Exhibit
1702

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REMEDY ASSESSMENT

MIDWEST GENERATION

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General Approach

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General Approach

1. **Regulatory Framework**
   - Federal/State CCR Surface Impoundments
   - Historic Fill Areas
2. **Background/site conditions and investigation**
   - Potential exposures to human and ecological receptors
   - Groundwater quality trends through statistical analysis
   - Evaluation of downgradient groundwater quality
3. **Remedial Assessment**
   - CCR Regulations/Illinois Act
   - Risk
   - Trend
   - Comparisons

1. Regulatory Framework

- **CCR Surface Impoundments**
  - Federal and State CCR Rules
    - Federal CCR Rules: 40 CFR 257
    - Illinois CCR Rules: 35 IAC 845
  - Board Orders
  - 2012 CCAs; GMZs/ELUCs
  - Ongoing data collection

- **Historic Fill Areas**
  - Illinois Groundwater Standards
  - Illinois SRP (TACO)
  - Board Orders
  - Illinois sub docket; Federal proposed fill rules
  - Lines of evidence

2. Background / Site Conditions

- **Previous investigations**
  - Hydrogeologic setting
  - Surrounding land use
  - Identification of potential receptors
  - Groundwater analytical results for historic and ongoing monitoring
- **Data analysis**
  - Evaluate risk
  - Evaluate data trends

Evaluation of Risk to Surface Water

- **Comparison of groundwater data to surface water standards**
  - 35 IAC Part 302 Illinois Water Quality Standards (WQS)
  - Illinois Water Quality Criteria (WQC) for surface water
    - Downgradient data compared to Illinois chronic WQS or if WQS not available, the Illinois chronic WQC
  - Comparisons performed for 40 CFR 257 Appendix III and Appendix IV
  - Average downgradient concentrations calculated
  - Potable well use

Groundwater Data Evaluation

- **Substantial quantity of groundwater quality data**
  - CCA Groundwater Monitoring
  - CCR Groundwater Monitoring
- **Included 40 CFR 257 Appendix III (detection) and Appendix IV (assessment) constituents**
- **Monitoring well locations**
  - Best represent groundwater quality after natural mechanisms of advection, dispersion, and attenuation
  - Approach consistent with TACO evaluation
  - Conservative evaluation

Statistical Trend Testing of Groundwater Analytes

- Mann-Kendall Test for Trend
- Referenced in **USEPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance,** March 2009
- Testing commonly employed to assess effectiveness of a groundwater remedy/corrective action
- Quantitative method of assessing upward/downward trends

3. Remedial Assessment Process

- Historic nature of CCR at Stations/mass
- Prior assessments
- CCR regulations for further control of surface impoundments
- Risk-based approach consistent with applicable regulations
- In absence of existing regulatory control for historic fill - risk based approach

Joliet 29 Station

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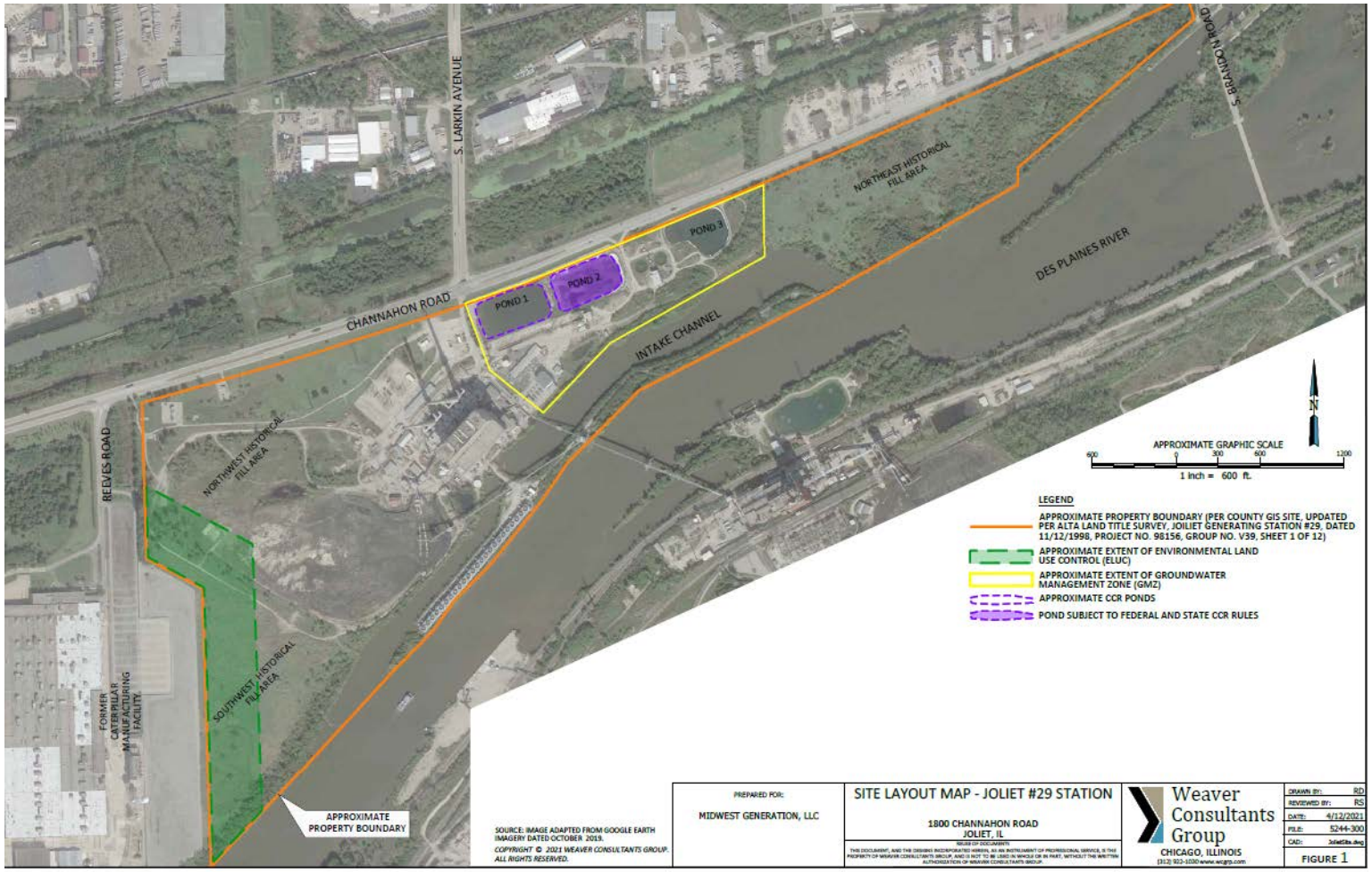
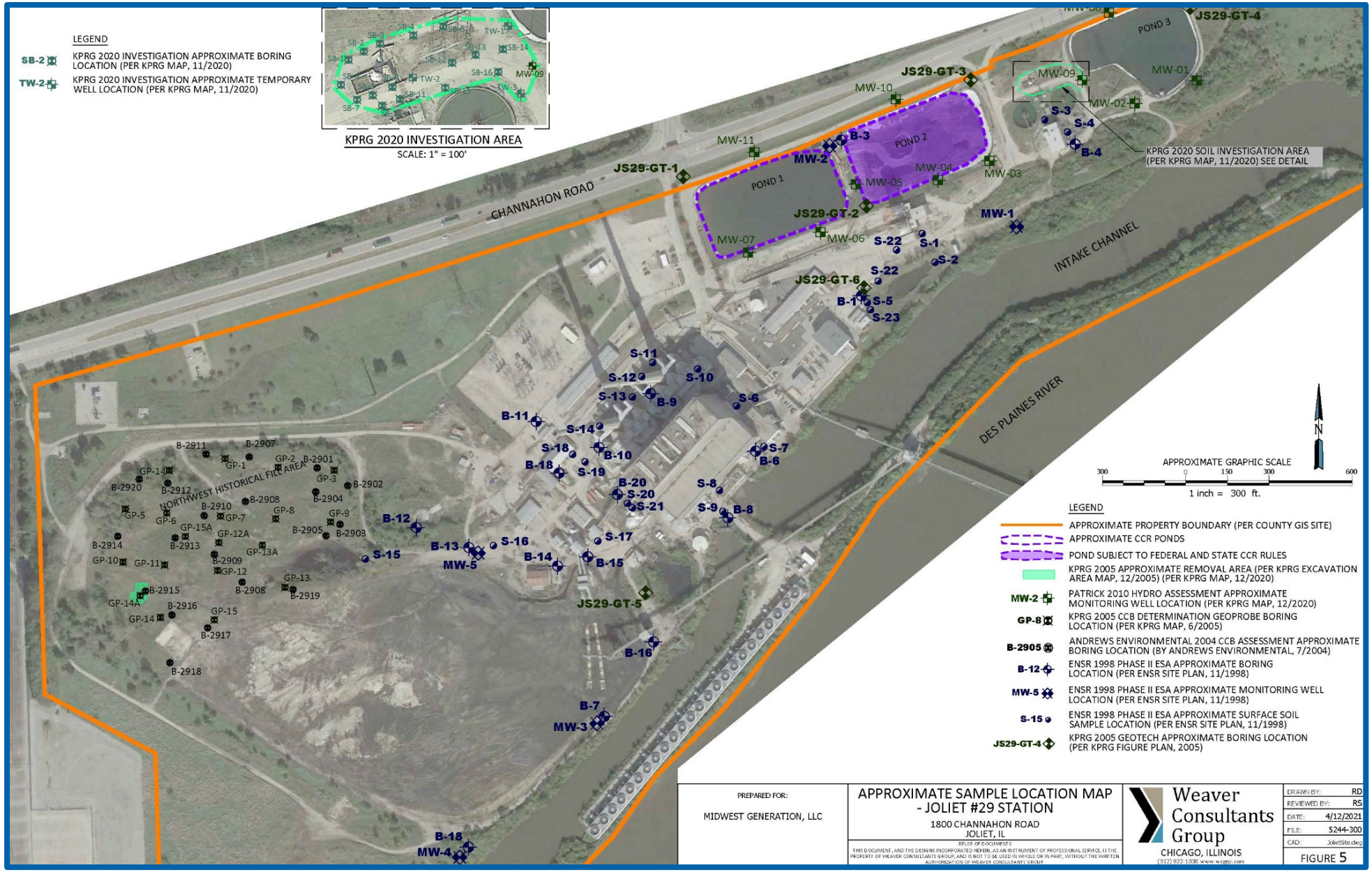
Joliet 29 - Background and Setting

- **Began operating in mid-1960s**
- **Acquired by MWG in 1999**
- **Ceased burning coal and moved to natural gas in 2016**
- **Located in predominantly Industrial Area**
- North - Channahon Rd./vacant land/Industrial-Commercial facilities
- South - Des Plaines River and Joliet 9 Generating Station
- East - Brandon Rd. (Lock and Dam on Des Plaines River)
- West - Former Caterpillar Manufacturing (prior SRP Site)
- **Scheduled to cease burning natural gas in 2023**



Joliet 29

Investigation Locations



Joliet 29 - Investigations

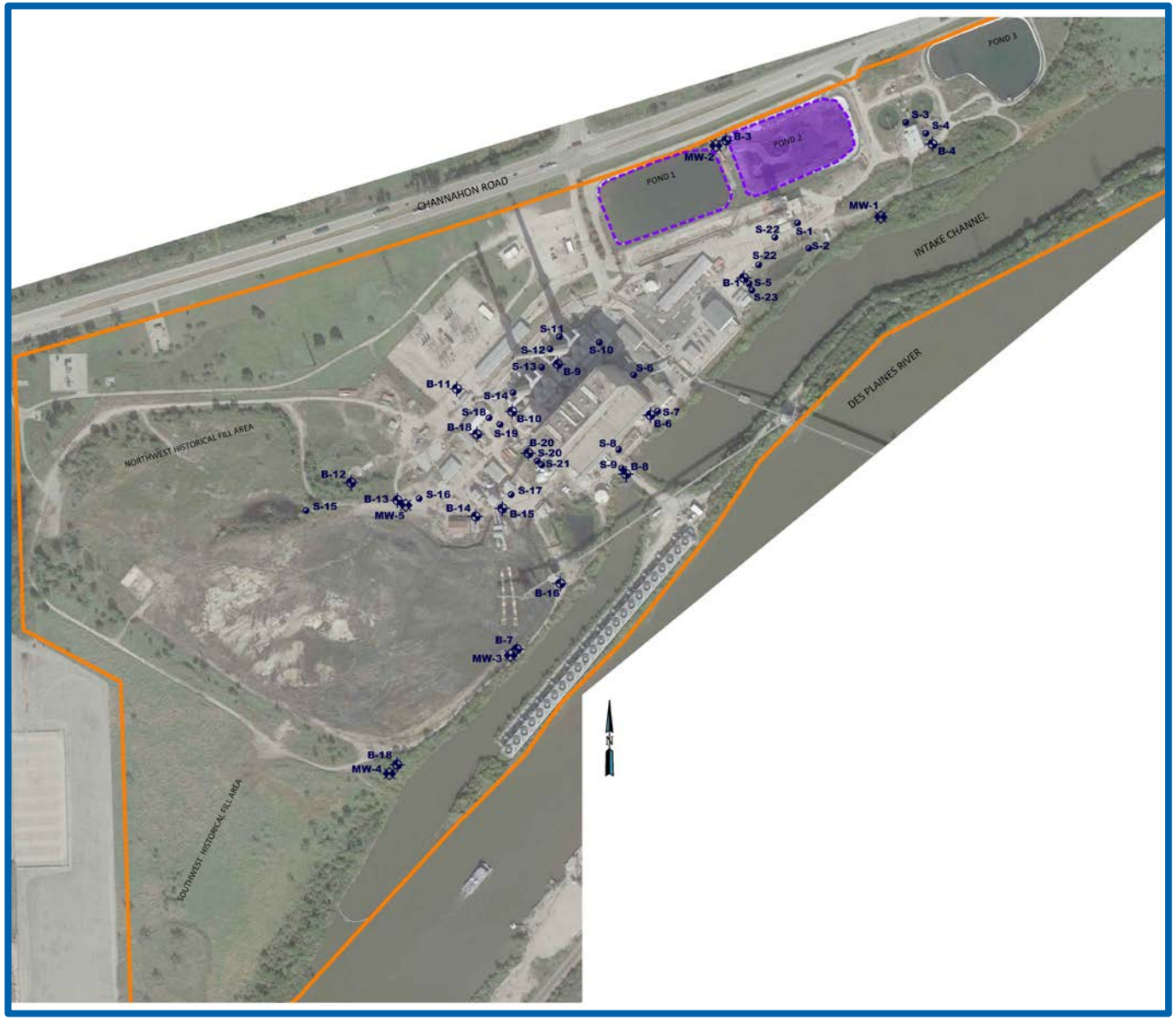
- **1998** Phase II ESA by ENSR
- **2004** CCB Preliminary Investigation by Andrews
- **2005** Geotechnical Investigation by KPRG
- **2005** Follow-Up CCB Investigation by KPRG
- **2005** Supplemental Delineation and Remediation near GP-14A by KPRG
- **2010** Hydrogeologic Assessment by Patrick Engineering
- **2020** Investigation Near MW-09 by KPRG
- Ongoing groundwater monitoring under CCR Rules/CCA
- Information concerning NE Historic Fill Area
- Des Plaines River assessment

Joliet 29 –
1998 Phase II ESA

- **17 borings, 5 MWs, 23 surface soil samples, 6 sediment samples collected**
- **MW-3 and MW-5:** none of 8 RCRA metals at concentrations above IL Class 1 Groundwater Standards
  - Insufficient groundwater to sample at MW-4

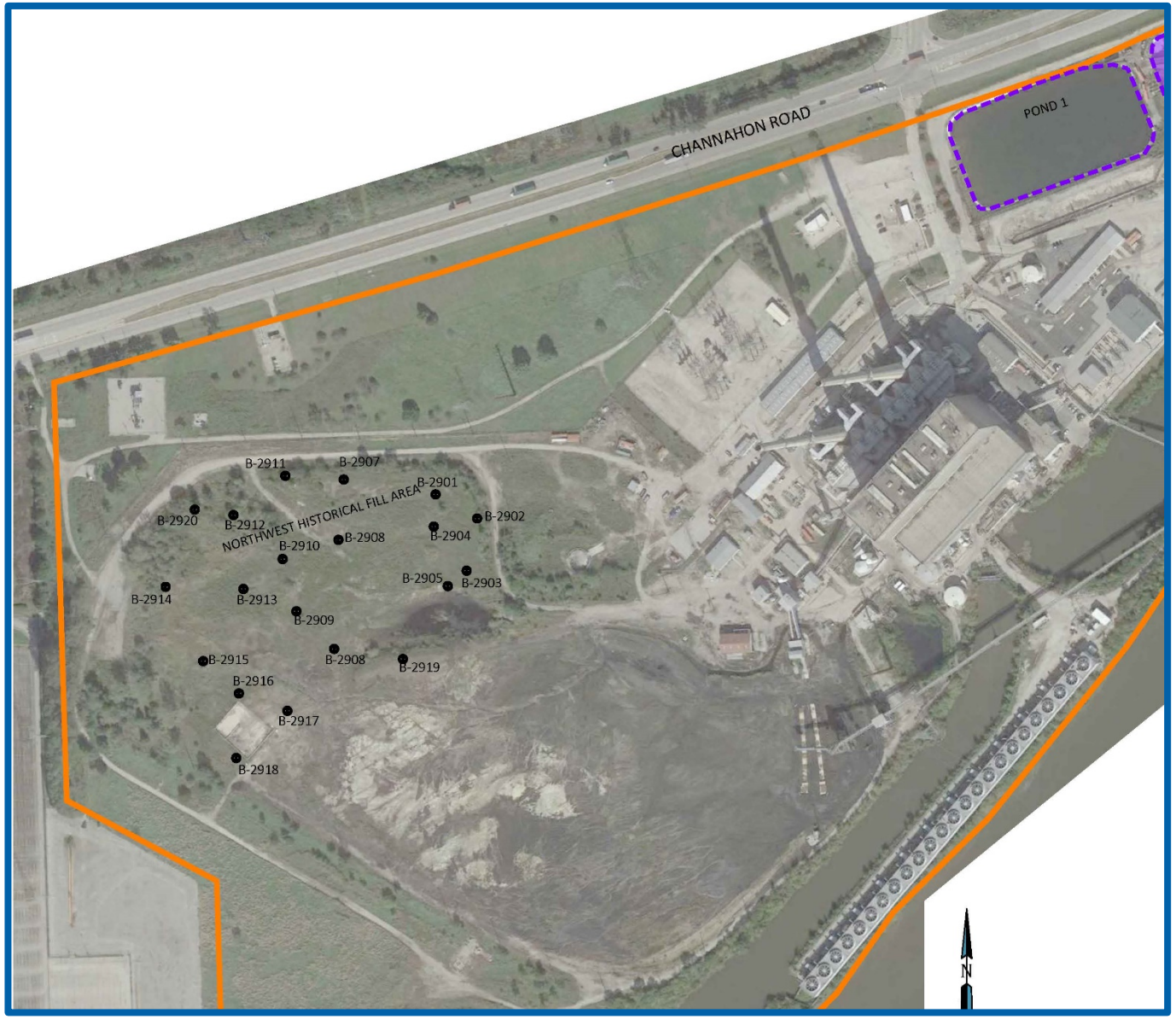
CONCLUSIONS:

- Groundwater ingestion not a potential exposure pathway
- Based on industrial land use, low potential for human exposure to constituents of concern
- No requirement under Illinois environmental law to further investigate or remediate property



Joliet 29 – NW Area - 2004 Preliminary CCB Investigation

- **Study feasibility of CCB demonstration -** NW Fill Area
- **Composite sample from 20 grab samples** over aprox.13 ac. area
- **Analyzed for NLET metals and "Code R" parameters** (TCLP metals, VOCs/SVOCs, ignitability, reactive CN and sulfide)
- **No leachable NLET** (ASTM D3987-85) metals concentrations above Class I Groundwater Standards
- **Material characterized as non-hazardous** for disposal purposes
- **CCB classification deemed feasible**



Joliet 29 – 2005 Geotechnical Investigation

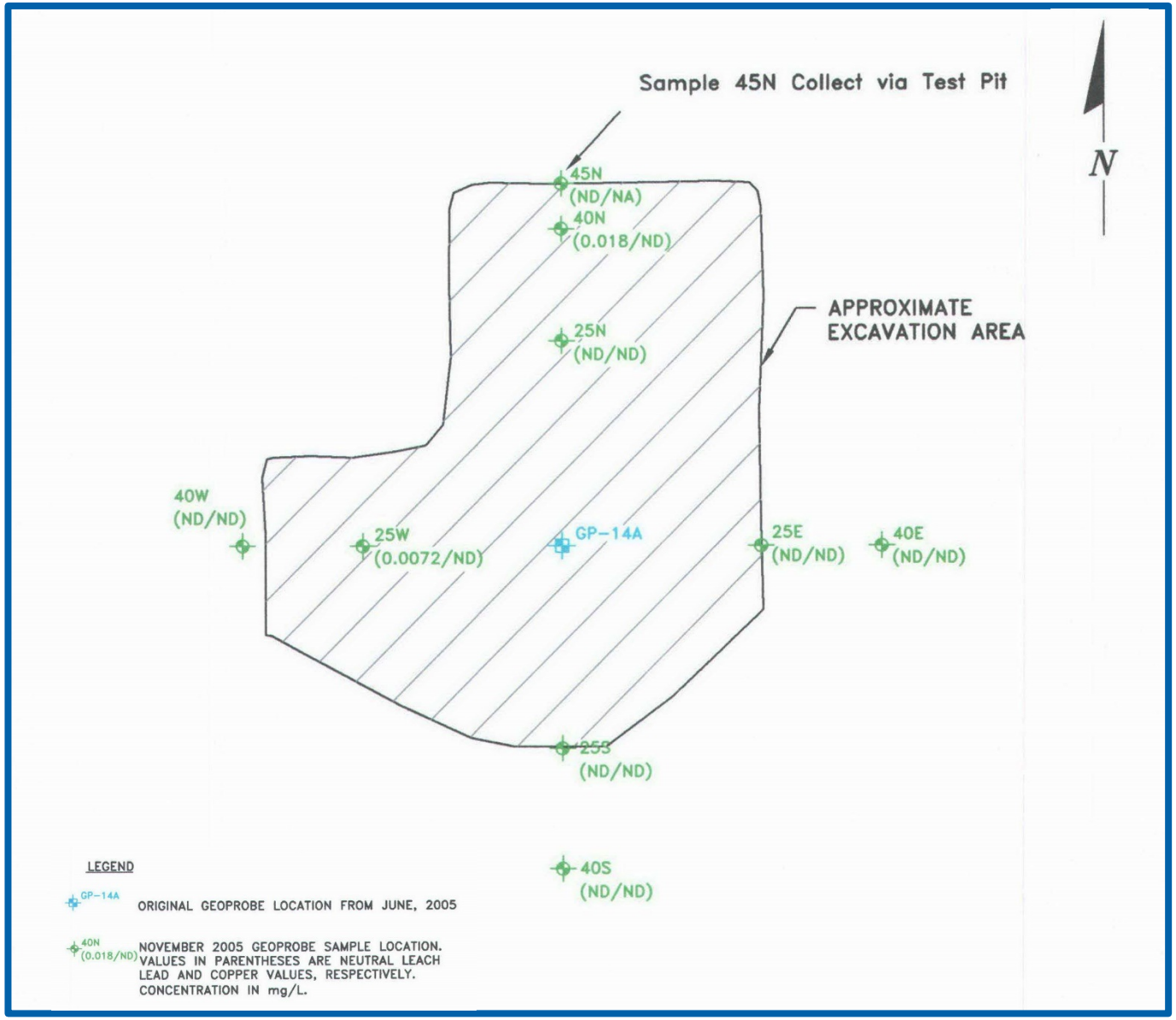
- Provide information on **physical characteristics of soils**
- **Six soil probes**
- **Bedrock encountered** at one boring at 15 ft. below ground surface

