groundwater Results - 1,4-Dioxane
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Benzene

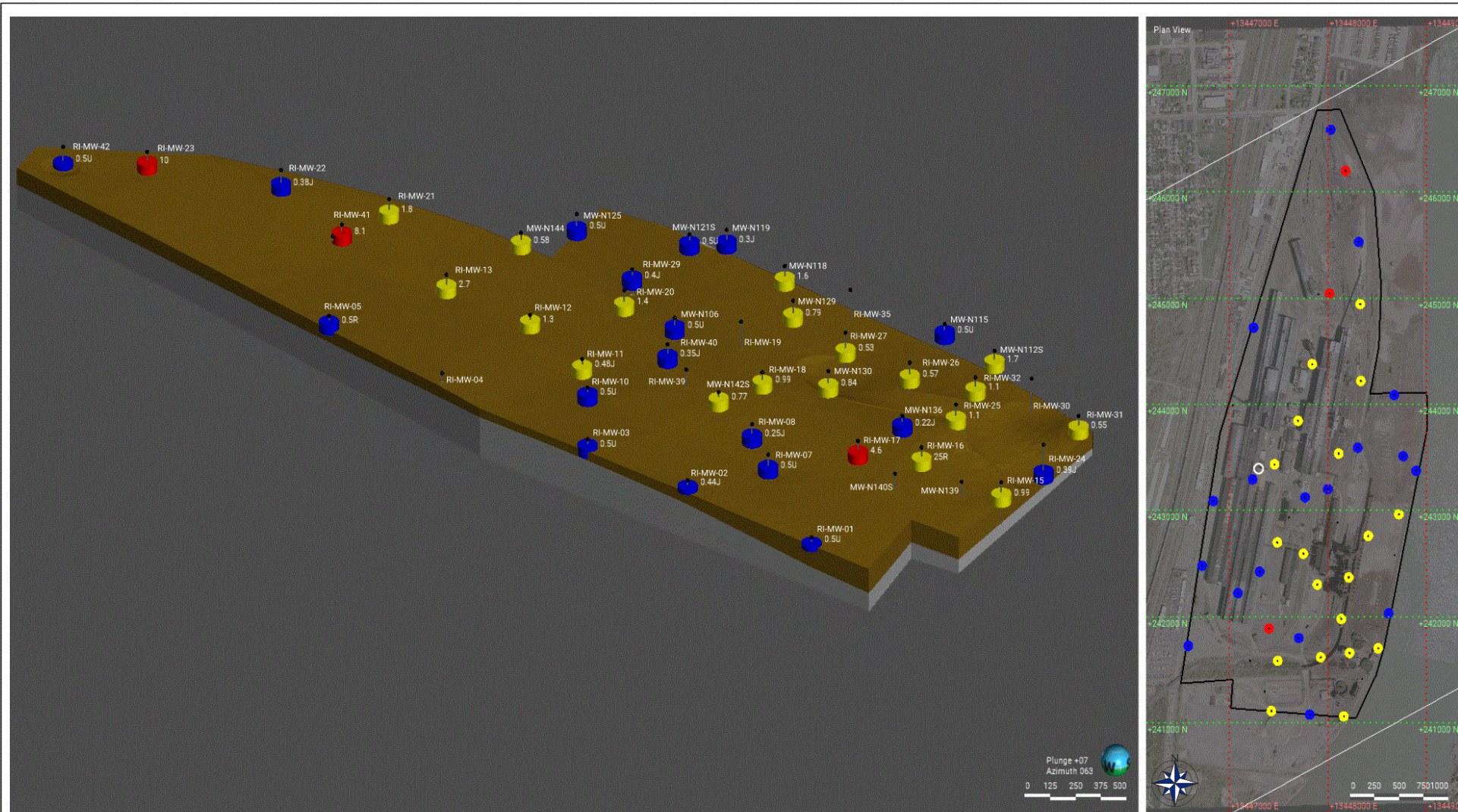


Figure 7
Groundwater Results - Benzene
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Naphthalene