Joliet 29 NW area - 2005 2nd CCB Investigation

- **15 Geoprobes**
- **Coal ash encountered** consistent/homogeneous, interlayered fly ash/bottom ash
- **Composite samples collected** from vertical profile at each location
- **All but one area considered CCB,** based on statistical analysis of NLET data in comparison to Class I groundwater quality standard (GWQS)
- **NLET concentrations of copper/lead >** Class I GWQS at one location (GP-14A)
- **GP-14A excluded** from beneficial use designation and removed

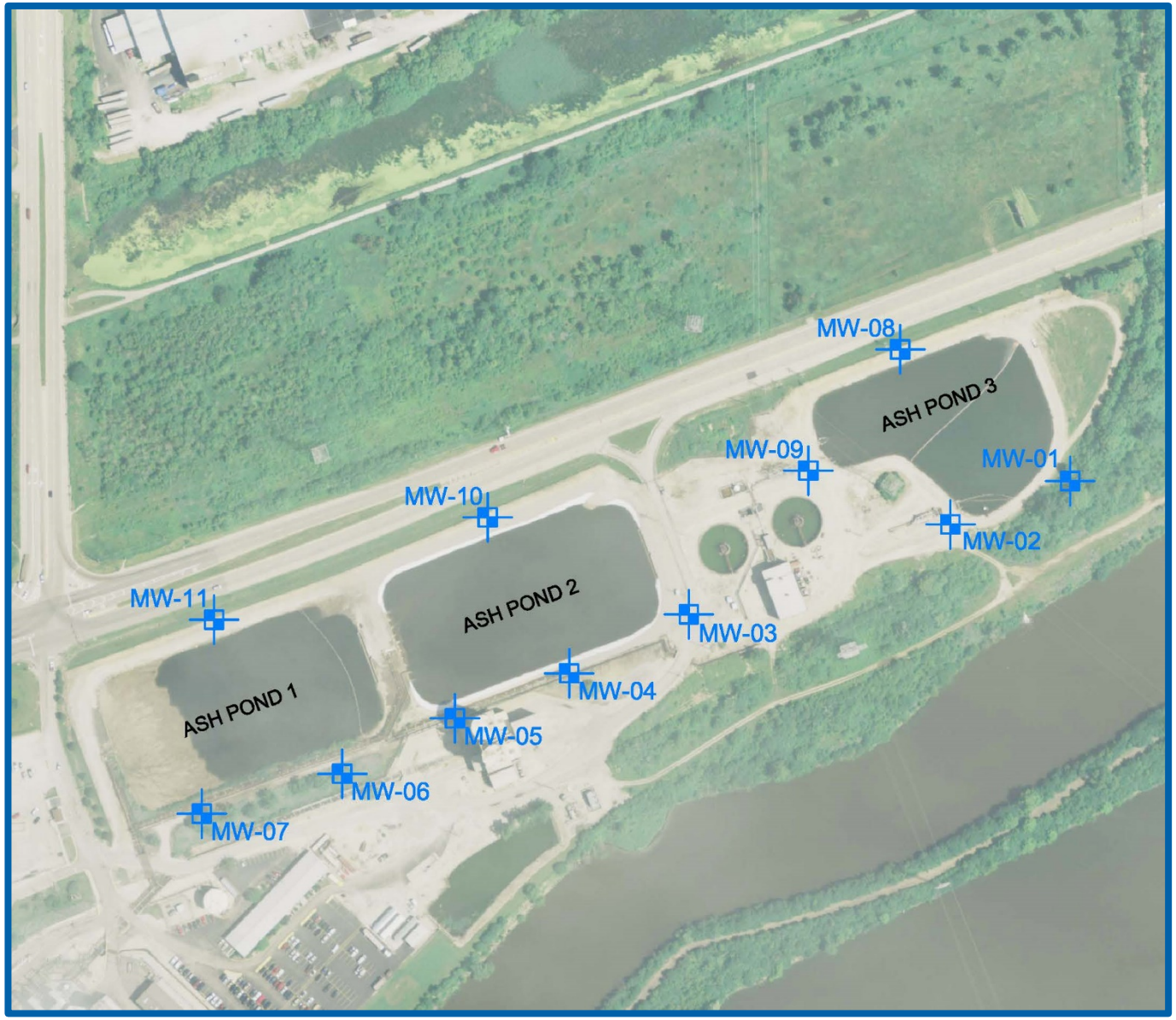
Joliet 29-
2005 Remediation of GP-14A Area

- **Additional delineation activities** N-S-E-W of GP-14A
- **Composite samples** from vertical interval submitted for **NLET copper/lead**
- **52 truckloads excavated** hauled to permitted landfill (1,062.88 tons)



Joliet 29 – 2010 Hydrogeologic Investigation

- **Voluntary investigation,** pre-CCR regulations
- **Installation of 11 MWs**
- **Groundwater samples collected**
- **11 potential CCR-related analytes not detected**
- **Boron concentrations below Part 620 Class 1 GWQS**
- ***Key CCR indicator***
- **Chloride present upgradient at the Class 1 GWQS (200 mg/L)**

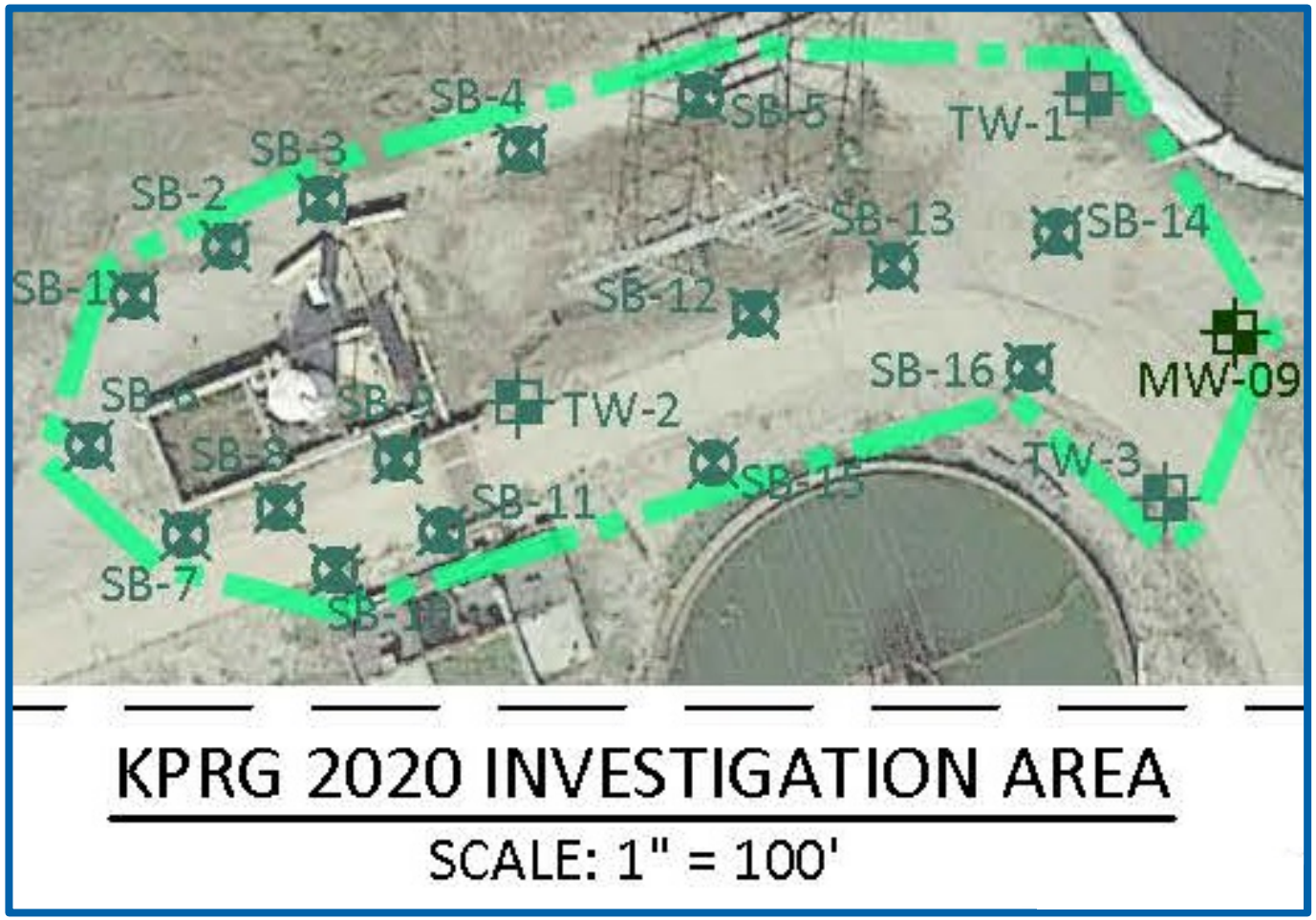


Joliet 29 – 2010 Hydrogeologic Investigation

- **Water well search (2500 ft radius):**
  - No potable wells downgradient of station on north side of Des Plaines River
- **Uppermost groundwater unit at depths ranging from 29 to 34 feet bgs**
- **Direction of groundwater flow towards the Des Plaines River**
  - Some groundwater flow from NE towards river

Joliet 29 – 2020 Investigation Near MW-09

- **18 soil probes, soil samples analyzed for sulfate, Fe, Mn**
- **Only area identified by the Board with Class 1 GWQS exceedances**
- **No coal ash identified in probes**
- **pH of groundwater at MW-09 is acidic**
- **CCR materials commonly exhibit basic pH** (LEAF data)
- **Acidity from oxidation of natural sulfide minerals forms sulfuric acid**
  - TDS and sulfate in soil mobilized to the groundwater by this acidity



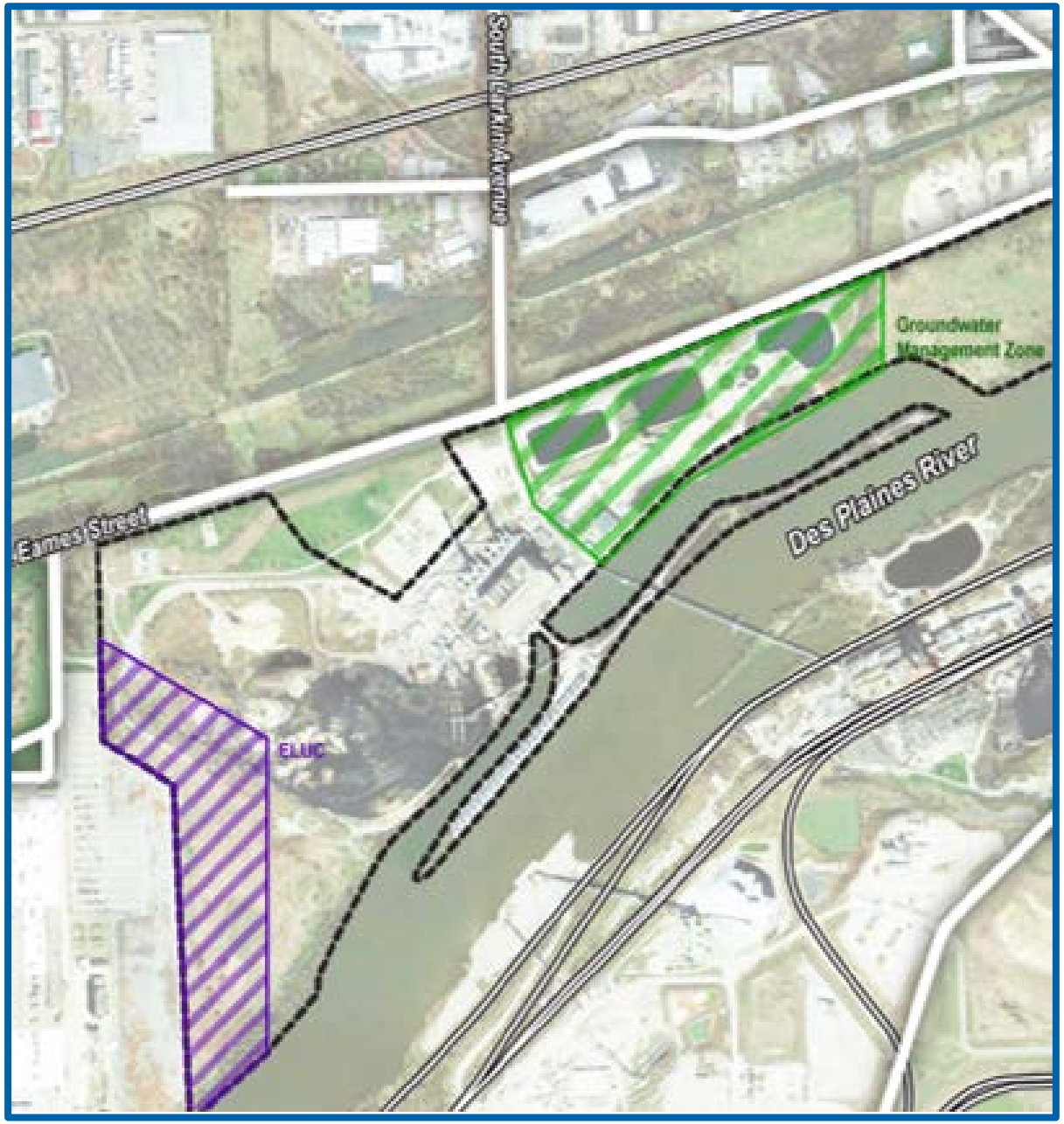
Joliet 29 –
Ongoing Groundwater Monitoring

- **12 monitoring wells installed around ponds**
- **Federal Appendix III (detection) constituents**
- **Federal Appendix IV (assessment) constituents**
- **Constituents required by IL CCR Rules (both detection and assessment constituents)**
- **Quarterly monitoring since CCAs implemented in 2012**
- **Sampling/analysis of 34 constituents 4x per year x 12 MWs**

Joliet 29 –
NE Historic Fill Area

- **Annual inspections of existing topsoil/vegetative cover performed in accordance with NPDES Permit**
  - If erosional features identified, they are repaired
- **KPRG reports no soil staining or seeps along riverbank,**
- **Heavy vegetation/no stressed vegetation**
- **Groundwater Flow**
- **Des Plaines River assessments**

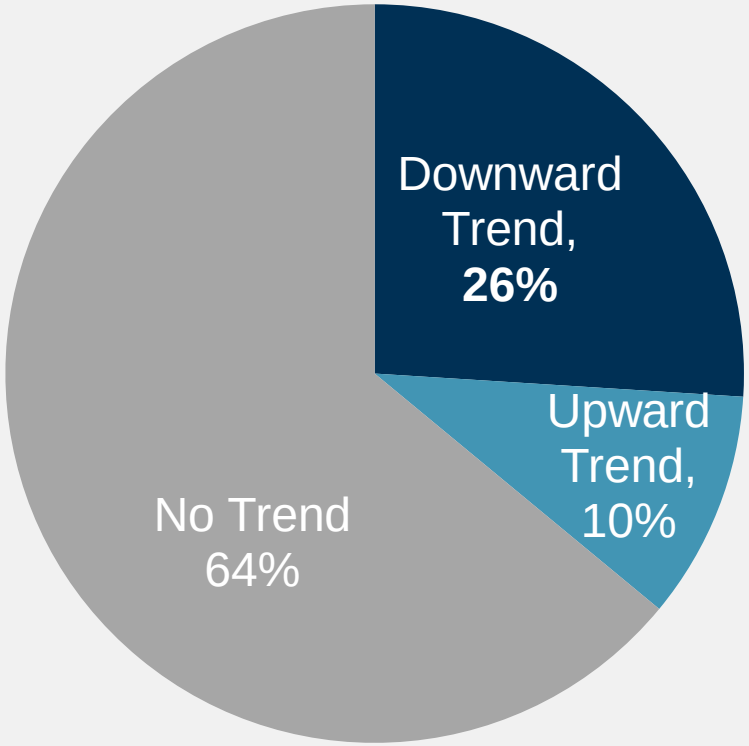
Joliet 29 -
GMZ and ELUC



Joliet 29 -
Data Analysis - Potential Receptors

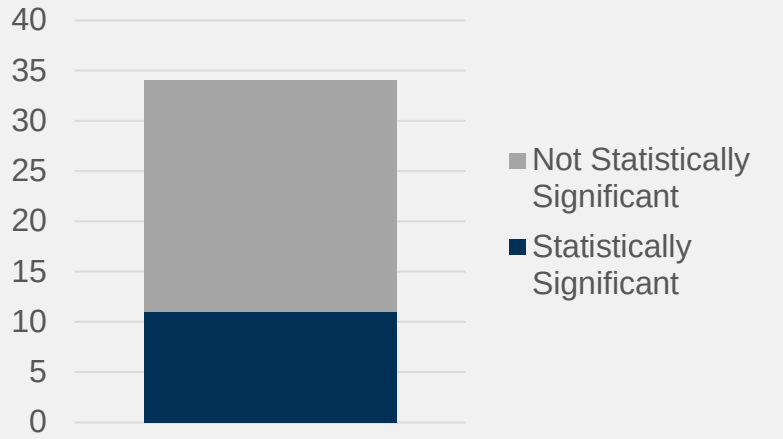
- **Onsite and Surrounding Industrial Land Use**
  - Industrial land use expected onsite into foreseeable future
  - Channahon Rd./industrial facilities to north
  - Former Caterpillar Manufacturing to west (SRP site)
- **No potable use of groundwater downgradient of Station**
  - Potable well search in Patrick report on 2010 Hydrogeologic Investigation (2500 ft radius)
  - City of Joliet in process of converting to Lake Michigan water as potable source
  - On-site potable wells prohibited by ELUC
  - GMZ established
- **Potential ecological receptors**
  - Des Plaines River Downgradient/South/Southeast of Station

Joliet 29 - Groundwater Trend Testing

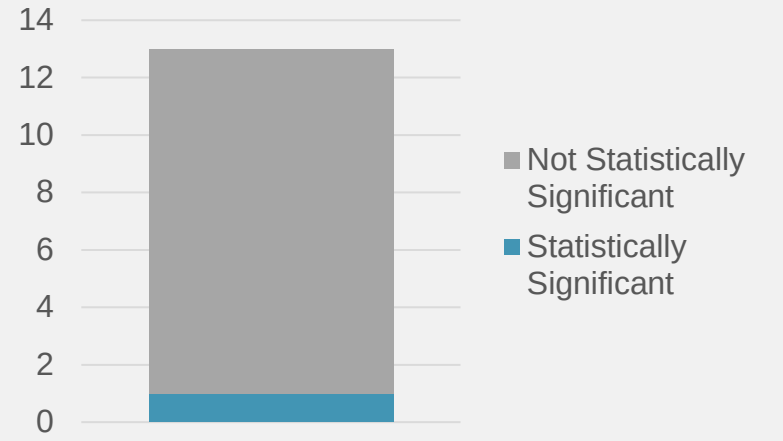


- Trend testing at downgradient MWs indicates improving groundwater quality over long term.
- No well with statistically significant upward trend has ever exceeded a Class I GW standard.