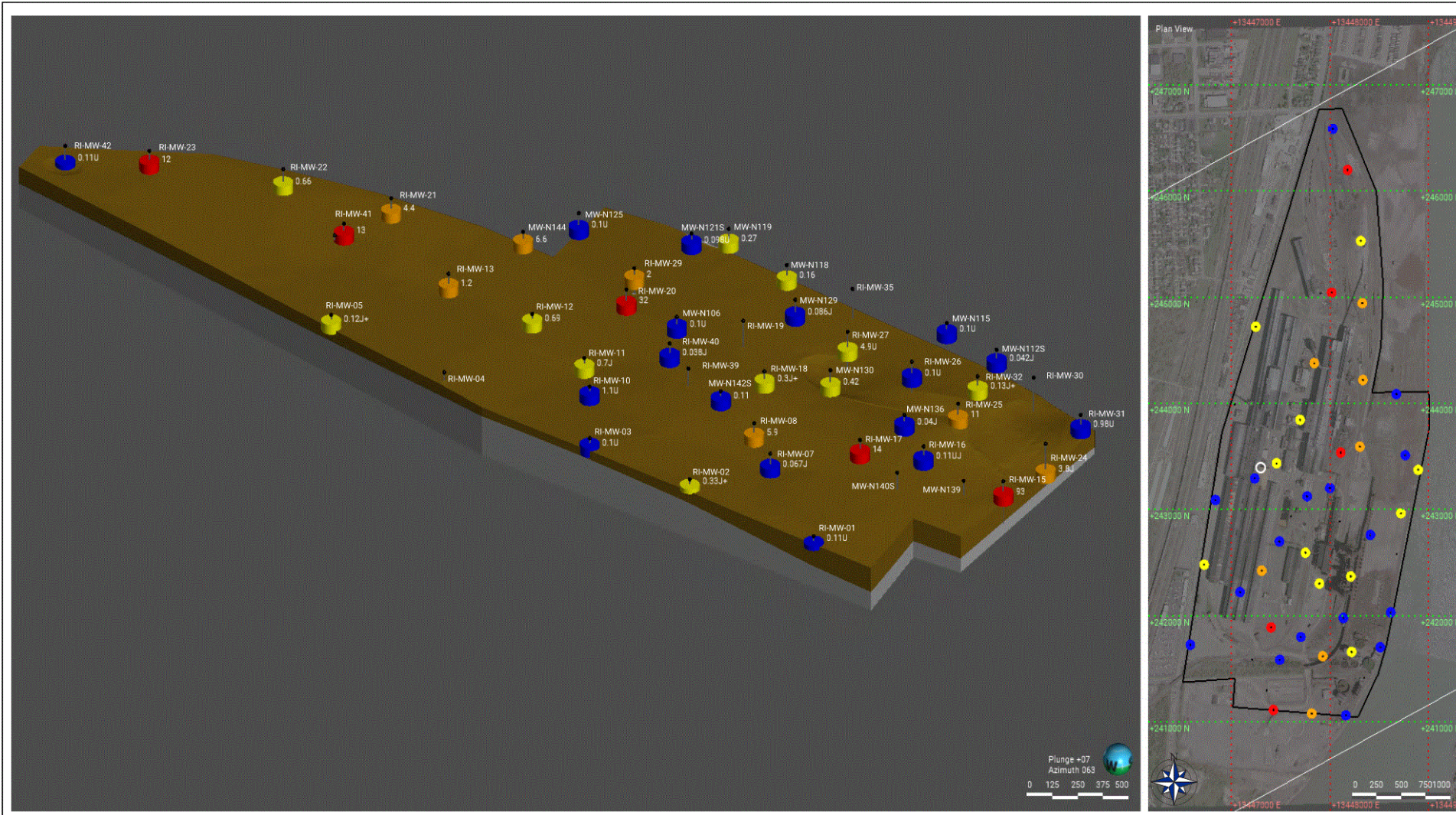
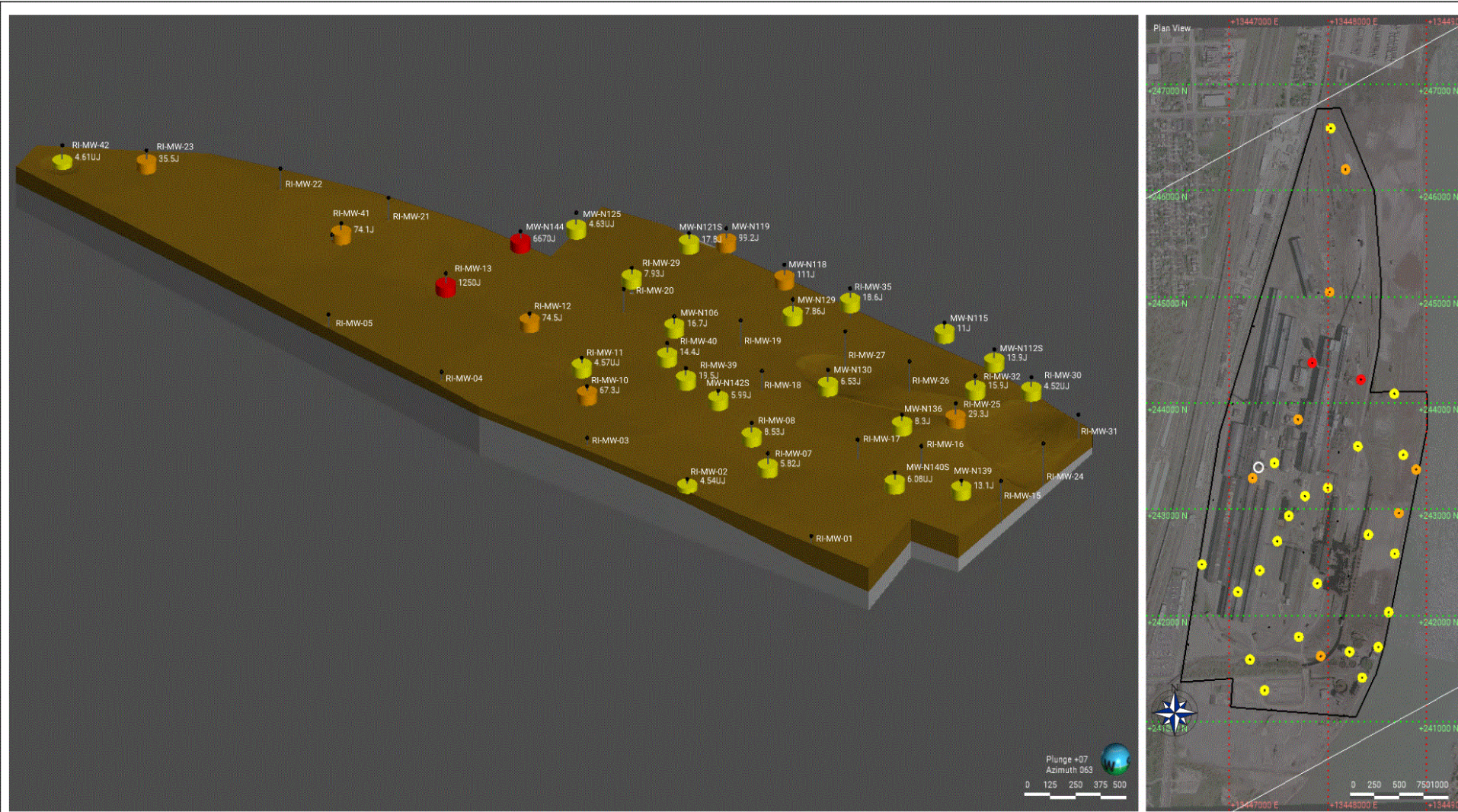


Figure 9
Groundwater Results - Naphthalene
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - PFOS



Project Action Limit (PAL):
0.02 nanograms per liter (ng/L)

PFOS (ng/L)

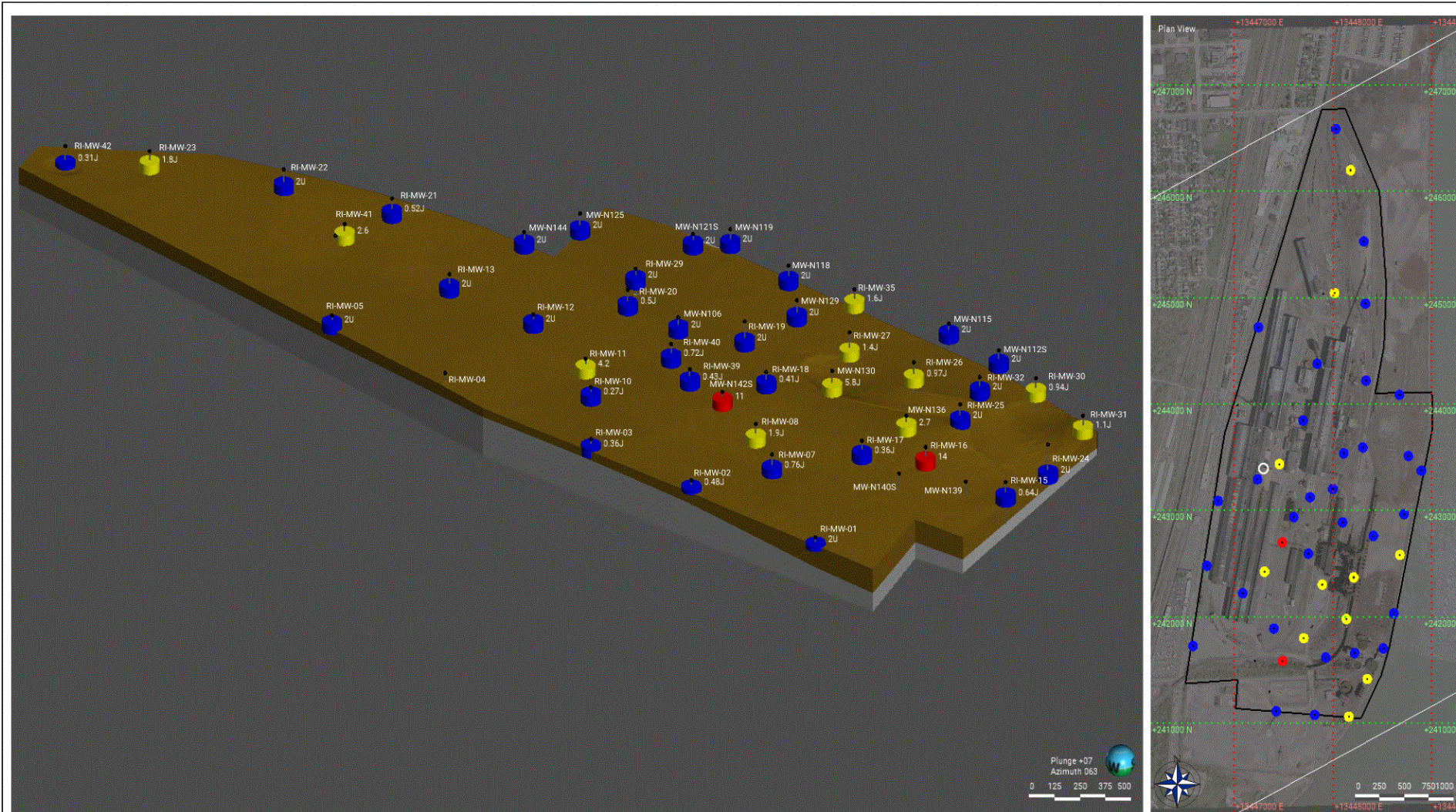
- > 200
- > 20
- > 2
- < 2

Lithology

- Clay
- Bedrock

Figure 11
Groundwater Results - PFOS
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Antimony



Project Action Limit (PAL):
0.78 micrograms per liter (µg/L)

- | Antimony (µg/L) | Lithology |
|-----------------|-----------|
| ● > 7.8 | ■ Clay |
| ● > 0.78 | ■ Bedrock |
| ● < 0.78 | |

Figure 12
Groundwater Results - Antimony
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Arsenic