DOWNWARD TREND

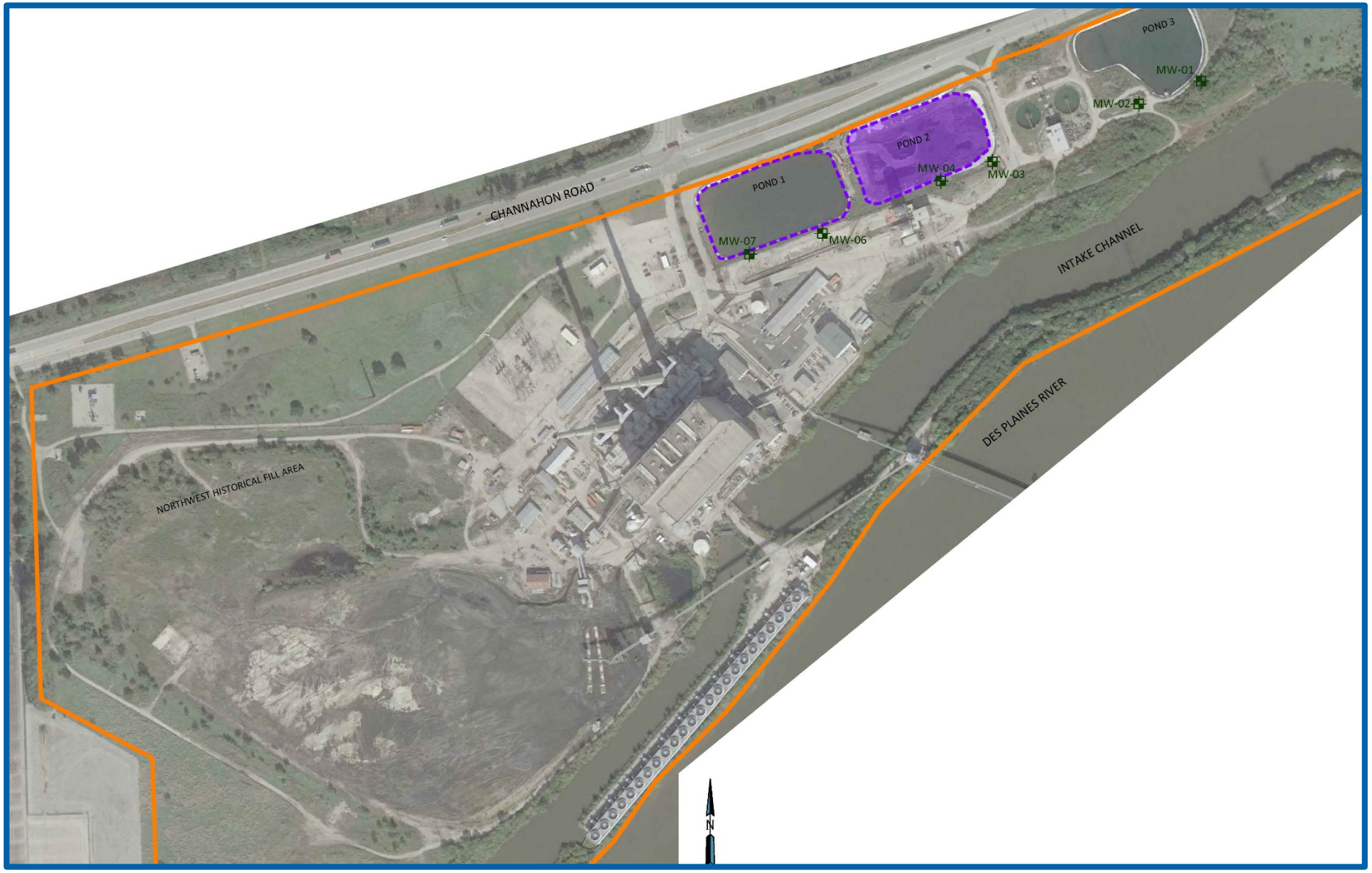


UPWARD TREND



Joliet 29

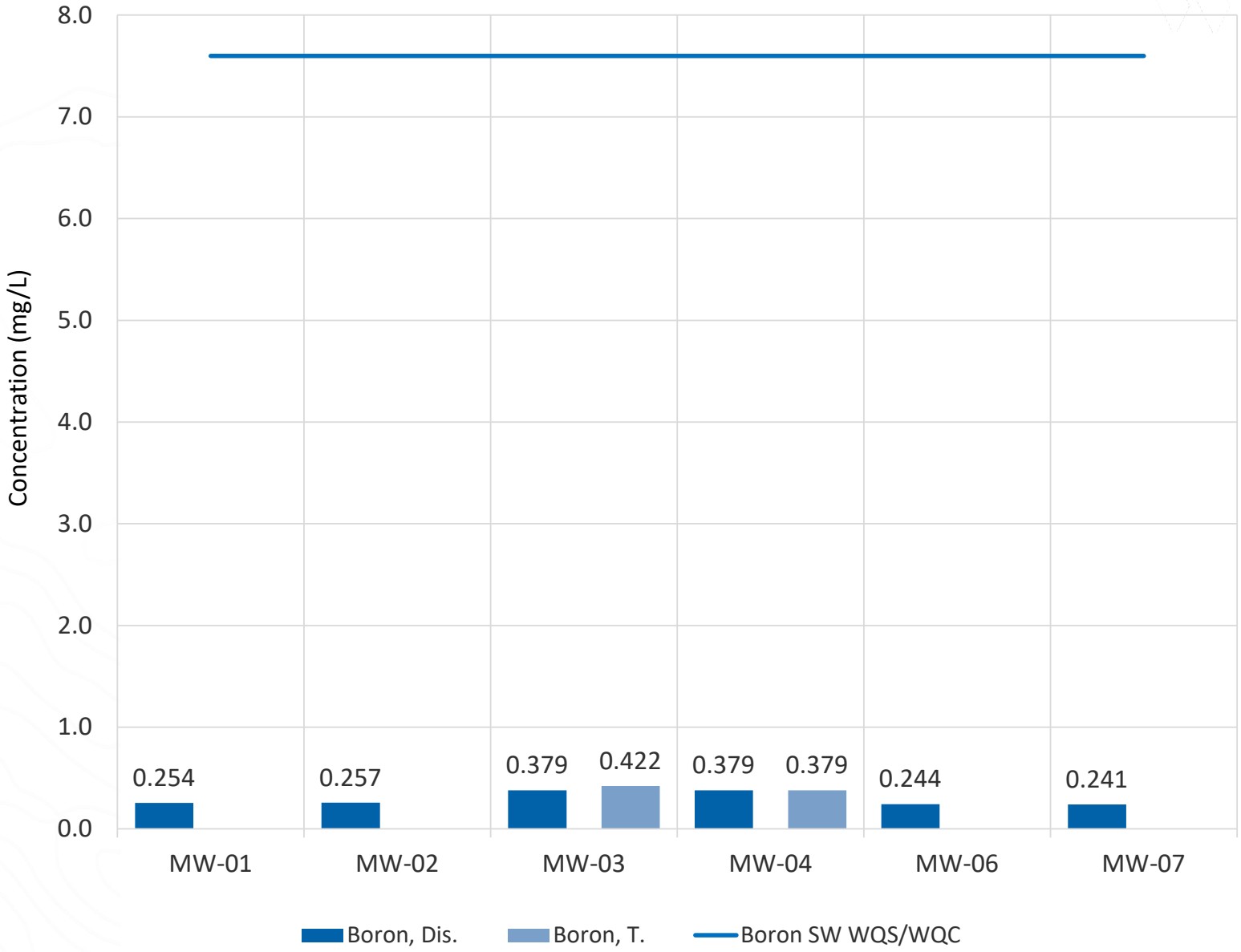
Potential Groundwater Impact to Surface Water Analysis



Joliet 29 -
Groundwater to Surface Water Analysis

- **Average groundwater concentrations from December 2010 to Q4 2020 as calculated by Sanitas™ Software**
- **Non detect (ND) 75% or more samples;** reporting limit (RL) presented as average, otherwise RL used in calculations (conservative)
- **CCR constituents from Appendices III and IV to 40 CFR Part 257**
- **Surface Water Standard (SWS)** obtained from the Illinois General Use Water Quality Standards (WQS) as defined in 35 IAC 302, Subpart B or the Illinois Water Quality Criteria (WQC) - if no WQS.
- No groundwater concentrations at downgradient monitoring wells exceeded the IL Water Quality Standard (WQS)/Water Quality Criteria (WQC)

Joliet 29: Average **Boron in Groundwater** Compared to Surface Water Standards



Joliet 29 Station - Summary

- **Ponds not adversely impacting groundwater**
  - No CCR constituents consistently present at concentrations > Class 1 GWQS related to the ponds
- **One identified area (MW-09) investigated**
- Trend analysis indicates **groundwater concentrations decreasing and expected to continue/below Class 1**
- **No unacceptable risk posed** to onsite or offsite receptors at Joliet 29 Station
- **No impacts to adjacent Des Plaines River**
- **Groundwater at depth**
- NW area meets CCB; SW area monitoring wells
- NE area lines of evidence

Joliet 29 Station - Summary

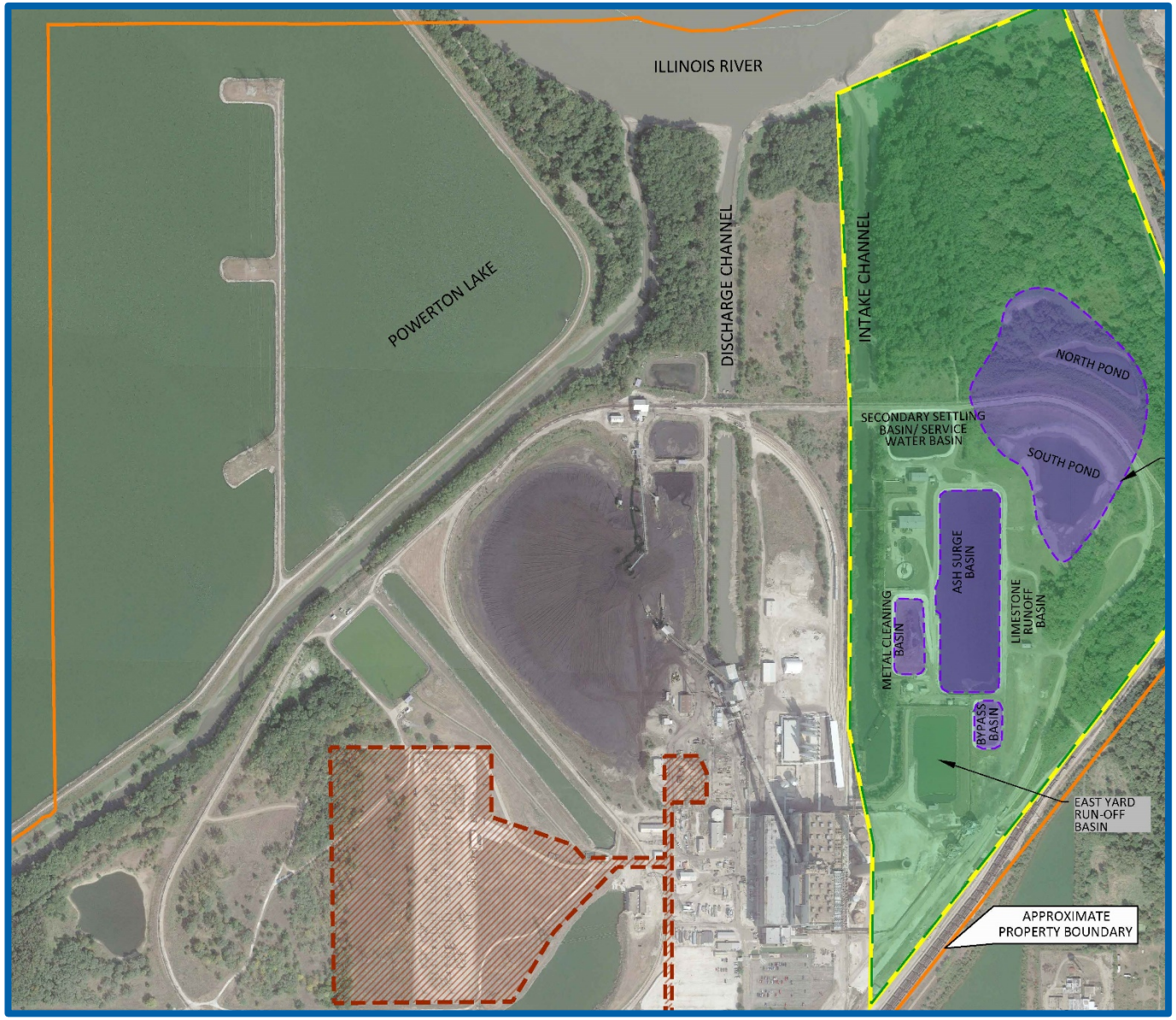
- **Continue to follow Federal/State CCR Rules**
- **Continue groundwater monitoring as required by CCR Rules per GMZ**
- **Comply with potential new federal or state regulations for historic fill areas**
- **Close Remaining Impoundment**

Powerton Station

Weaver Consultants Group

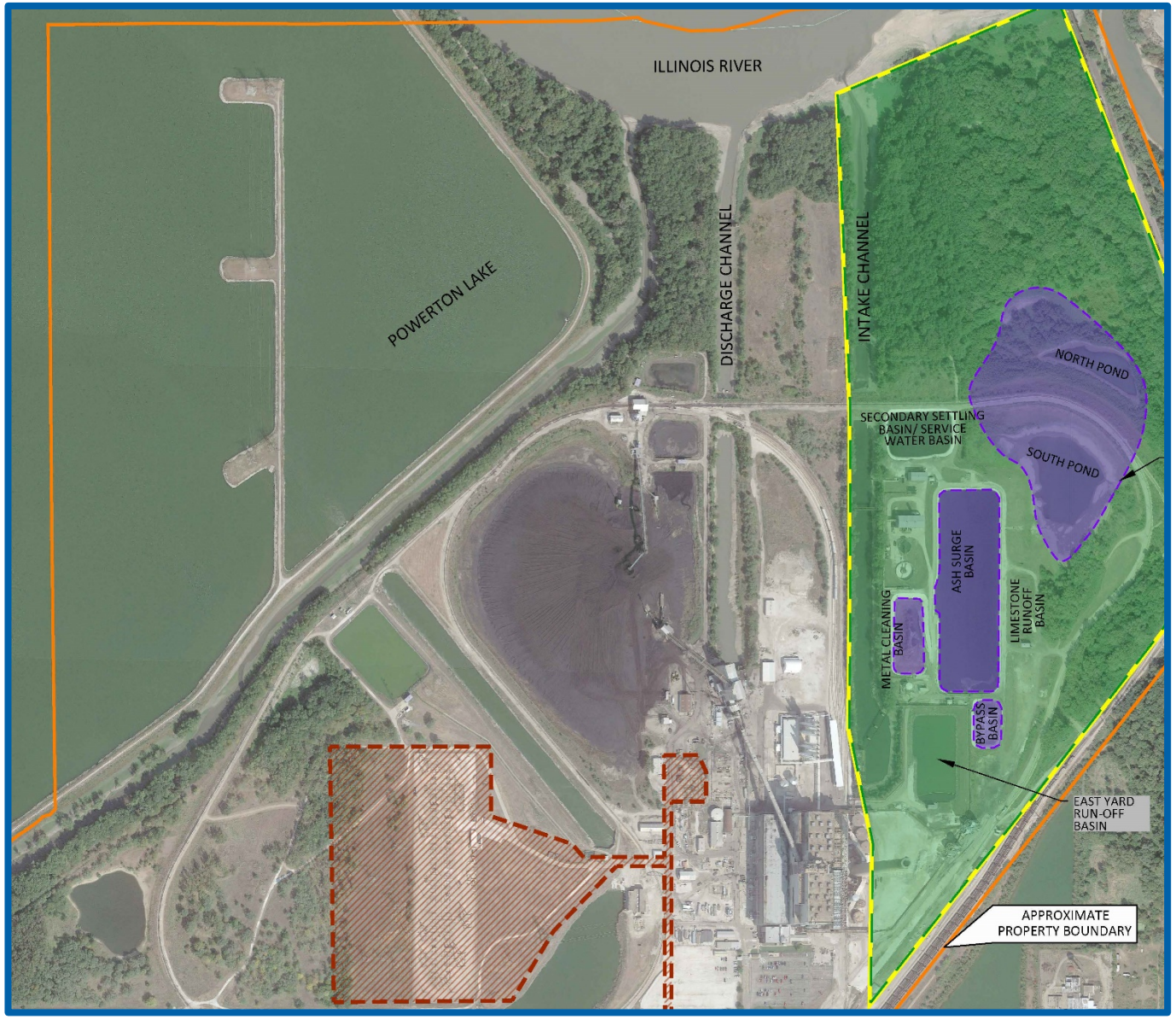
Powerton Station – Background + Setting

- **Began operating in 1920s**
- **Acquired by MWG in 1999**
- **Bordered by:**
  - **North –** Illinois River
  - **South -** Agricultural
  - **East –** mostly industrial/some residential
  - **West -** Powerton Lake, & Wildlife Area
- **Impoundments:**
  - Ash Surge Basin (ASB)
  - Ash Bypass Basin (ABB)
  - Metal Cleaning Basin
  - Secondary Ash Basin/Service Water Basin
  - Former Ash Basin (FAB)
  - East Yard Runoff Basin
  - Limestone Runoff Basin



Powerton – Historic Fill Area

- **Just one area mentioned by the Board**
- **Area south of Bypass Basin**
  - Cinders temporarily stored in the winter
  - Removed by MWG within 2-3 months of placement



Powerton - Investigation Locations

LEGEND

APPROXIMATE PROPERTY BOUNDARY (PER COUNTY GIS SITE)

PROPERTY NOT OWNED BY MWG

APPROXIMATE CCR PONDS

POND SUBJECT TO FEDERAL AND/OR STATE CCR RULES

NOTE: ASH SURGE BASIN, BYPASS BASIN, AND FORMER ASH BASIN ARE SUBJECT TO FEDERAL AND STATE CCR RULES. METAL CLEANING BASIN IS SUBJECT TO STATE CCR RULES.

MW-2 — PATRICK 2010 HYDRO ASSESSMENT/KPRG 2012-2019 CCR APPROXIMATE MONITORING WELL LOCATION (PER KPRG MAP, 12/2020)

B-12 — ENSR 1998 PHASE II ESA APPROXIMATE BORING LOCATION (PER ENSR SITE PLAN, 11/1998)

MW-5 — ENSR 1998 PHASE II ESA APPROXIMATE MONITORING WELL LOCATION (PER ENSR SITE PLAN, 11/1998)

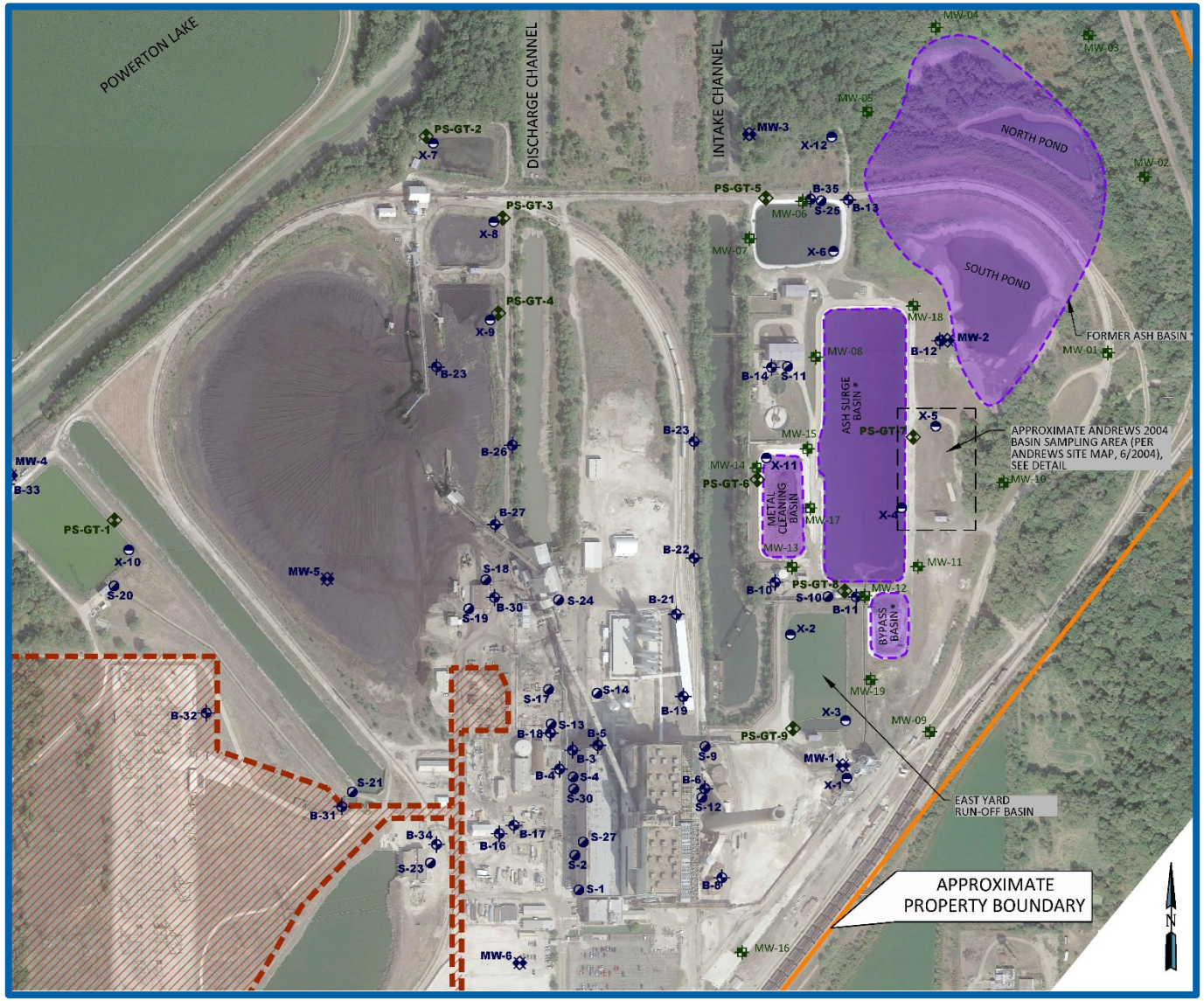
S-15 — ENSR 1998 PHASE II ESA APPROXIMATE SURFACE SOIL SAMPLE LOCATION (PER ENSR SITE PLAN, 11/1998)

X-8 — ENSR 1998 PHASE II ESA APPROXIMATE SEDIMENT SAMPLE LOCATION (PER ENSR SITE PLAN, 11/1998)

ANDREWS 2004 BASIN SAMPLING APPROXIMATE TEST PIT LOCATION (PER ANDREWS SITE MAP, 6/2004)

PS-GT-4 — KPRG 2005 GEOTECH APPROXIMATE BORING LOCATION (PER KPRG FIGURE PLAN, 2005)

NOTE:
* ASH AND WATER SAMPLES COLLECTED FROM THE BYPASS BASIN AND ASH SURGE BASIN IN 2018 AND 2019 AS PART OF 2019 AND 2020 KPRG ASDs.



Powerton - Investigations

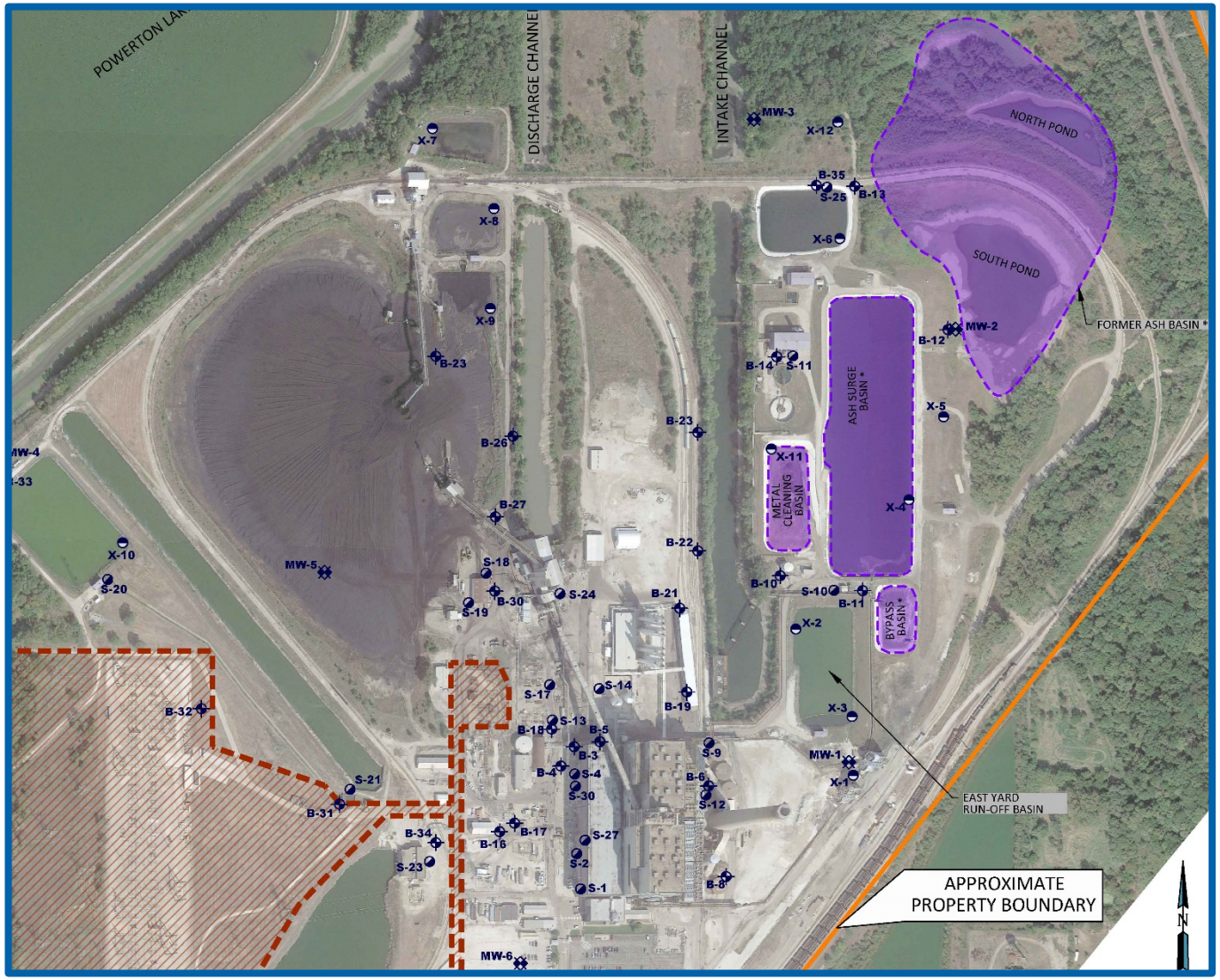
- **1998** Phase II Environmental Site Assessment by ENSR (due diligence, prior to MWG acquisition of station)
- **2005** **Geotechnical Investigation by KPRG**
- **2010** **Hydrogeologic Assessment by Patrick Engineering**
- **Ongoing groundwater monitoring under CCR Rules and CCA**

Powerton – 1998 Phase II ESA

- **28 soil borings, 6 MWs, 17 surface soil samples, 12 sediment samples**
- **MW-1 and MW-2 (near East Yard Runoff Basin and Former Ash Basin):** no RCRA Metals above Class I GWQS

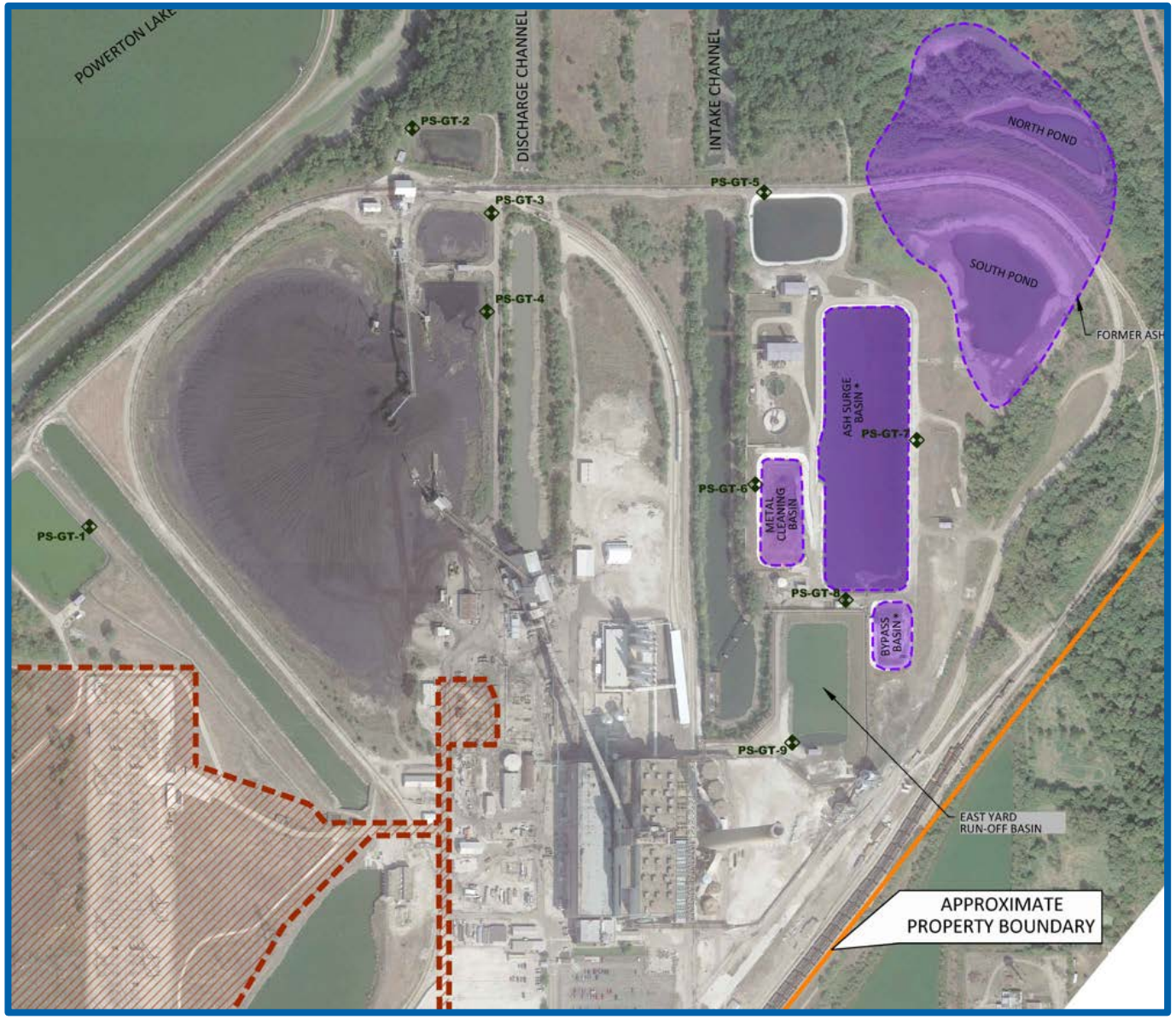
Conclusions:

- Groundwater ingestion not a potential exposure pathway
- Based on industrial land use/low potential for human exposure
- No requirement under Illinois environmental law to further investigate or remediate this property



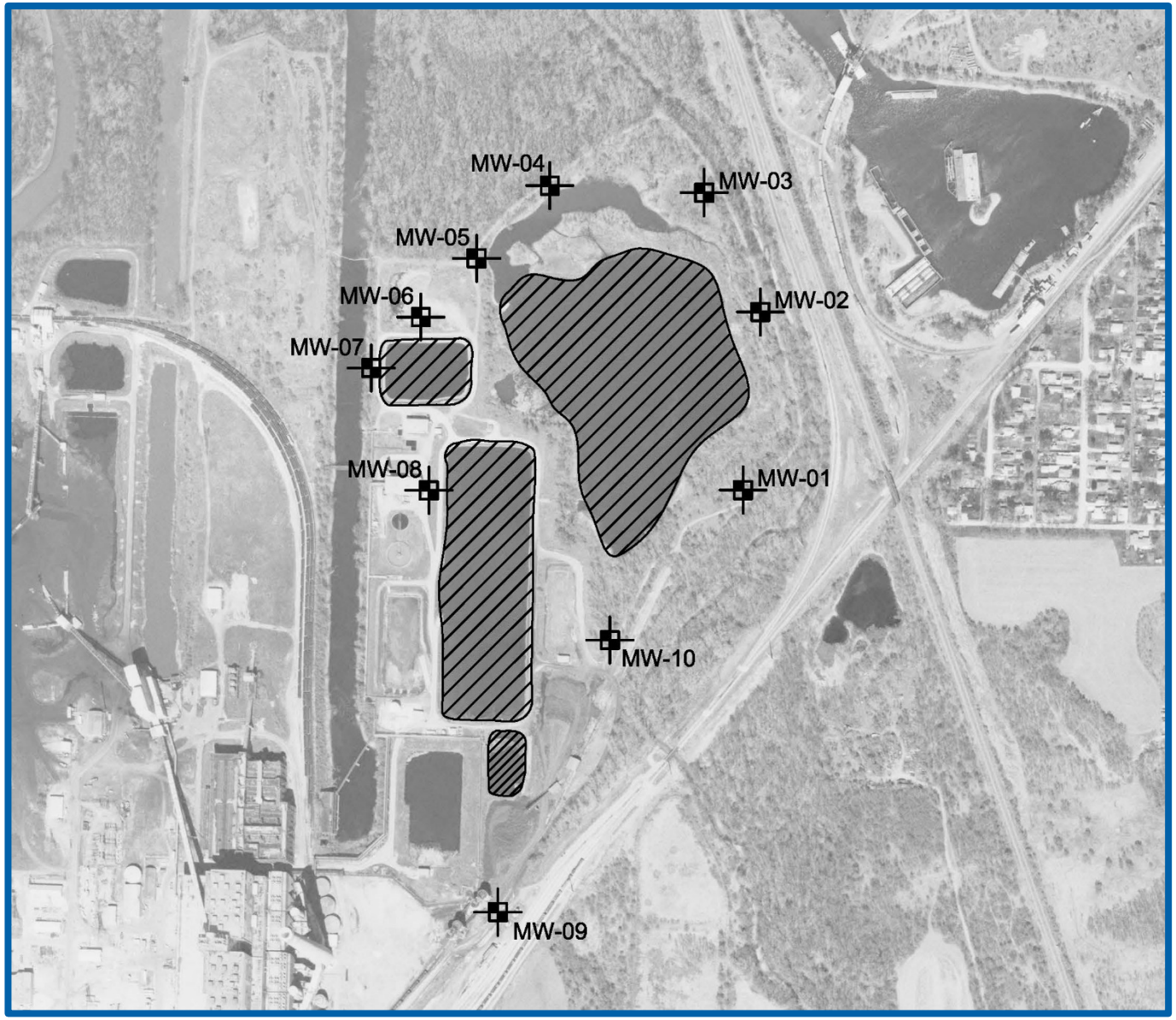
Powerton – 2005 Geotechnical Investigation

- **Provide information on physical characteristics of soils**
- **Nine soil probes**



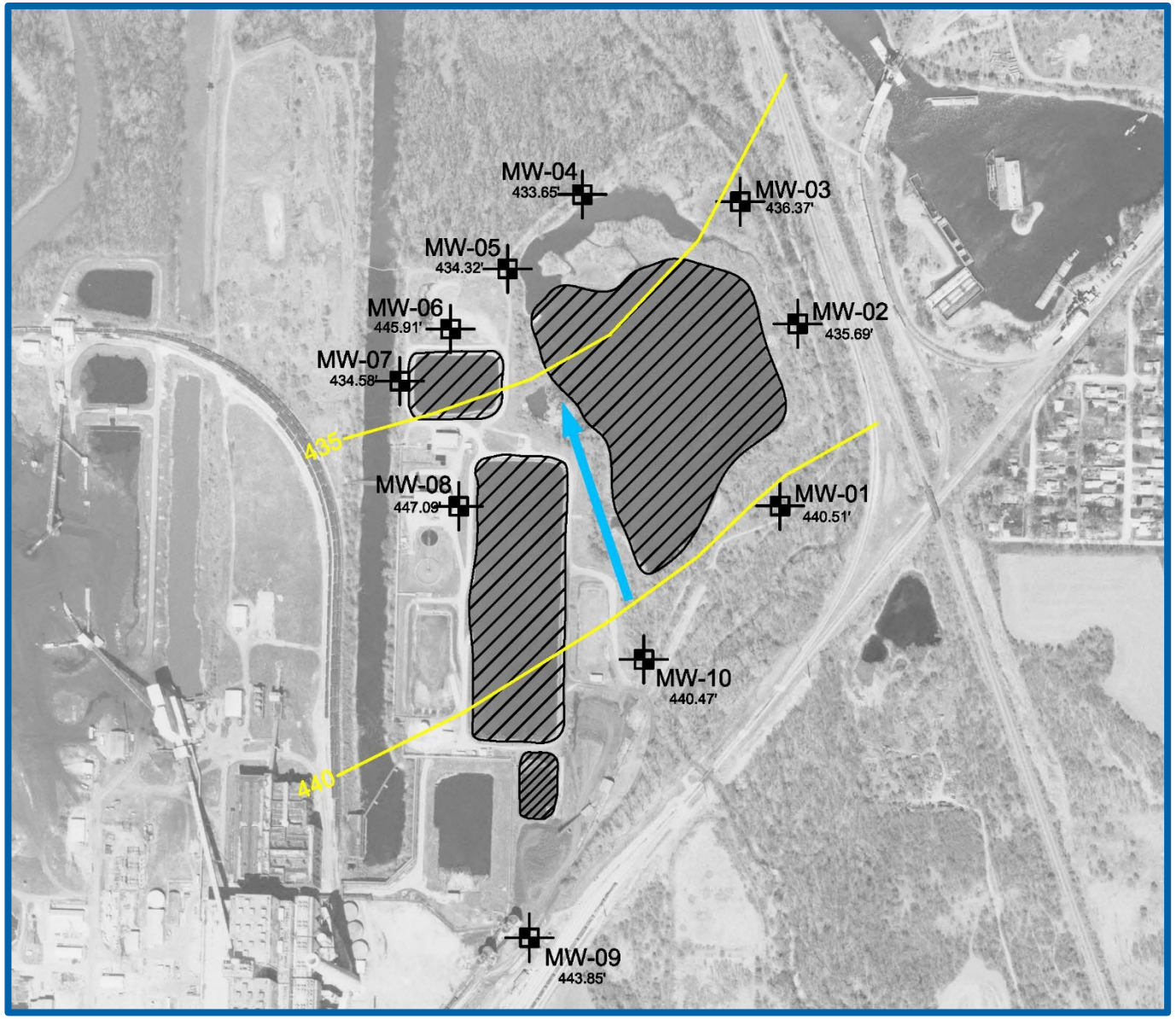
Powerton – 2010 Hydrogeologic Investigation

- **Voluntary investigation pre-CCR rules**
- **Installation of 10 MWs**
- **Groundwater samples collected**
- **12 potential CCR-related analytes not detected**
- **Boron and manganese were detected** above Part 620 Class I GWQS upgradient and downgradient of ponds
  - Only one sampling event
- **In the case of boron, sole exceedance was identified in an upgradient well**

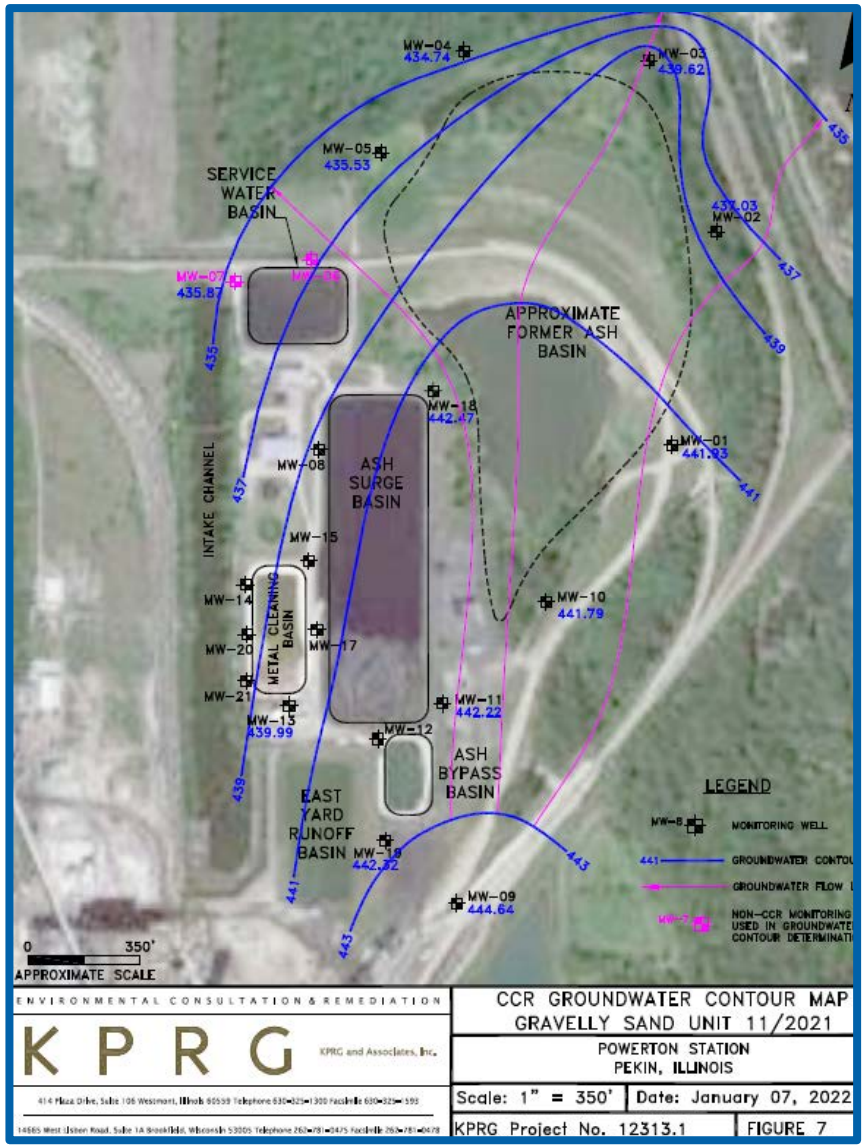


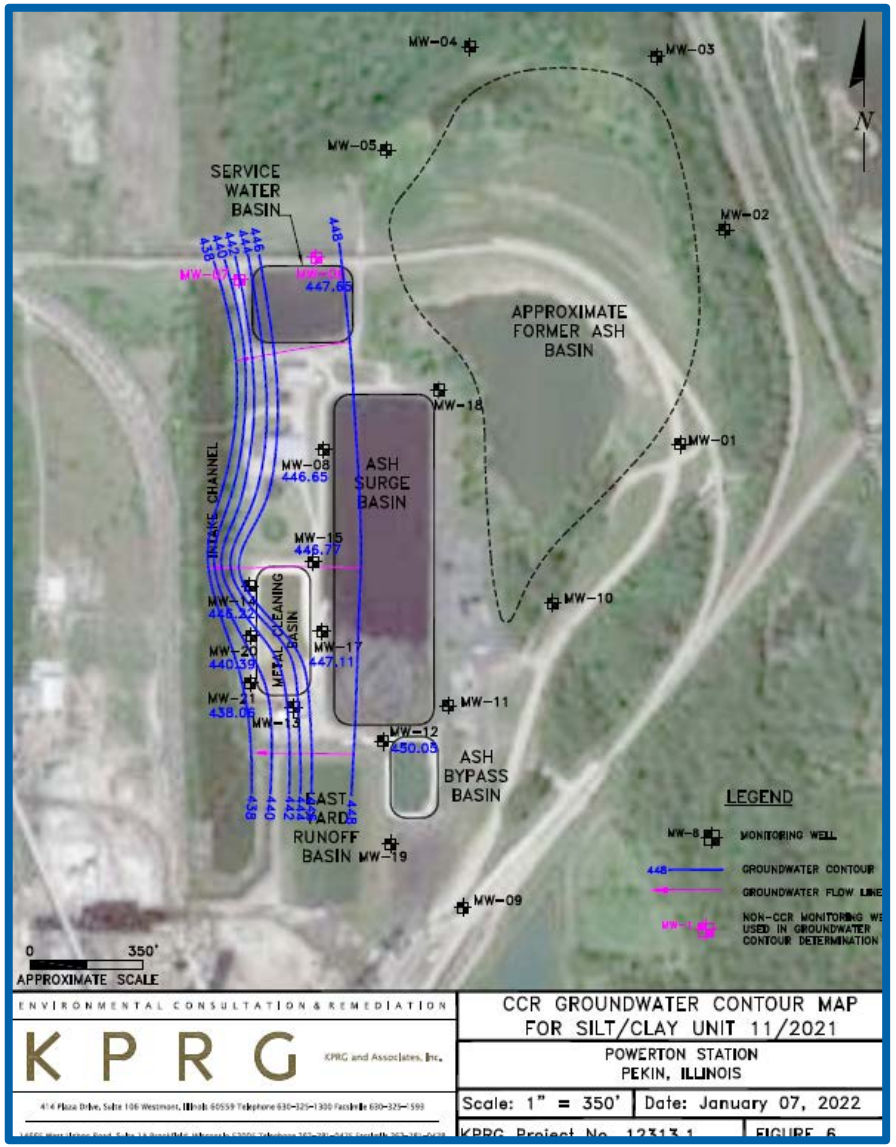
Powerton – 2010 Hydrogeologic Investigation (cont.)