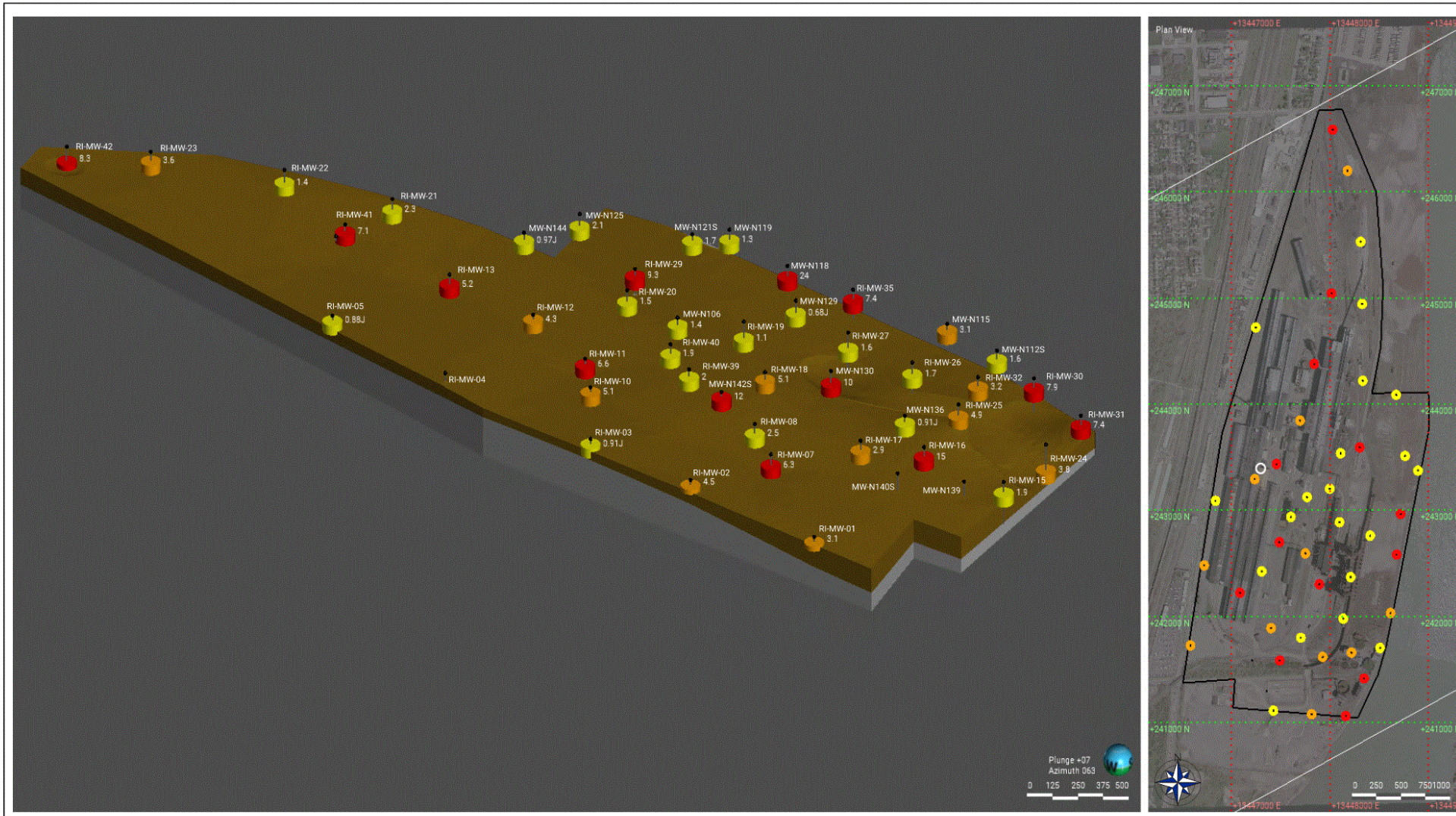
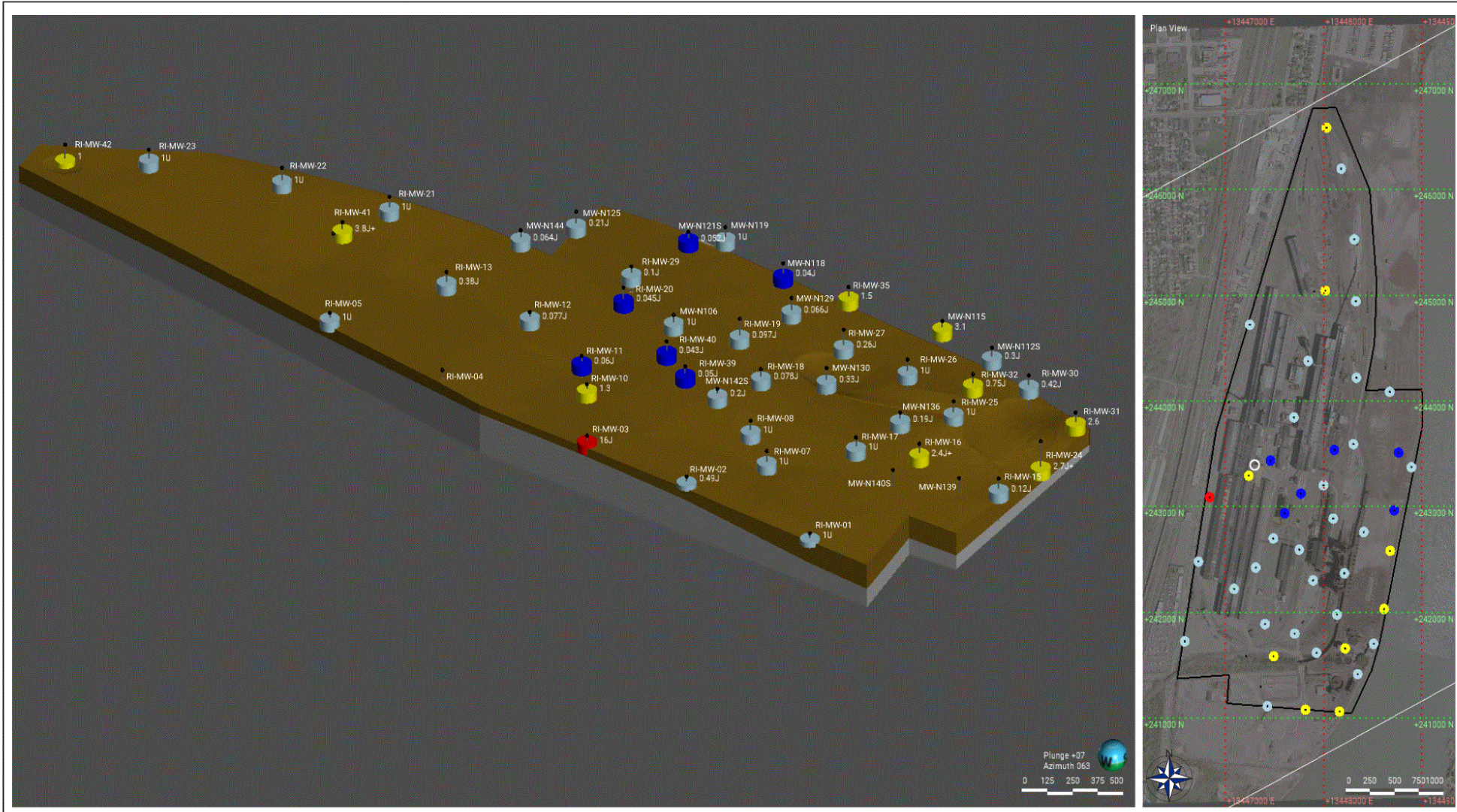


Figure 13
Groundwater Results - Arsenic
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Cobalt



Project Action Limit (PAL):
0.6 micrograms per liter (µg/L)

- Cobalt (µg/L)**
- > 6
 - > 0.6
 - > 0.06
 - < 0.06

- Lithology**
- Clay
 - Bedrock

Figure 14
Groundwater Results - Cobalt
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Lead