- **Lithology predominantly sand and gravel, with a silt seam running through a portion of the Site**
- **Groundwater flow initially understood to the north**
- **Water Well Search**
  - No water wells downgradient of the ash ponds (between ponds Illinois River)
  - Two wells supply water to the station (greater than 50 ft. deep and west of intake/discharge channels)



Powerton – Ongoing Groundwater Monitoring

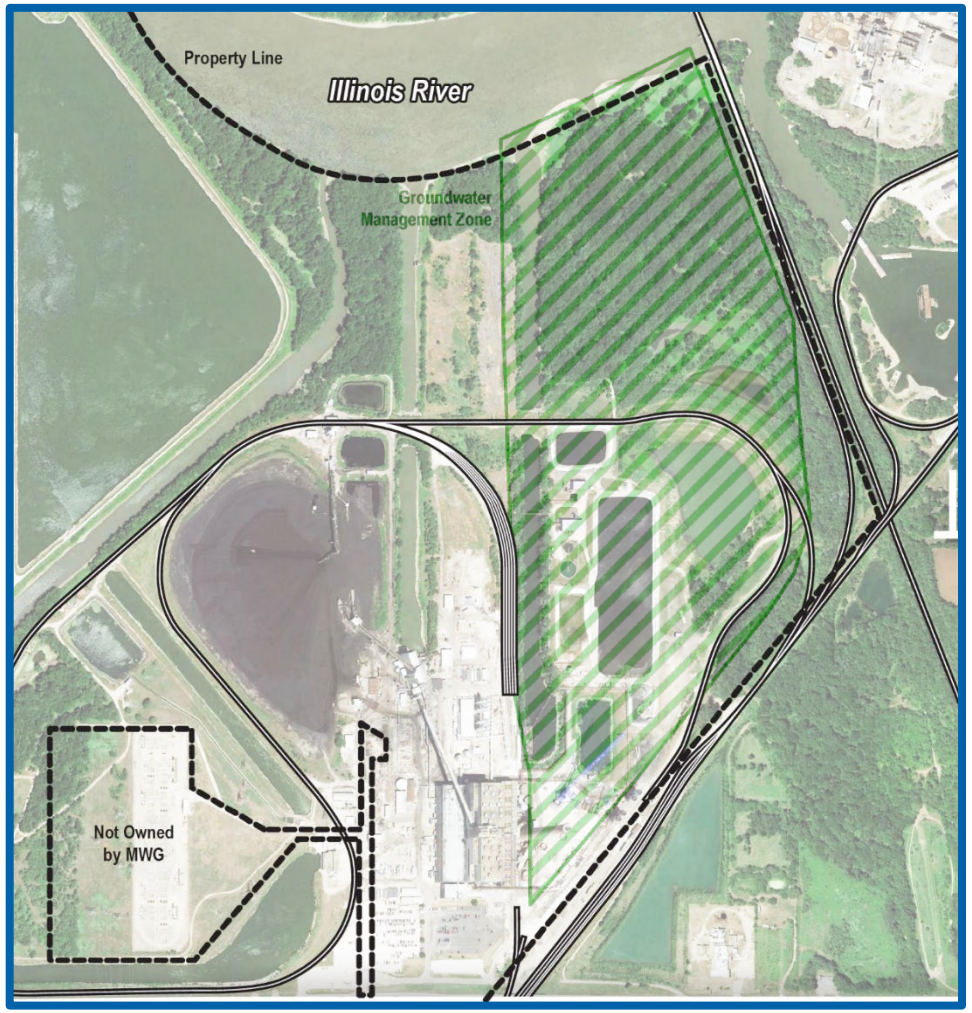


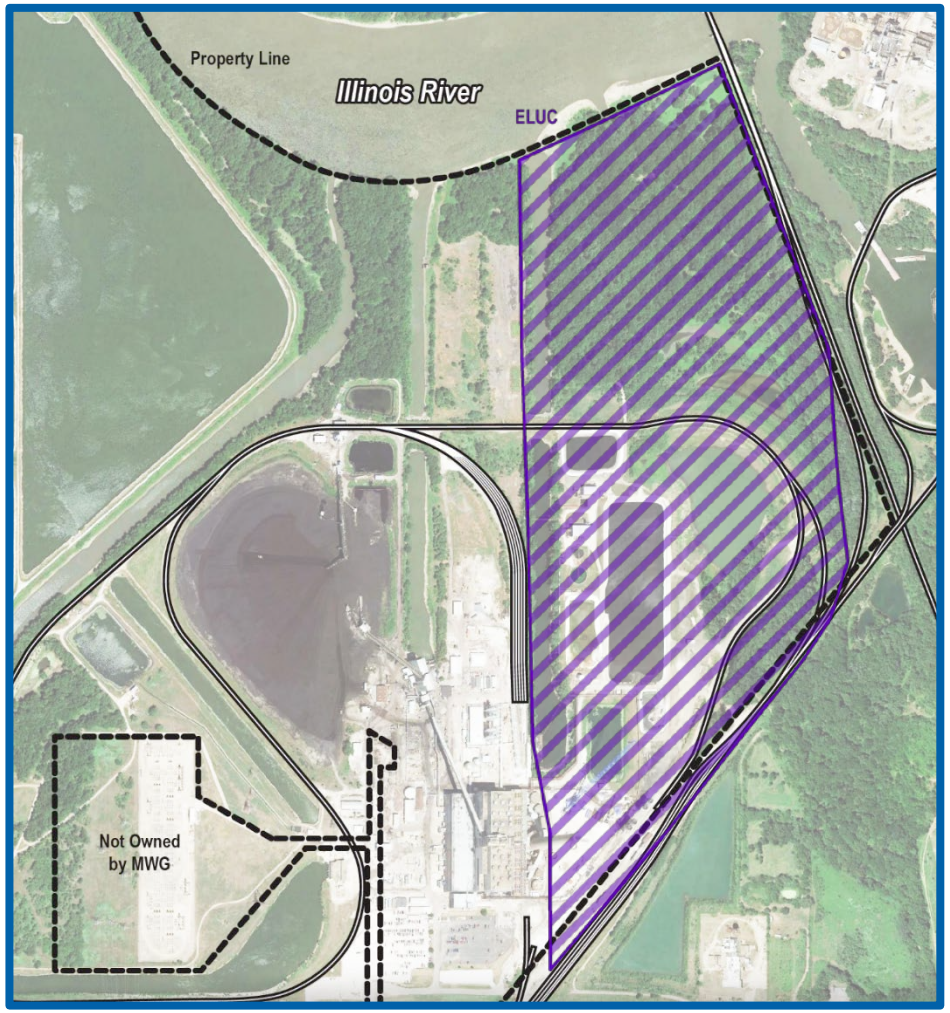


Powerton - Ongoing Groundwater Monitoring

- **Quarterly sampling of established groundwater monitoring network since CCA implemented in 2012**
  - 12 monitoring wells installed around ponds
- **Also to comply with Federal CCR Rules and IL CCR Rules**
- **Additional MWs installed after 2010 resulted in better understanding of GW flow**
- **Two units identified for development of groundwater elevation contour maps:**
  - Upper Silt/Clay Unit: Flow to the west, towards Powerton Lake
  - Lower Gravely Sand Unit: Flow west, northwest, north, northeast
- **Sampling/analysis of 34 constituents 4x per year**

Powerton - GMZ and ELUC

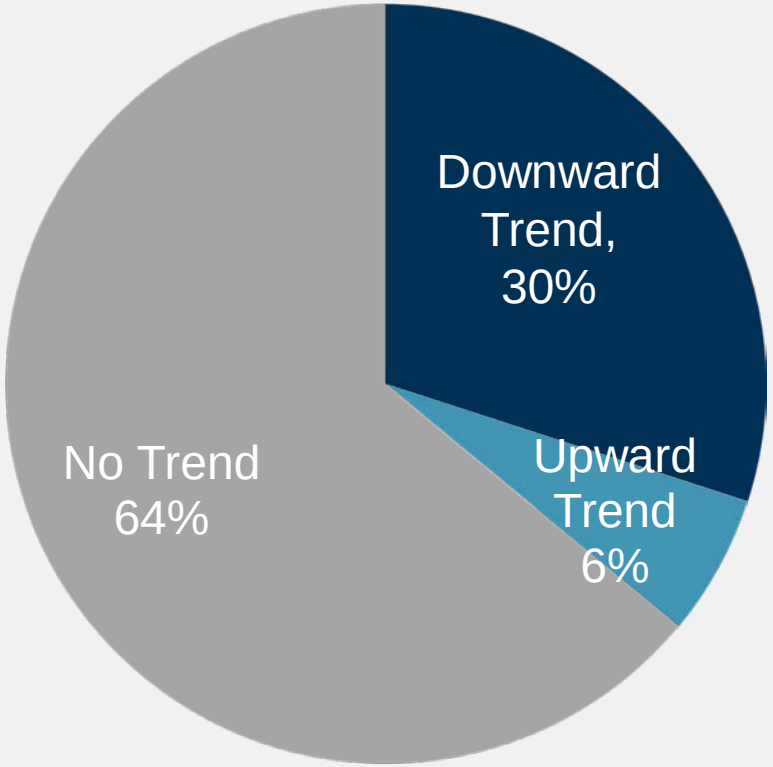




Powerton - Potential Receptors

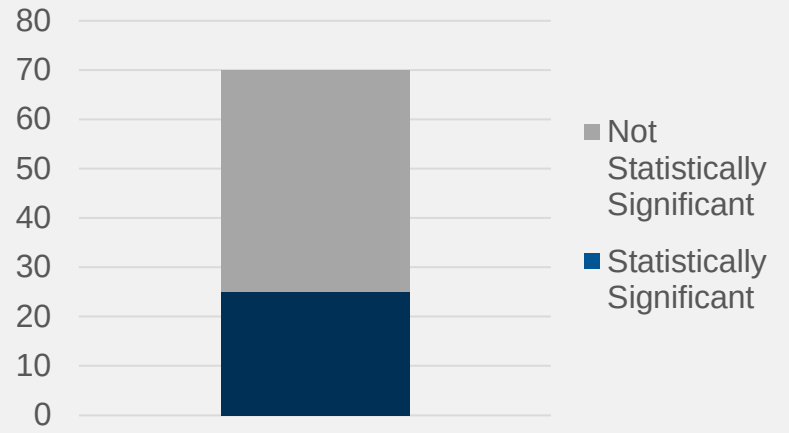
- **Onsite and Surrounding Industrial Land Use**
  - Industrial land use expected onsite into foreseeable future
  - Industrial properties to the east
- **No potable use of downgradient groundwater**
  - Based on water well search presented in Patrick Report on 2010 Hydrogeologic Investigation (2500 ft radius)
  - Prohibited by ELUC
  - GMZ established
- **Potential ecological receptors**
  - Illinois River located downgradient, to the North

Powerton - Groundwater Trend Testing

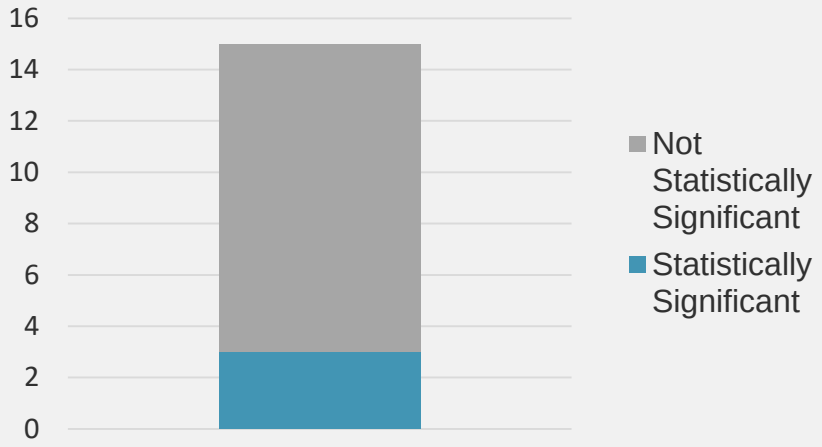


- Two constituents at one well with statistically significant upward trend exhibit concentrations above Class I GW standard (sulfate and TDS at MW-13)

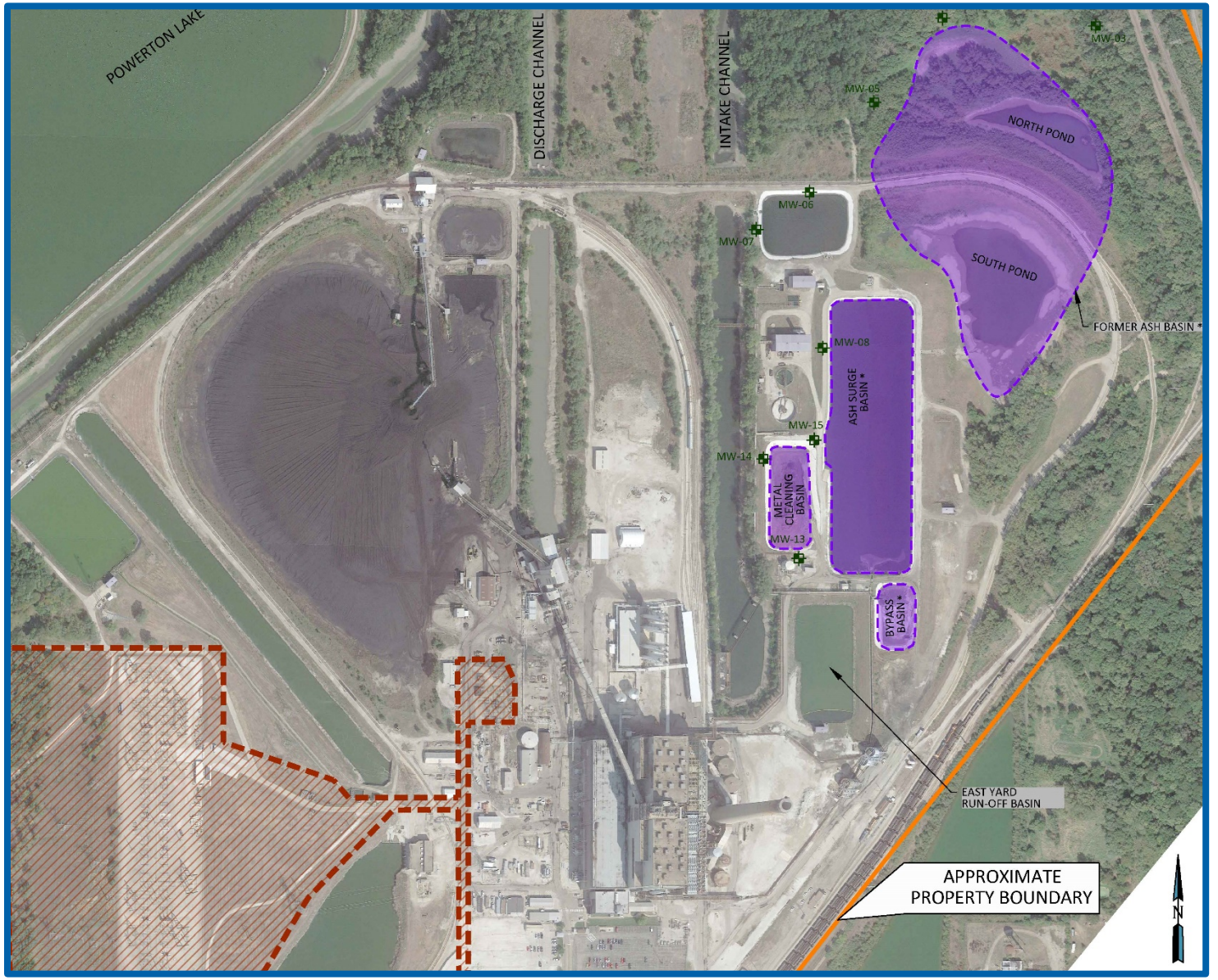
DOWNWARD TREND



UPWARD TREND



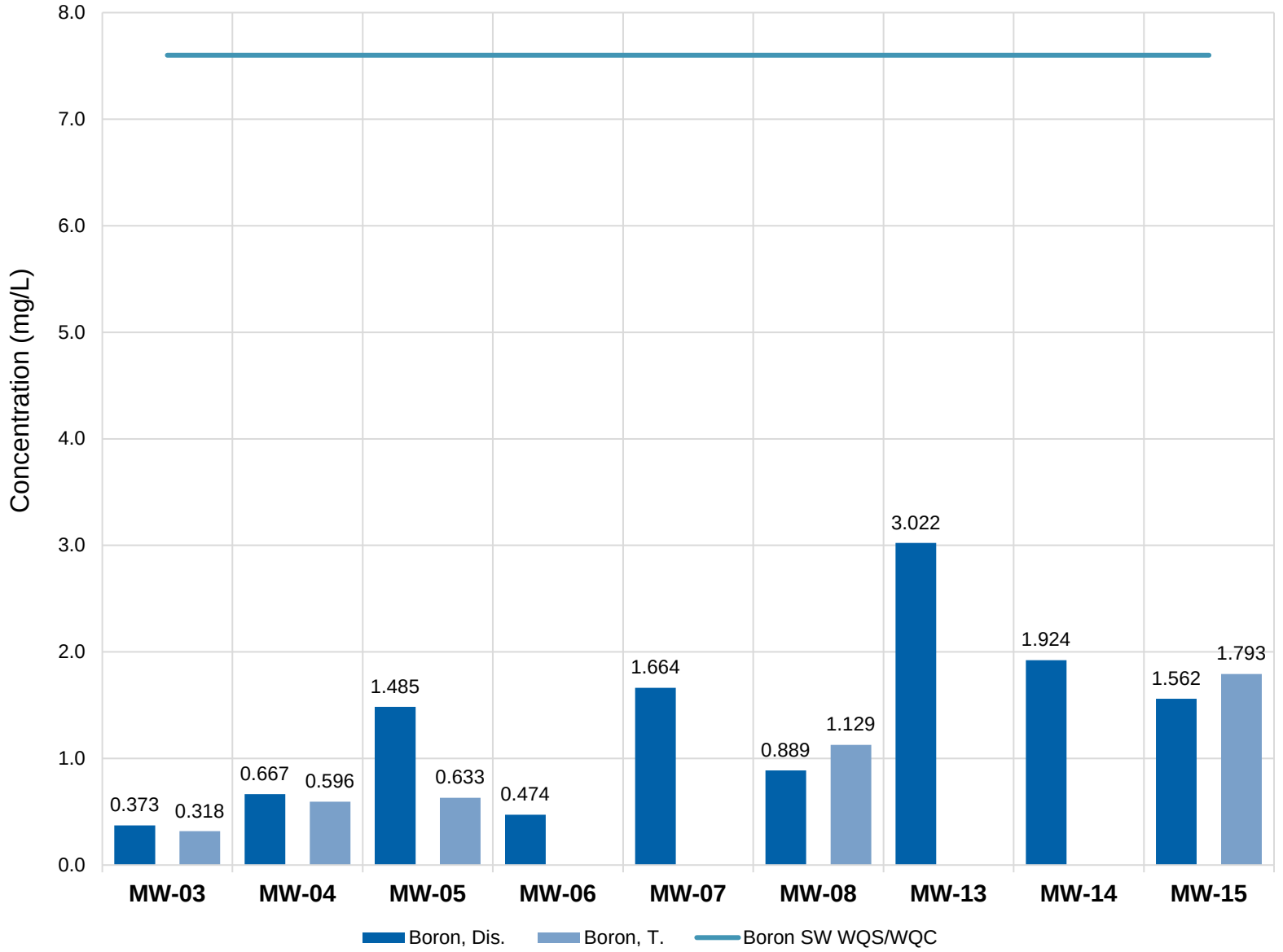
Powerton- Groundwater to Surface Water Analysis



Powerton –
Groundwater to Surface Water Analysis

- **Average groundwater concentrations from December 2010 to Q4 2020 as calculated by SanitasTM Software**
- **Constituent non-detect in 75% or more samples;** reporting limit presented as average
- **Constituents analyzed are CCR constituents from Appendices III and IV to 40 CFR Part 257**
- **Surface Water Standard (SWS) obtained from the Illinois General Use Water Quality Standards (WQS) as defined in 35 IAC 302, Subpart B or the Illinois Water Quality Criteria (WQC) - if no WQS.**

Powerton: Average **Boron in Groundwater** Compared to Surface Water Standards



Powerton - Summary

- **Background data from upgradient wells to assess regulated units**
  - Remaining units to be CCR compliant
  - Regular inspections, notifications
- **Trend testing at downgradient MWs indicates improving groundwater quality over long term**
- **No unacceptable risk posed to onsite or offsite receptors**
  - groundwater concentrations at downgradient monitoring wells did not exceed surface water standards
- **Board determined FAB not a source/closure**
- **One ash placement area/storage for 2 months only and removed**
- **No seeps/distance to Illinois River**

Powerton - Summary

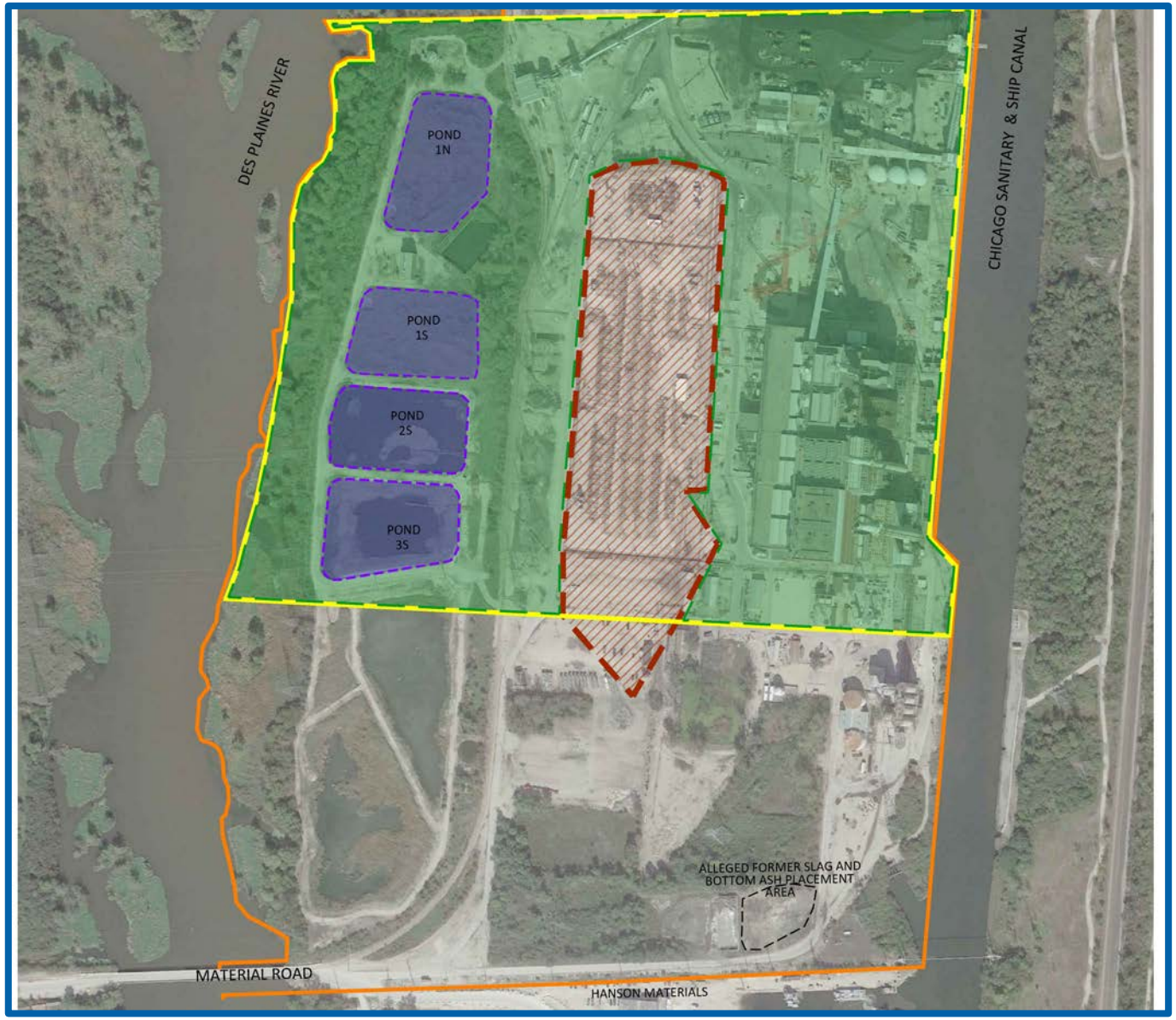
- **Continue to follow the Federal/State CCR surface impoundment rules**
- **Continue regular groundwater monitoring under CCR rules**
  - Assessment Monitoring
  - Corrective Action if GWPS exceeded and attributable to CCR Surface Impoundments
- **Implement closure/retrofits of CCR Surface Impoundments**
- **Comply with potential new Federal/State regulations for historic fill areas**