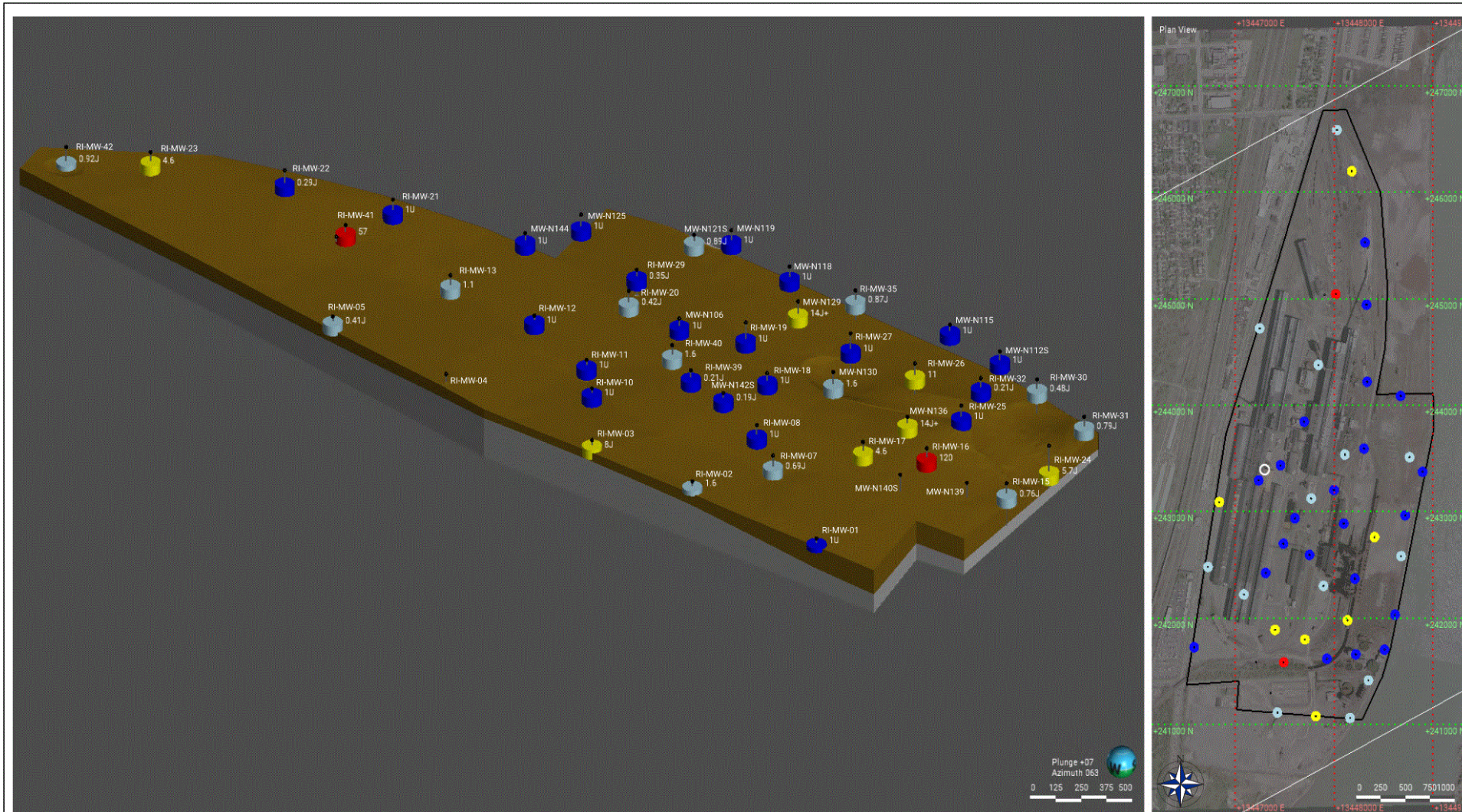
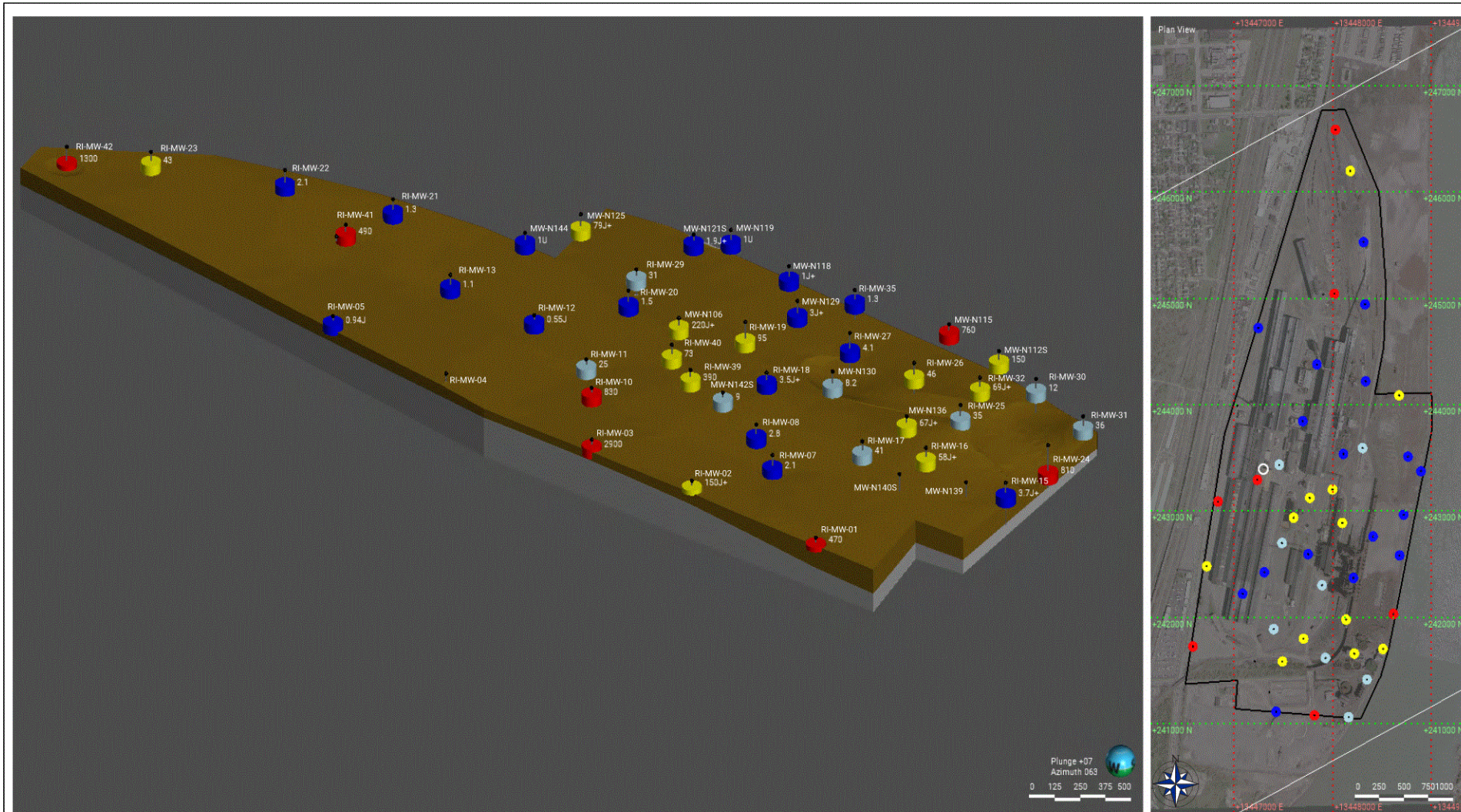


Figure 15
Groundwater Results - Lead
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Manganese

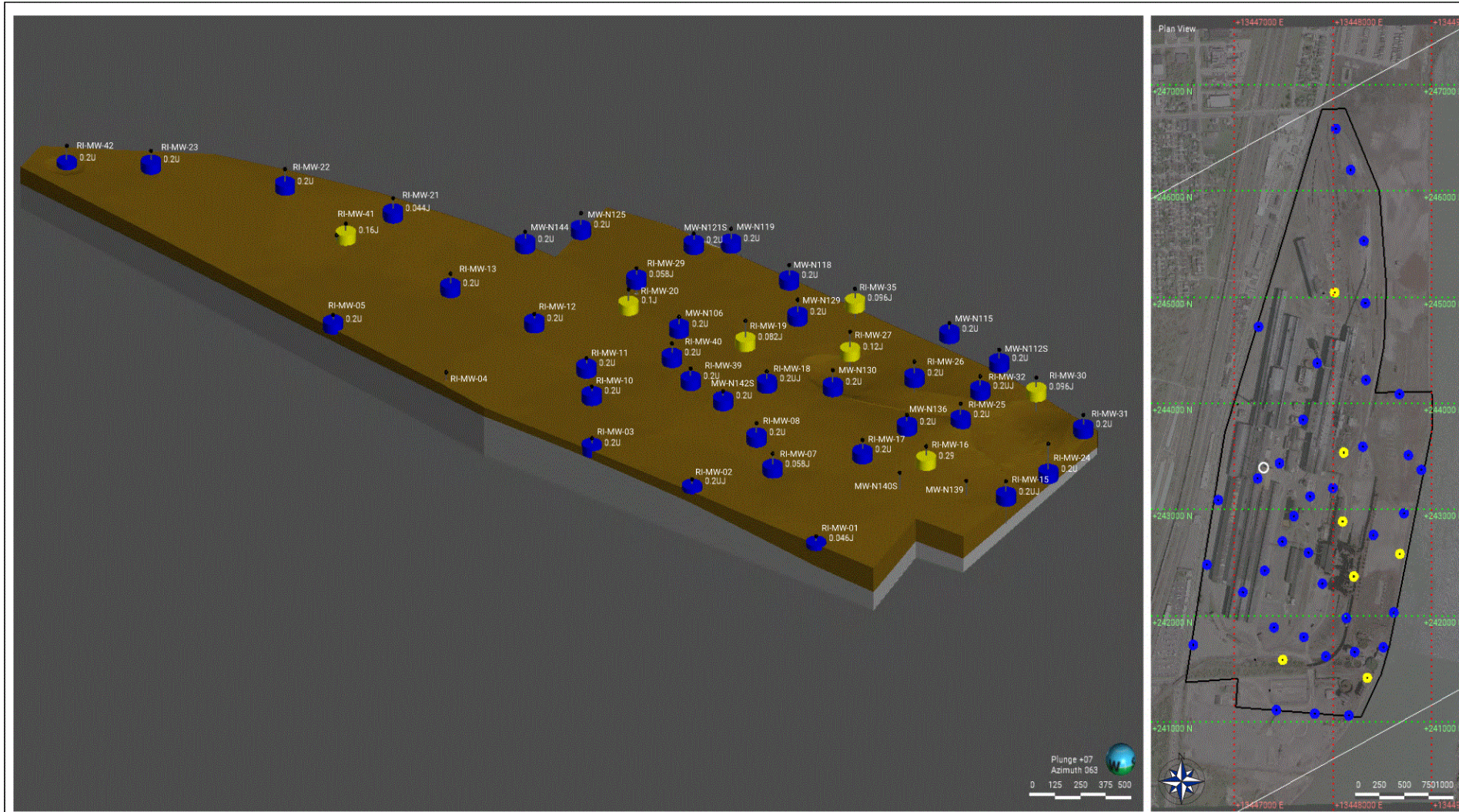


Project Action Limit (PAL):
43 micrograms per liter ($\mu\text{g/L}$)

- Red: > 430
- Yellow: > 43
- Light Blue: > 4.3
- Dark Blue: < 4.3

Figure 16
Groundwater Results - Manganese
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Mercury



Project Action Limit (PAL):
0.063 micrograms per liter (µg/L)

Mercury (µg/L)