Will County Station

Weaver Consultants Group

Will County-
Background + Setting

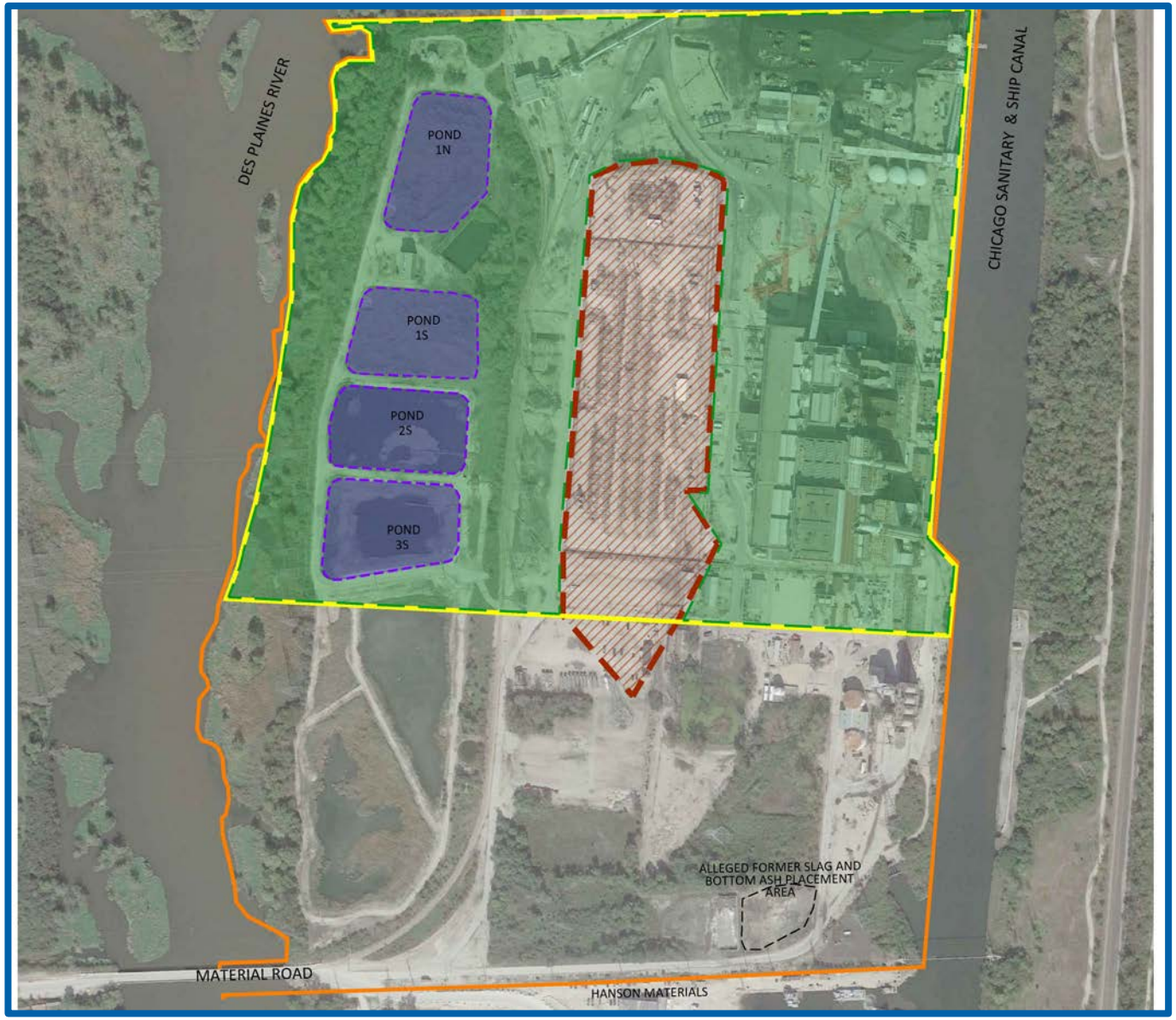
- **Began operating in 1955**
- **Four CCR Surface Impoundments**
  - Each constructed in 1977
- **Ceased burning coal June 2022**
- **Surrounding land use:**
  - Chicago Sanitary and Ship Canal to east
  - Des Plaines River to west
  - Citco refinery to north
  - Hanson Materials/Lafarge to south



Will County -
Location of Impoundments

Will County – Historic Fill Areas

- **Two areas of alleged historic fill placement:**
  - Around Surface Impoundments
  - SE Area



Will County -
Investigation Locations

LEGEND

APPROXIMATE PROPERTY BOUNDARY (PER COUNTY GIS SITE)

PROPERTY NOT OWNED BY MWG

APPROXIMATE CCR PONDS

PONDS SUBJECT TO FEDERAL AND/OR STATE CCR RULES

NOTE: POND 2S AND POND 3S ARE SUBJECT TO FEDERAL AND STATE CCR RULES. POND 1N AND POND 1S ARE SUBJECT TO STATE CCR RULES.

MW-2 PATRICK 2010 HYDRO ASSESSMENT/ KPRG 2015 CCR APPROX. MONITORING WELL LOCATION (PER KPRG MAP, 12/2020)

B-12 ENSR 1998 PHASE II ESA APPROXIMATE BORING LOCATION (PER ENSR SITE PLAN, 11/1998)

MW-5 ENSR 1998 PHASE II ESA APPROXIMATE MONITORING WELL LOCATION (PER ENSR SITE PLAN, 11/1998)

S-15 ENSR 1998 PHASE II ESA APPROXIMATE SURFACE SOIL SAMPLE LOCATION (PER ENSR SITE PLAN, 11/1998)

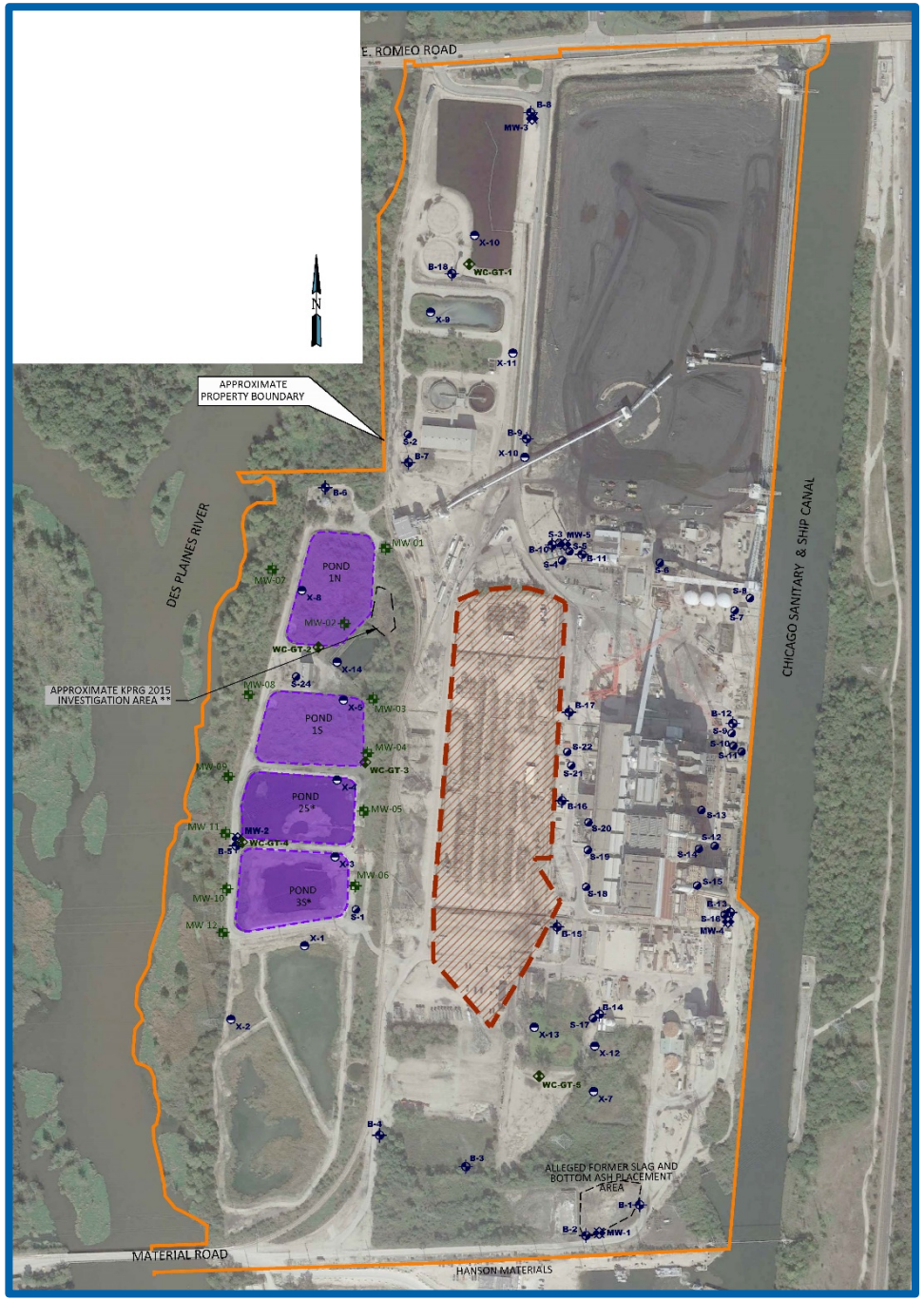
X-8 ENSR 1998 PHASE II ESA APPROXIMATE SEDIMENT SAMPLE LOCATION (PER ENSR SITE PLAN, 11/1998)

WC-GT-4 KPRG 2005 GEOTECH APPROXIMATE BORING LOCATION (PER KPRG FIGURE PLAN, 2005)

NOTES:

* ASH AND WATER SAMPLES COLLECTED FROM POND 2S AND POND 3S IN 2018 AS PART OF 2019 KPRG ASD.

** COAL ASH SAMPLES COLLECTED FROM THIS AREA FROM 20 BORINGS (A1 TO D7) AS PART OF 2014 KPRG CCB DETERMINATION

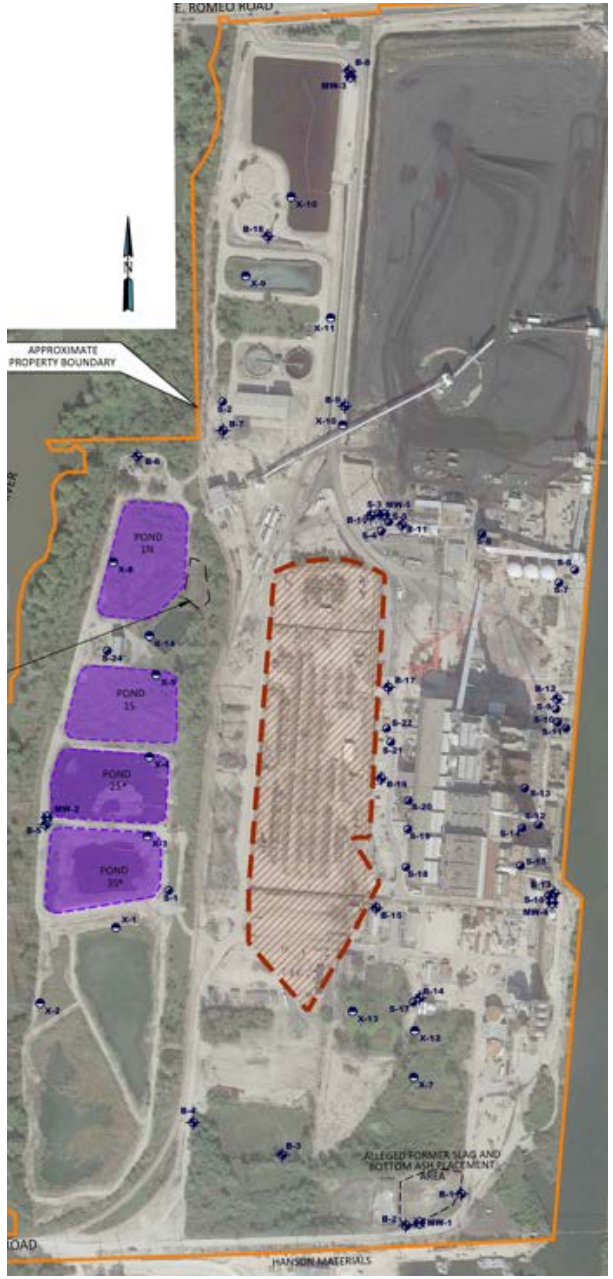


Will County - Investigations

- **1998** Phase II Environmental Site Assessment by ENSR (due diligence, prior to MWG acquisition of station)
- **2005** Geotechnical Investigation by KPRG
- **2010** Hydrogeologic Assessment by Patrick Engineering
- **2015** CCB Investigation
- Ongoing groundwater monitoring under the CCA and CCR Rules (Federal and IL)

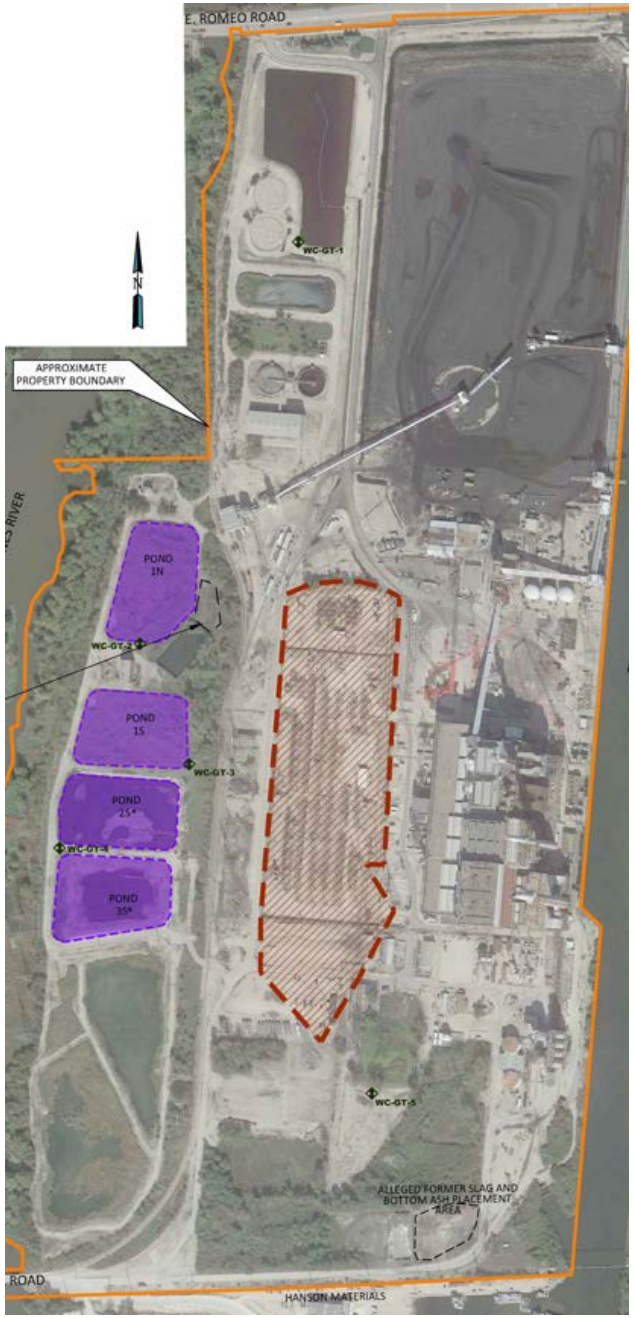
Will County – 1998 Phase II ESA

- **18 soil borings, 5 MWs, 23 surface soil, 14 sediment samples**
- **B-1/B-2/MW-1 near SE Fill Area -** coal ash mixed with soils
  - RCRA metals in SE Area soil (incl. arsenic) below TACO Tier 1 SRO
- **MW-1 groundwater did not exhibit RCRA** Metals > Class I Groundwater Standards
- **Soil and groundwater concentrations in SE Fill Area do not pose unacceptable risk** to human health and the environment
- Groundwater ingestion not a potential exposure pathway
- Based on industrial land use/low potential for human exposure to constituents of concern:
- No requirement under Illinois environmental law to further investigate or remediate property



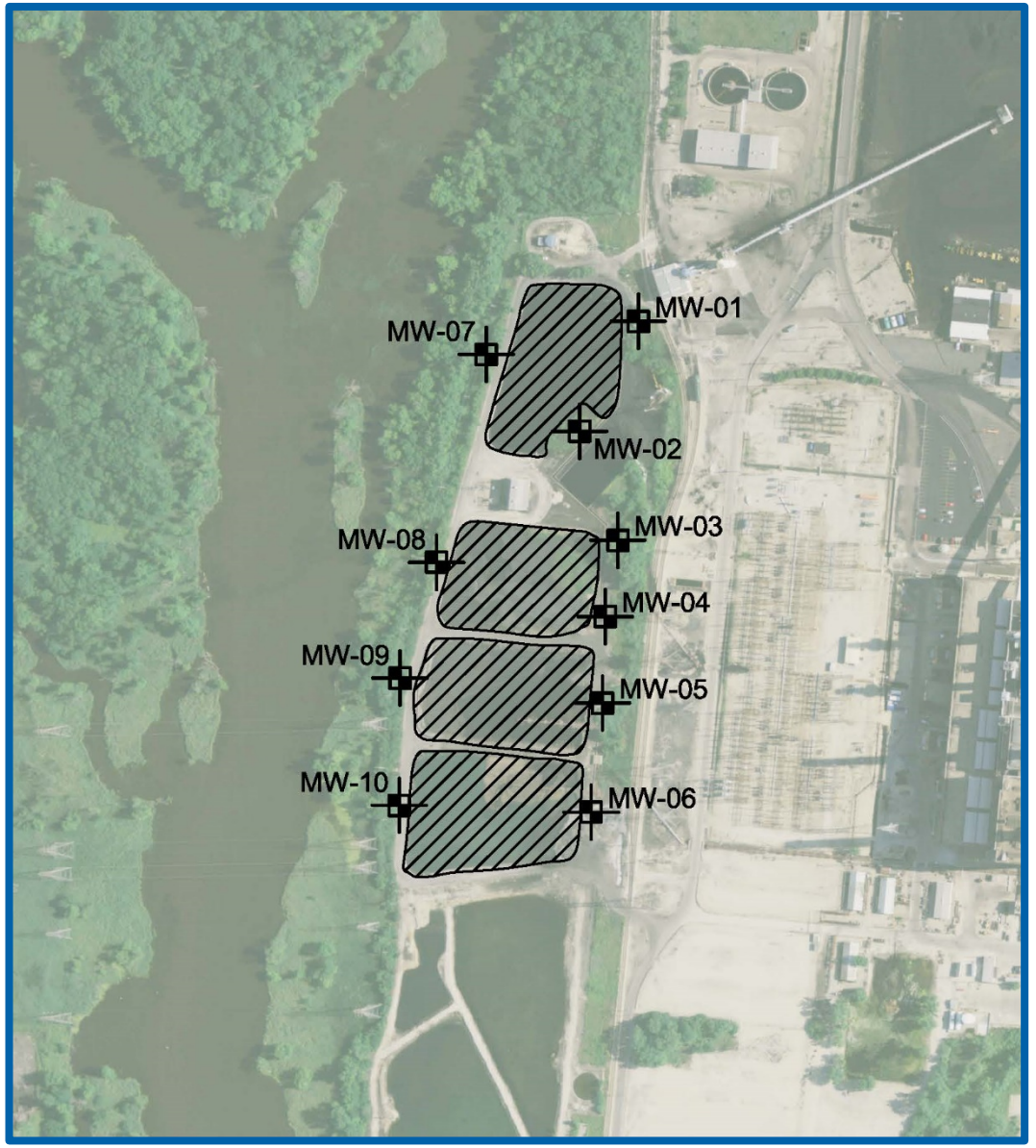
Will County - 2005 Geotechnical Investigation

- Provide information on physical characteristics of soils
- Five soil probes
- Bedrock encountered in the probes at 3-10 ft. below ground surface



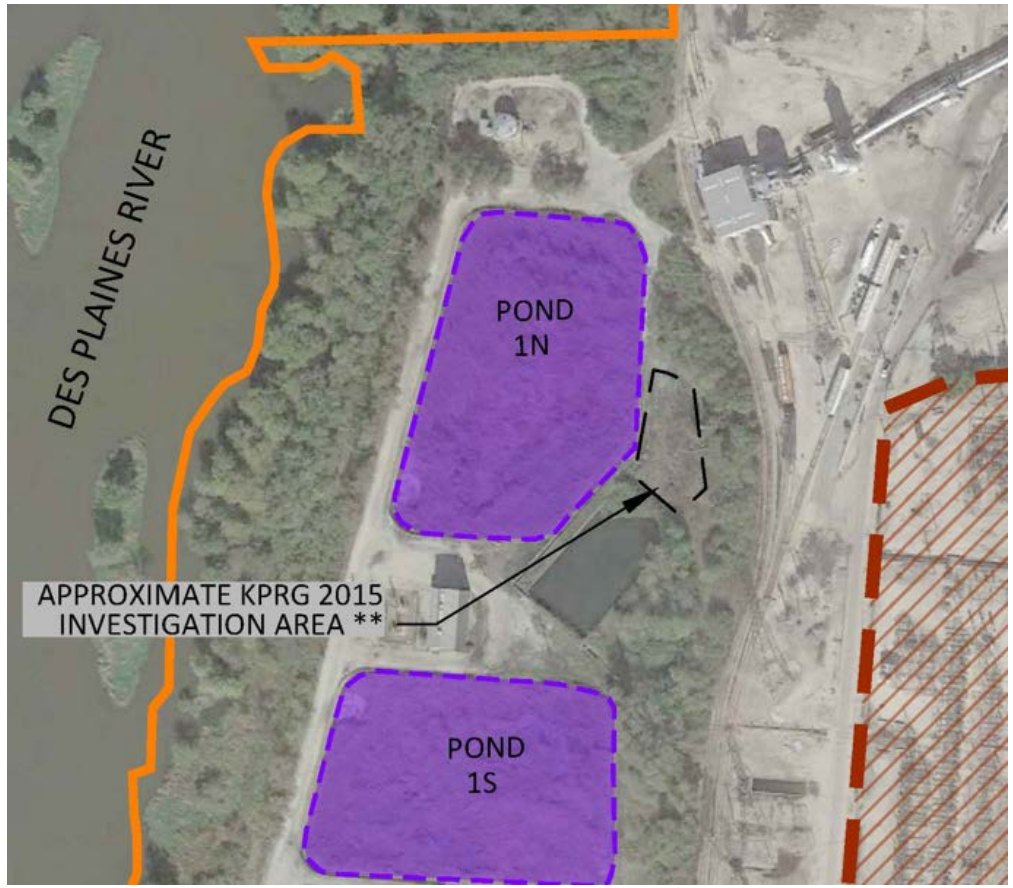
Will County - 2010 Hydrogeologic Investigation