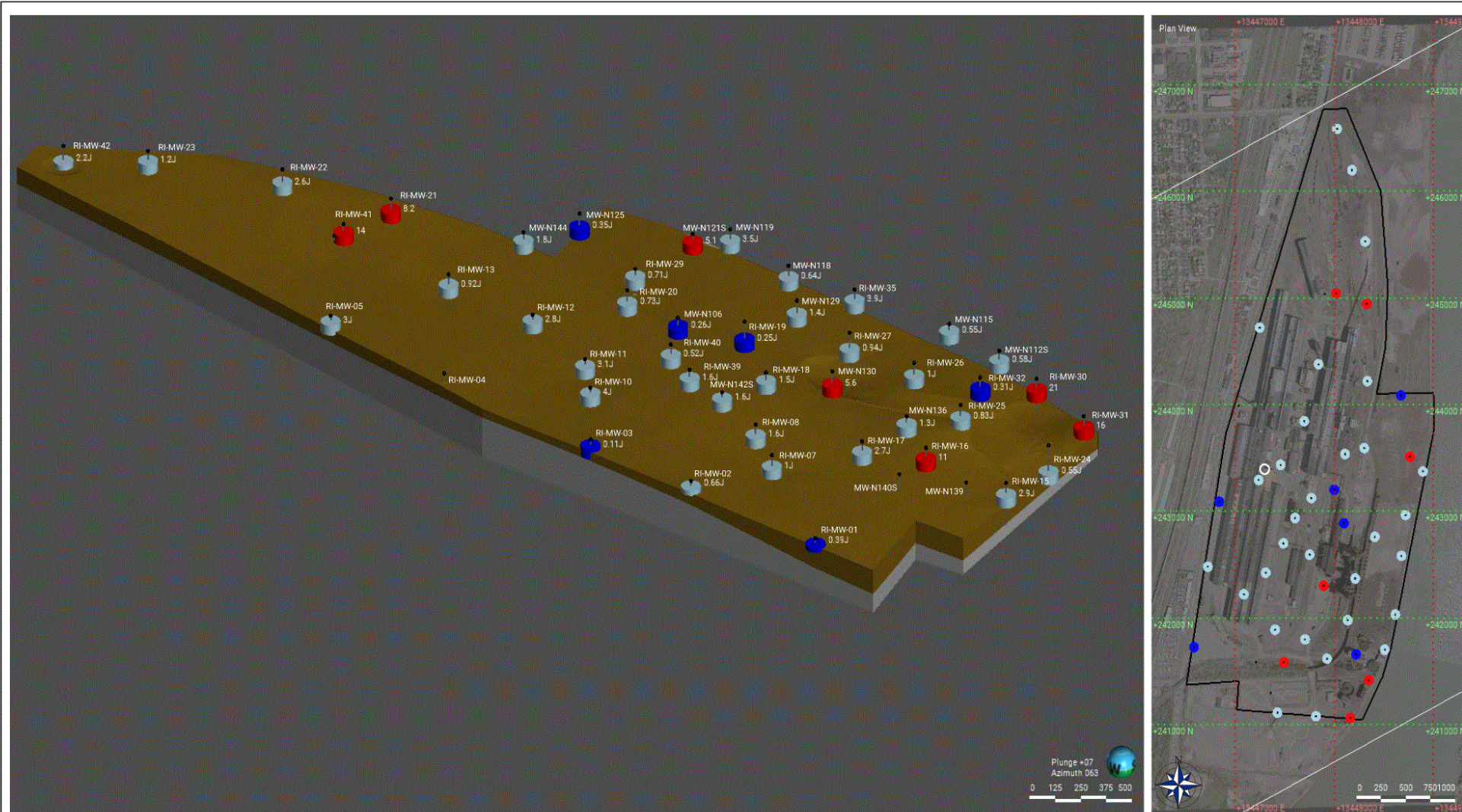
- Yellow dot: > 0.063
- Blue dot: < 0.063

Lithology

- Brown square: Clay
- Grey square: Bedrock

Figure 17
Groundwater Results - Mercury
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Groundwater Results - Vanadium



Project Action Limit (PAL):
4.5 micrograms per liter (µg/L)

Vanadium (µg/L)