- **Voluntary investigation pre-CCR regulations**
- **Installation of 10 MWs**
- **Uppermost groundwater unit at depths ranging from 8-11 feet bgs**
- **Groundwater samples collected**
- **12 analytes not detected**
- Manganese, boron, sulfate, and TDS detected above Part 620 Class I GWQS east and west of ponds
  - One sampling event only
- Potable well search (2500 ft radius):
  - No potable well use within the shallow monitored aquifer



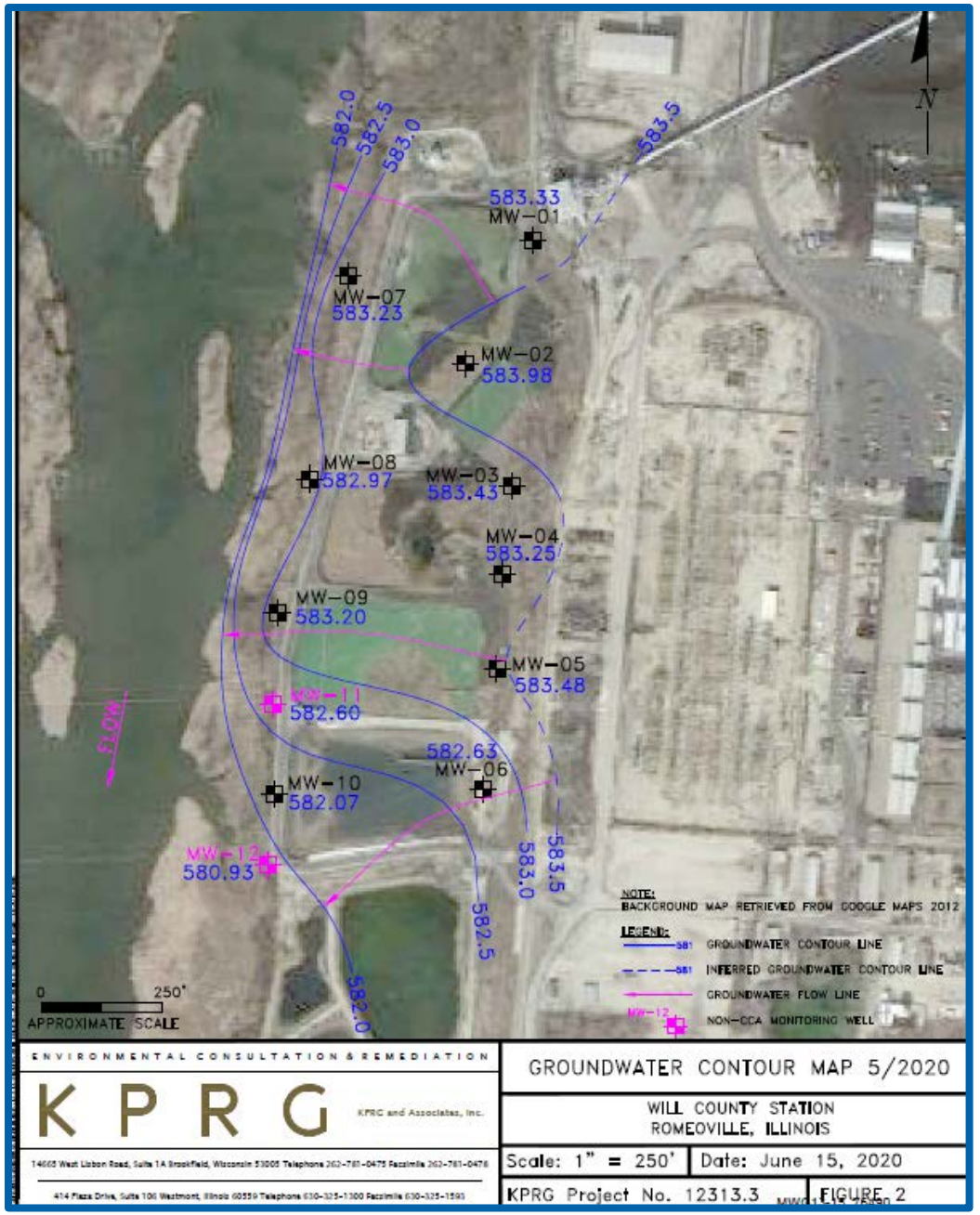
Will County - 2015 CCB Investigation

- **20 Geoprobes east of Pond 1N**
- **Soils homogeneous bottom ash/slag from coal combustion**
- **NLET testing of 20 composite samples from vertical profile**
  - **Most metals not detected** (Sb, As, Ba, Be, Cd, Cr Co, Pb, Mn, Hg, Mo, Ni, K, Se, Ag, Tl, Zn)
  - **Naturally occurring metal**s (B, Fe, Na) **detected** (below Class I GWQS)
  - **Statistical analysis presented to support conclusion that constituents are not present** in the material above Class I groundwater standard
- **KPRG concluded that material meets the 3.135 criteria** and may be considered CCB, and eligible for beneficial uses specified in the Act

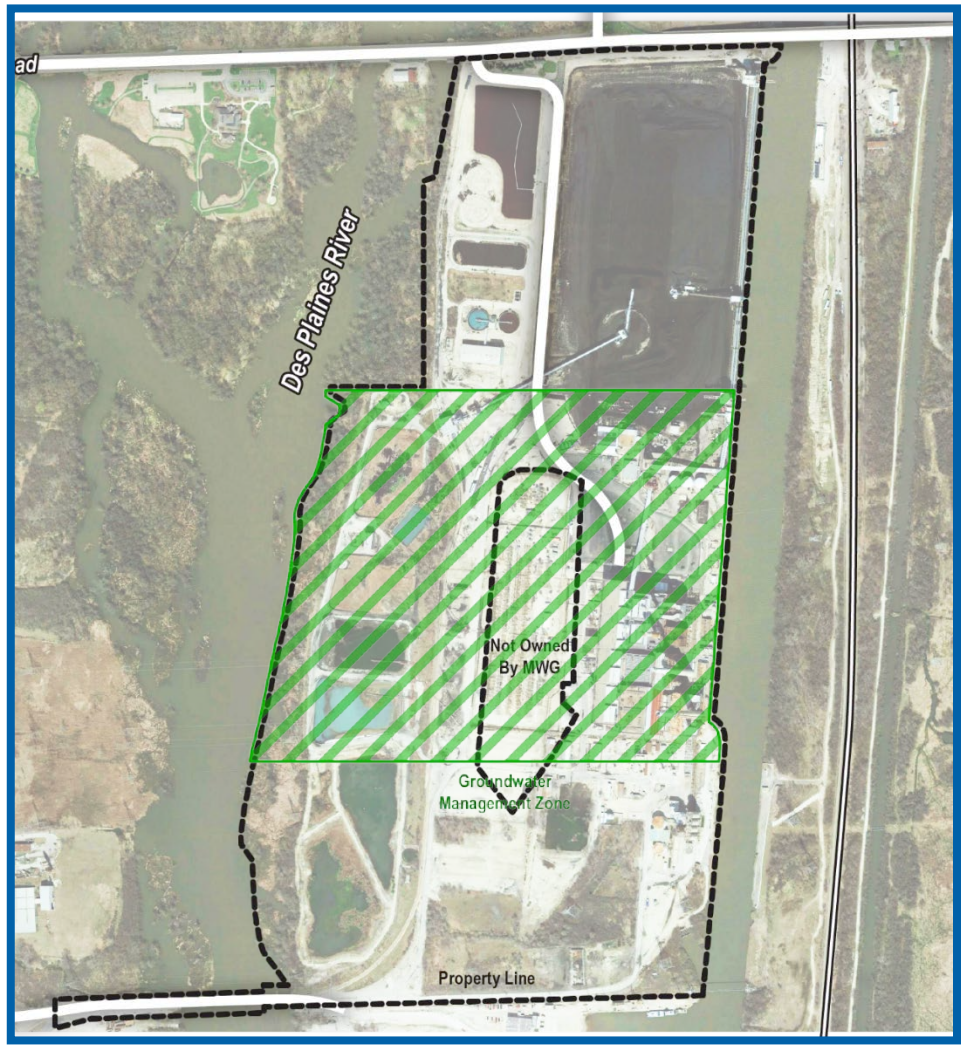


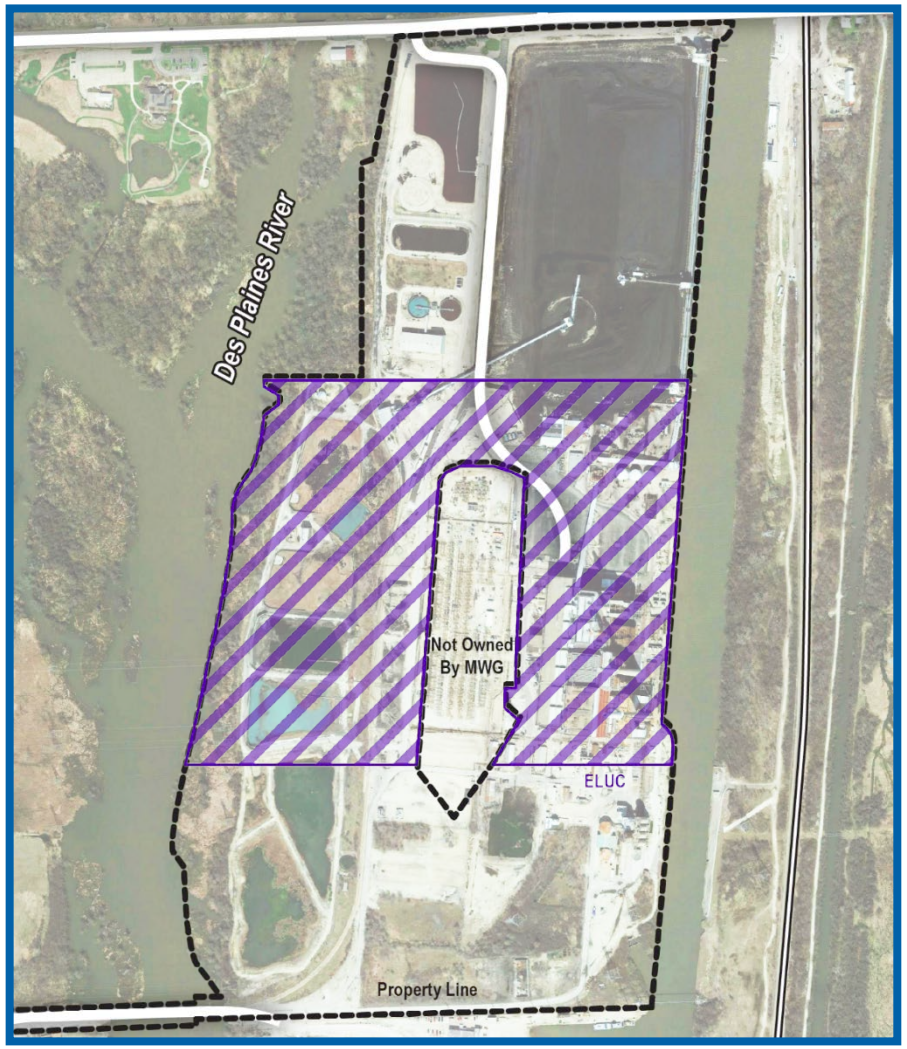
Will County - Ongoing Groundwater Monitoring

- **Quarterly sampling of established groundwater monitoring network since CCA implemented in 2012**
- **10 MWs x 34 constituents 4x per year**
- Also to **comply with Federal CCR Rules and IL CCR Rules**
- **Groundwater flow predominantly from mid-site to the west, towards Des Plaines River**



Will County - GMZ and ELUC

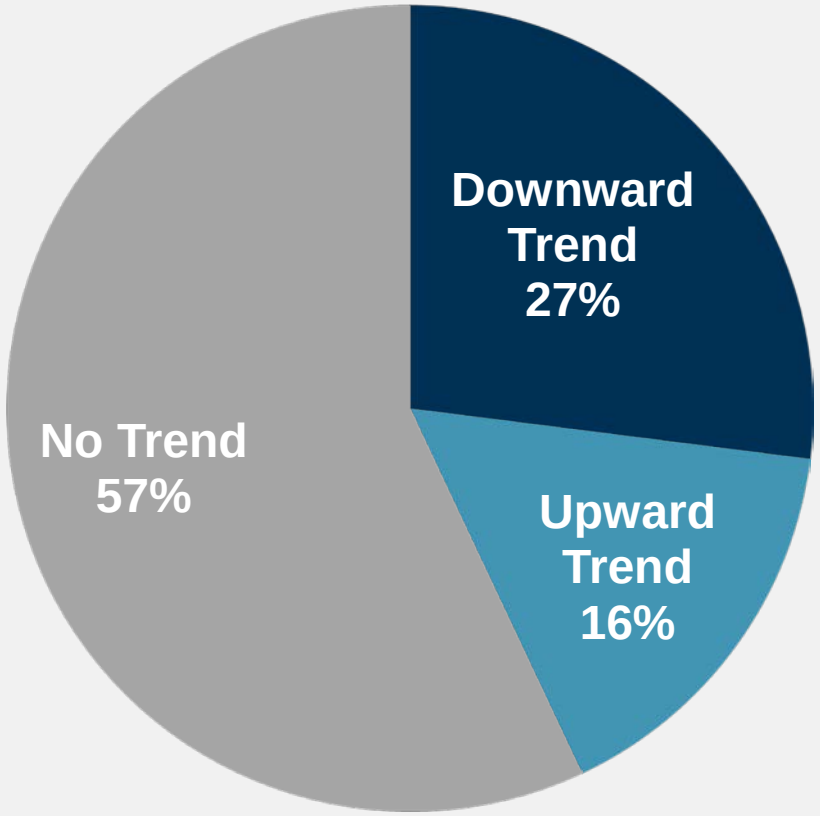




Will County - Potential Receptors

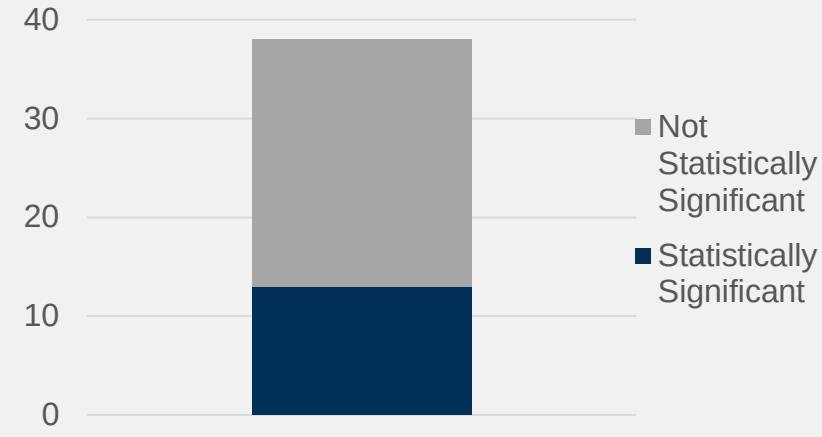
- **Onsite and Surrounding Industrial Land Use**
  - Industrial land use expected onsite into the foreseeable future
  - Chicago Sanitary and Ship Canal to east
  - Des Plaines River to west
  - Hanson Materials/Lafarge to south
- **No potable use of shallow groundwater**
  - Previous water well search presented in Patrick Report on 2010 Hydrogeologic Investigation (2500 ft radius)
  - Prohibited by ELUC
  - GMZ established
- **Potential ecological receptors**
  - Des Plaines River to west

Will County - Groundwater Trend Testing

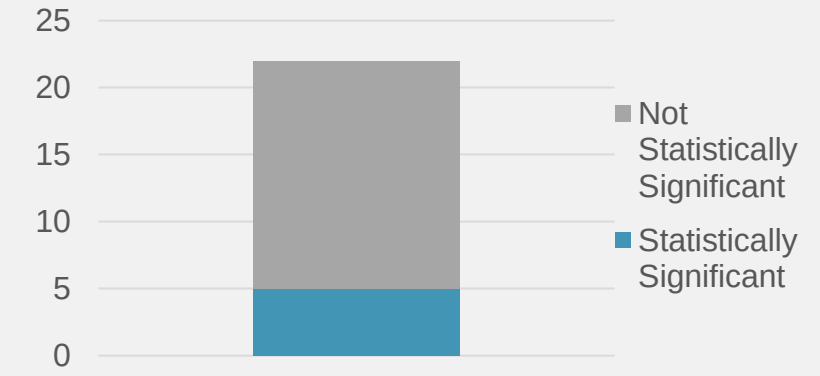


With the exception of chloride at MW-09, no well with stat. sig upward trend has ever exceeded a Class I GW standard.

DOWNWARD TREND



UPWARD TREND

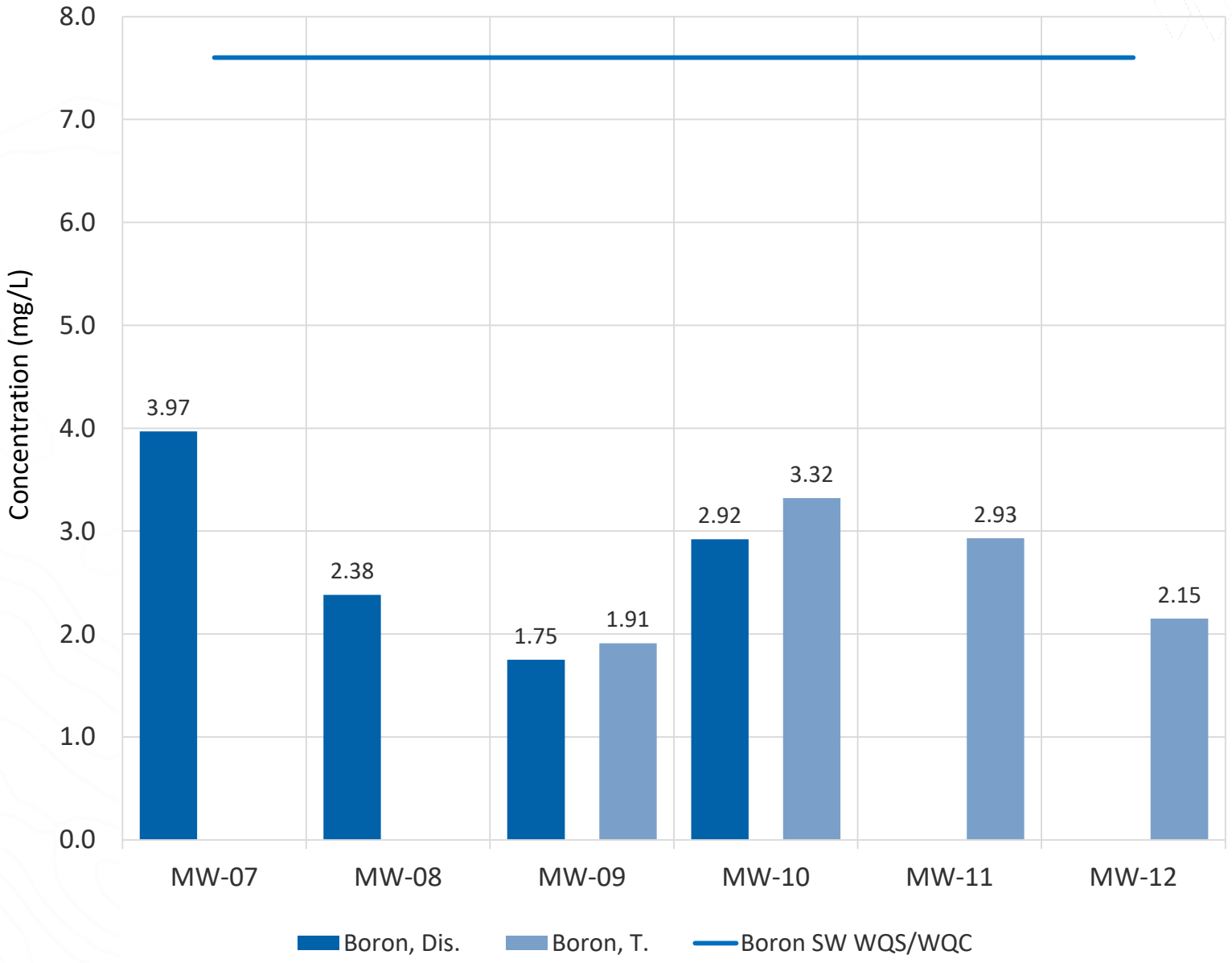


Will County - Groundwater to Surface Water Analysis

Will County -
Groundwater to Surface Water Analysis

- **Average groundwater concentrations from December 2010 to 4th Quarter 2020 as calculated by SanitasTM Software**
- **Constituent non-detect in 75% or more samples;** reporting limit presented as average
- **CCR constituents from Appendices III and IV to 40 CFR Part 257**
- **Surface Water Standard (SWS) obtained from the Illinois General Use Water Quality Standards (WQS) as defined in 35 IAC 302, Subpart B or the Illinois Water Quality Criteria (WQC) - if no WQS.**

Will County: Average **Boron in Groundwater** Compared to Surface Water Standards



Will County - Summary

- **Background data from upgradient wells to assess regulated units**
  - Regular groundwater elevation contour maps
  - No evidence of groundwater flow from ponds to upgradient wells
  - Units to close
- **Trend testing at downgradient MWs indicates improving groundwater quality over long term**
  - Downward trends expected to continue, given station no longer burns coal and ponds being closed
- **No unacceptable risk to onsite or offsite potential receptors**