- > 4.5
- > 0.45
- < 0.45

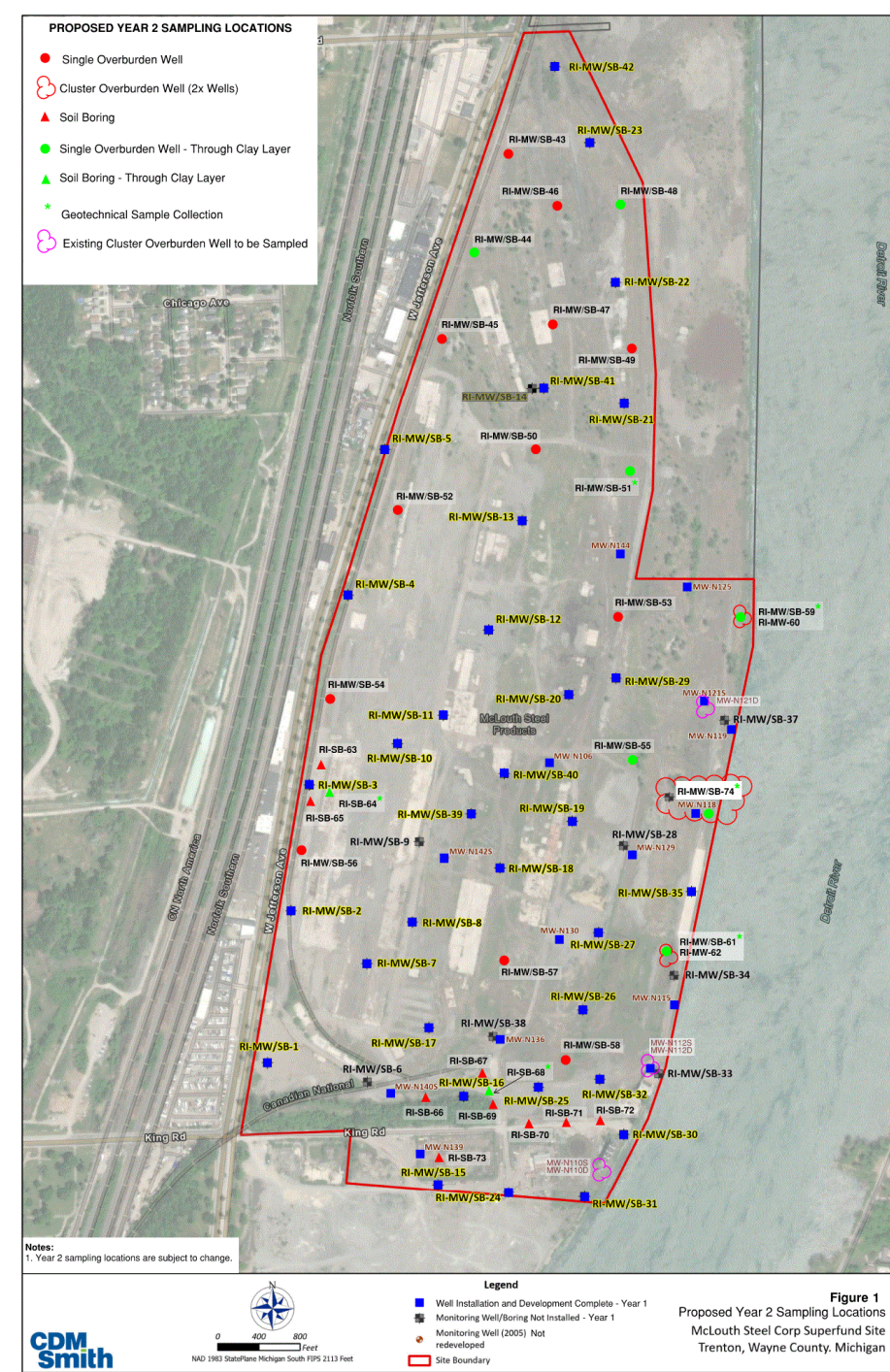
Lithology

- Clay
- Bedrock

Figure 18
Groundwater Results - Vanadium
McLouth Steel Corp Superfund Site
Trenton, Wayne County, Michigan

Year 2 Field Program - OU1 & 2

- 32 soil borings
- 19 additional monitoring wells
- Additional hydraulic conductivity testing
- Synoptic and long-term water level measurements
- Passive flux meter deployment
- 65 wells to be sampled including
 - 6 well clusters along the Trenton Channel
 - Analyses for soil and groundwater same as last year
 - VOCs, SVOCs, PCBs, D/F, PFAS, Metals, pH

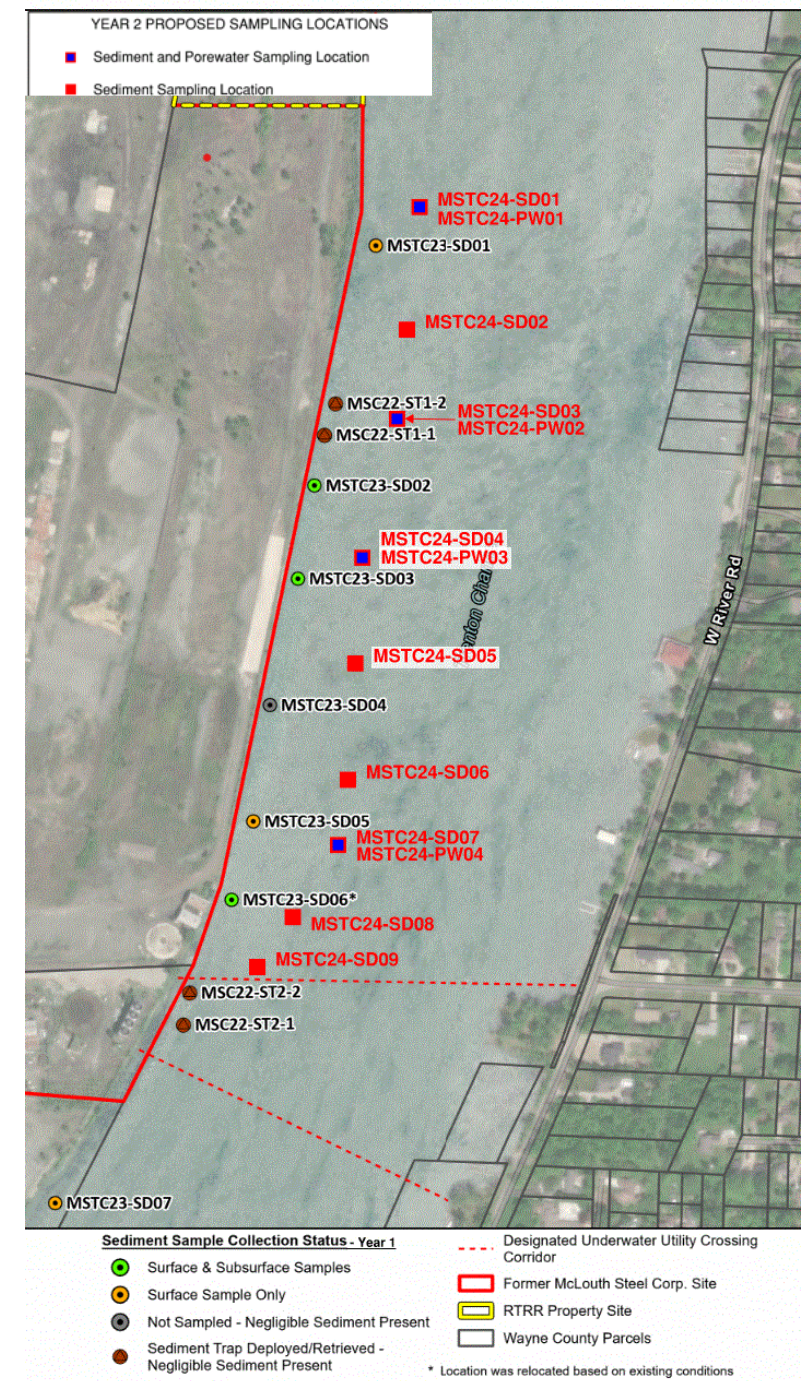


Boring, Well & Testing Rationale

- Provide greater geographic lithologic and chemical assessment/coverage
- Evaluate potential westerly groundwater flow
- Perform additional targeted hydraulic conductivity testing
- Evaluate clay aquitard effectiveness
- Provide transects of monitoring wells for mass discharge assessment
- Install/create shallow/deep clusters near Trenton Channel
- Deploy pressure transducers to assess groundwater /surface water interactions
- Deploy passive flux meters along channel to measure groundwater discharge

Year 2 Field Program – OU3

- Bathymetric Survey of Trenton Channel
 - Water depths and mapping of potential underwater features
- Additional Sediment Sampling
- Additional Sediment Trap Sampling
- Scope under review by GLNPO and EGLE



What's Next – General Schedule

- Fall 2024 - Year 2 Field Work
- 1st Quarter 2025 – Evaluation of Year 2 Data
- 2nd Quarter 2025 – Technical Memorandums
- Spring 2025 – Prepare and initiate Groundwater Monitoring Program
- Spring 2025 – Bedrock Aquifer Need Assessment
- Summer 2025 – Preparation of RI/FS

Agency Contacts

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- **McLouth Steel Websites**

- [CAG home page](#)

- <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0502434>



Thank you for your interest

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