Will County - Summary

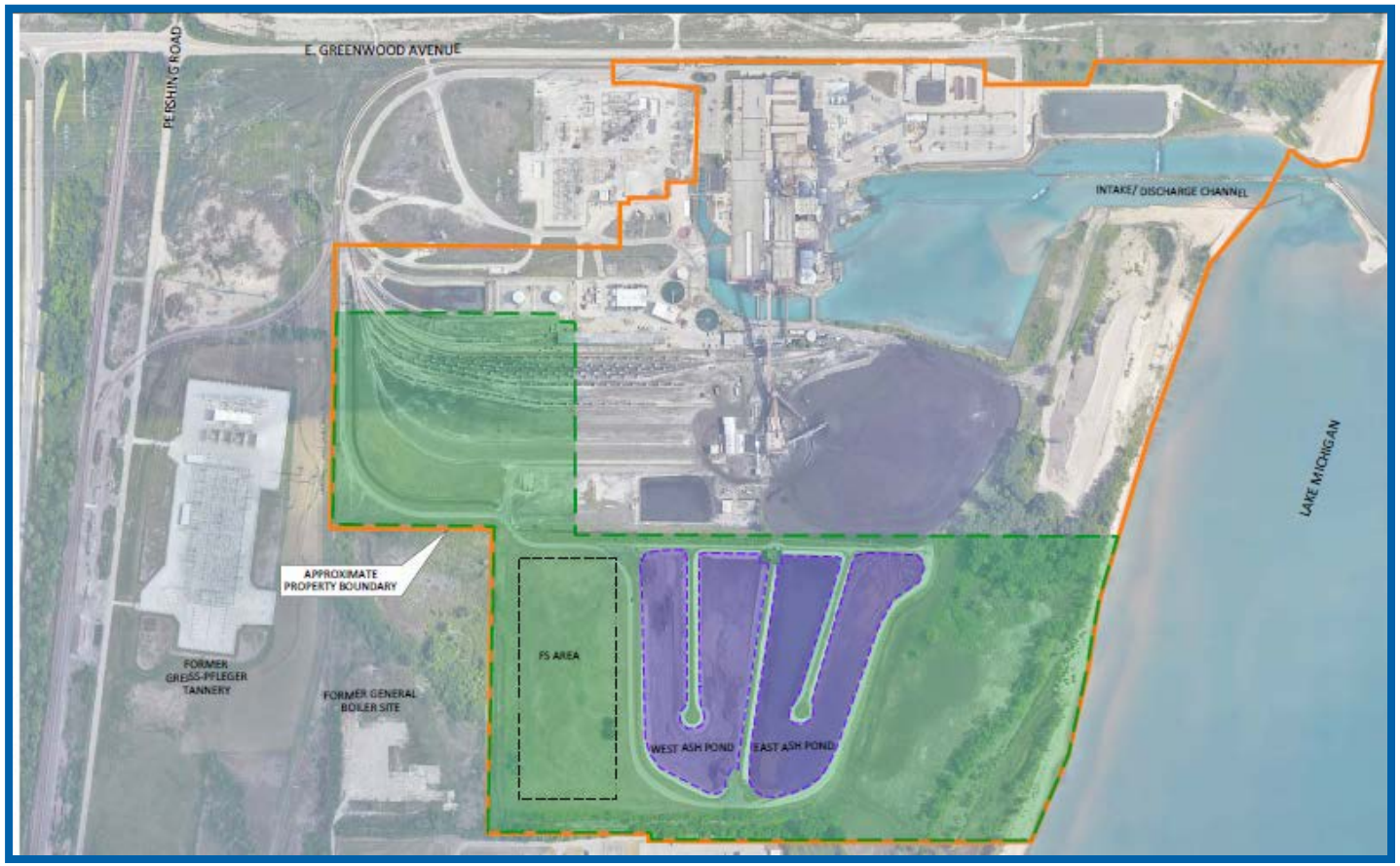
- Continue to follow Federal/State CCR Rules
- Continue regular groundwater monitoring under CCR rules
- Implement closure of CCR Surface Impoundments
- Comply with potential new Federal or State regulations for historic fill areas

Waukegan Station

Weaver Consultants Group

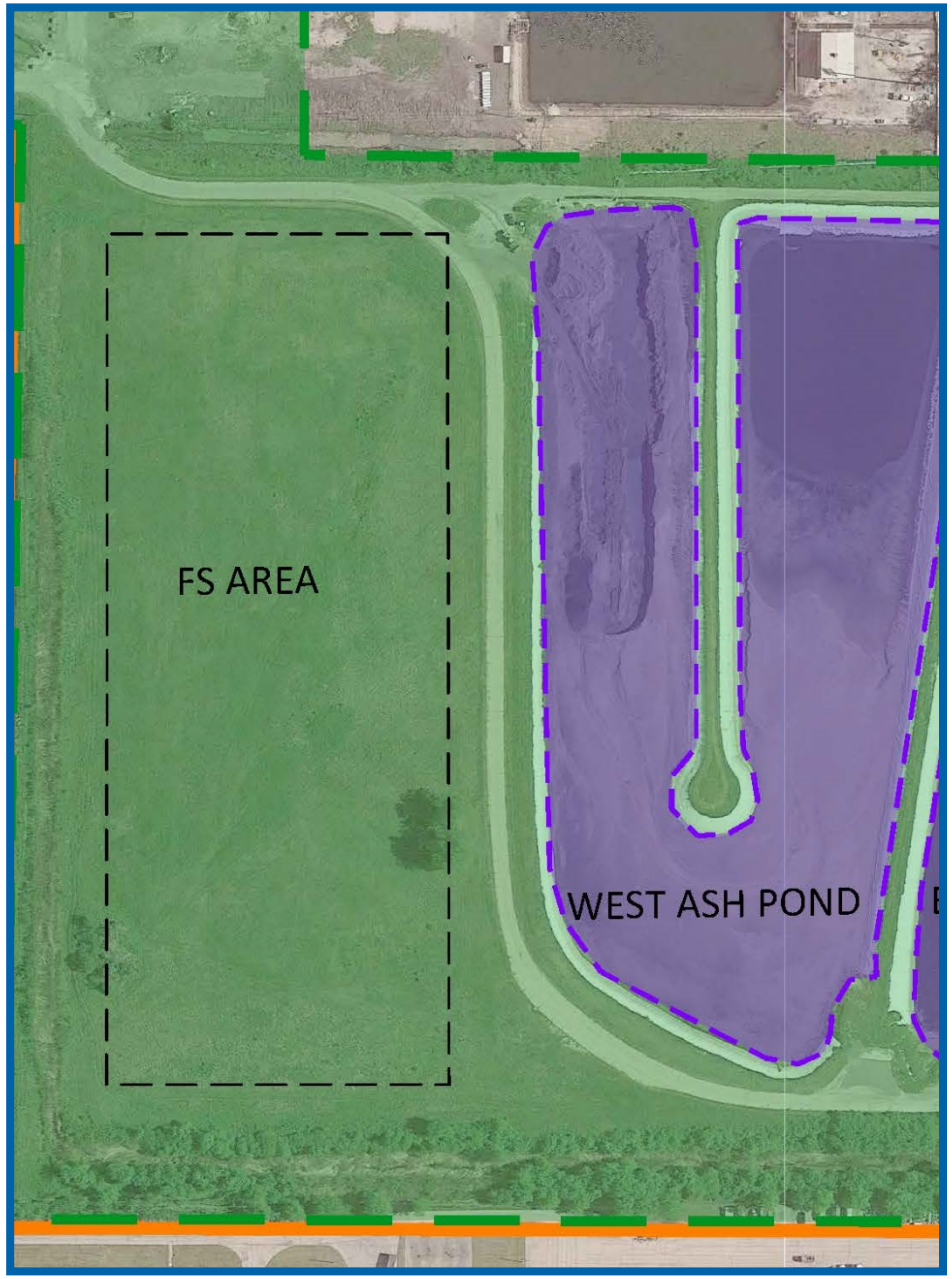
Waukegan -
Background + Setting

- **Began operation in 1923**
- **MWG acquired in 1999**
- **Ceased burning coal June 2022**
- **Surrounding area used for industrial purposes since 1930**
  - Superfund site to the north
  - Former Greiss-Pfleger Leather Tanning Facility to the west
  - Sewage plant to the south



Waukegan –
Alleged Historic Fill Area

Former Slag Area (aka FS Area)

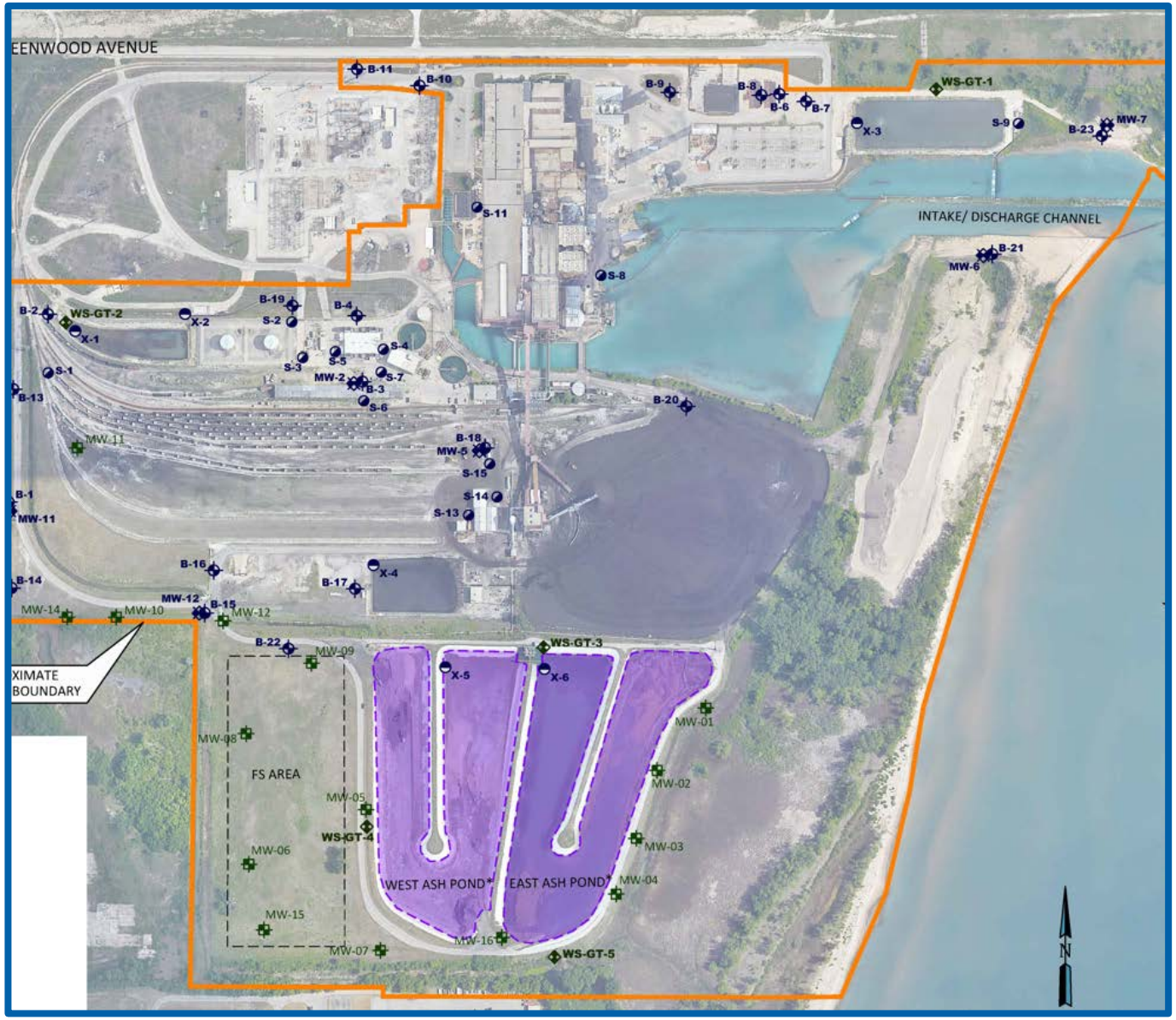


Waukegan County - Investigation Locations

LEGEND

- APPROXIMATE PROPERTY BOUNDARY (PER COUNTY GIS SITE, IN ADDITION, FOLLOWING CURRENT LAKE SHORE LINE)
- APPROXIMATE CCR PONDS
- POND SUBJECT TO FEDERAL AND STATE CCR RULES
- MW-2 — PATRICK 2010 HYDRO ASSESSMENT/KPRG 2010-2014 CCR APPROX. MONITORING WELL LOCATION (PER KPRG MAP, 11/2020)
- B-12 — ENSR 1998 PHASE II ESA APPROXIMATE BORING LOCATION (PER ENSR SITE PLAN, 11/1998)
- MW-5 — ENSR 1998 PHASE II ESA APPROXIMATE MONITORING WELL LOCATION (PER ENSR SITE PLAN, 11/1998)
- S-15 — ENSR 1998 PHASE II ESA APPROXIMATE SURFACE SOIL SAMPLE LOCATION (PER ENSR SITE PLAN, 11/1998)
- X-8 — ENSR 1998 PHASE II ESA APPROXIMATE SEDIMENT SAMPLE LOCATION (PER ENSR SITE PLAN, 11/1998)
- A4 — KPRG 2020 INVESTIGATION APPROXIMATE SAMPLING LOCATION (PER RUETTIGER, TONELLI & ASSOC. INC. PLAN, 11/2020)
- WS-GT-4 — KPRG 2005 GEOTECH APPROXIMATE BORING LOCATION (PER KPRG FIGURE PLAN, 2005)

NOTES:
* ASH AND WATER SAMPLES COLLECTED FROM THE EAST AND WEST ASH PONDS IN 2018 AS PART OF 2019 KPRG ASD. BOTTOM ASH SAMPLES (BOTTOM ASH-1, BOTTOM ASH-2, AND BOTTOM ASH1/2) COLLECTED FROM EAST AND WEST ASH PONDS AS PART OF KPRG 2004 SAMPLING.

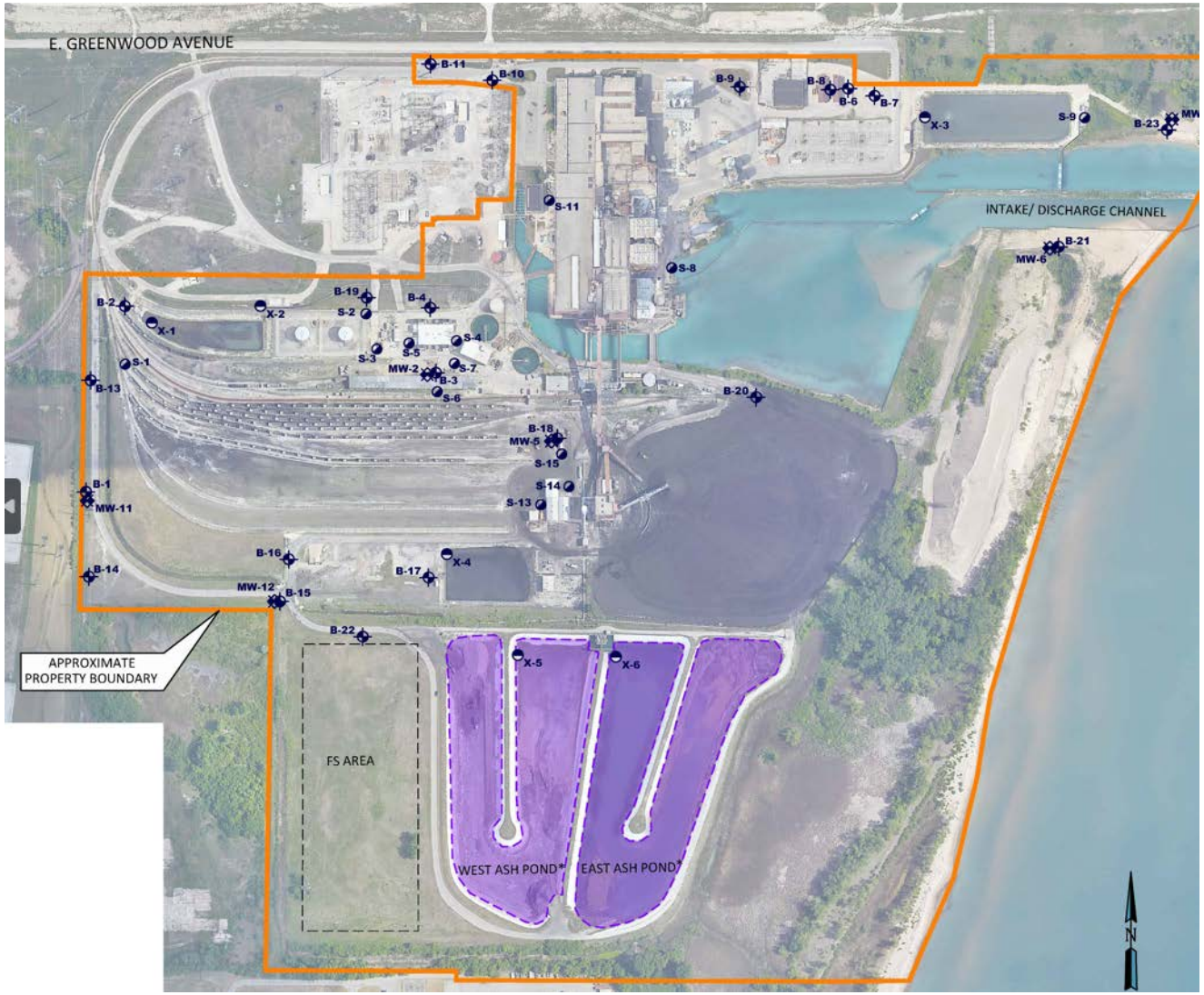


Waukegan - Investigations

- **1998** Phase II Environmental Site Assessment by ENSR (due diligence, prior to MWG acquisition of station)
- **2005** Geotechnical Investigation by KPRG
- **2010** Hydrogeologic Assessment by Patrick Engineering
- **2020** FS Area Investigation by KPRG
- Ongoing groundwater monitoring under CCR Rules and CCA

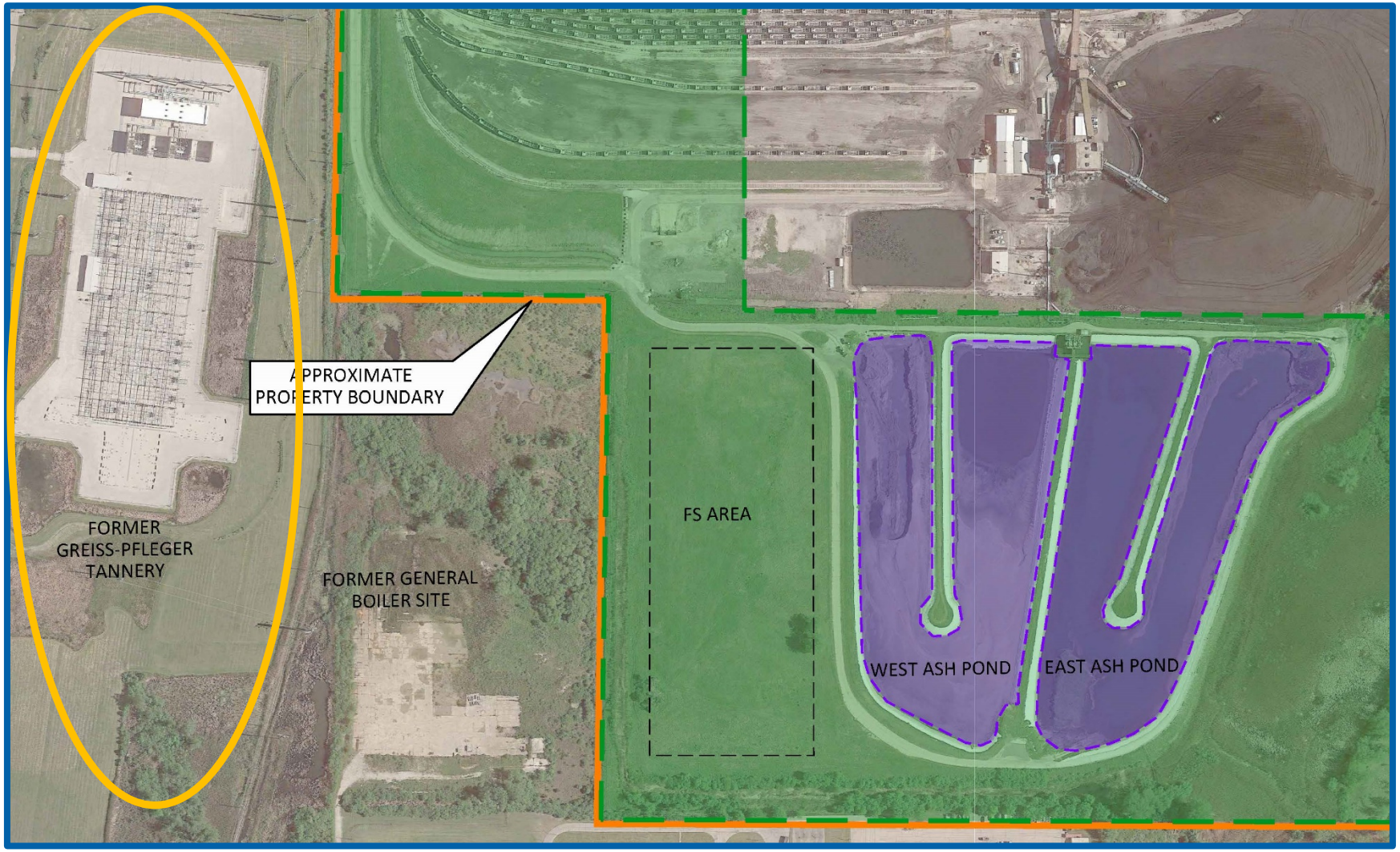
Waukegan –
1998 Phase II ESA

- **22 soil borings, 5 MWs, 13 surface soil, 6 sediment samples**
- **B-22: northern portion of FS Area (coal/ash):**
  - Other than arsenic, RCRA metals in soil below TACO Tier 1 SRO
  - Arsenic 14 mg/kg (TACO SRO=13 mg/kg)
- **Groundwater ingestion not a concern** (no potable wells)
- **Based on industrial land use/low potential for human exposure to constituents of concern**
- **No requirement under Illinois environmental law to further investigate or remediate this property**



Waukegan - Upgradient Sources

Former tannery and General Boiler causing GW contamination on MWG property

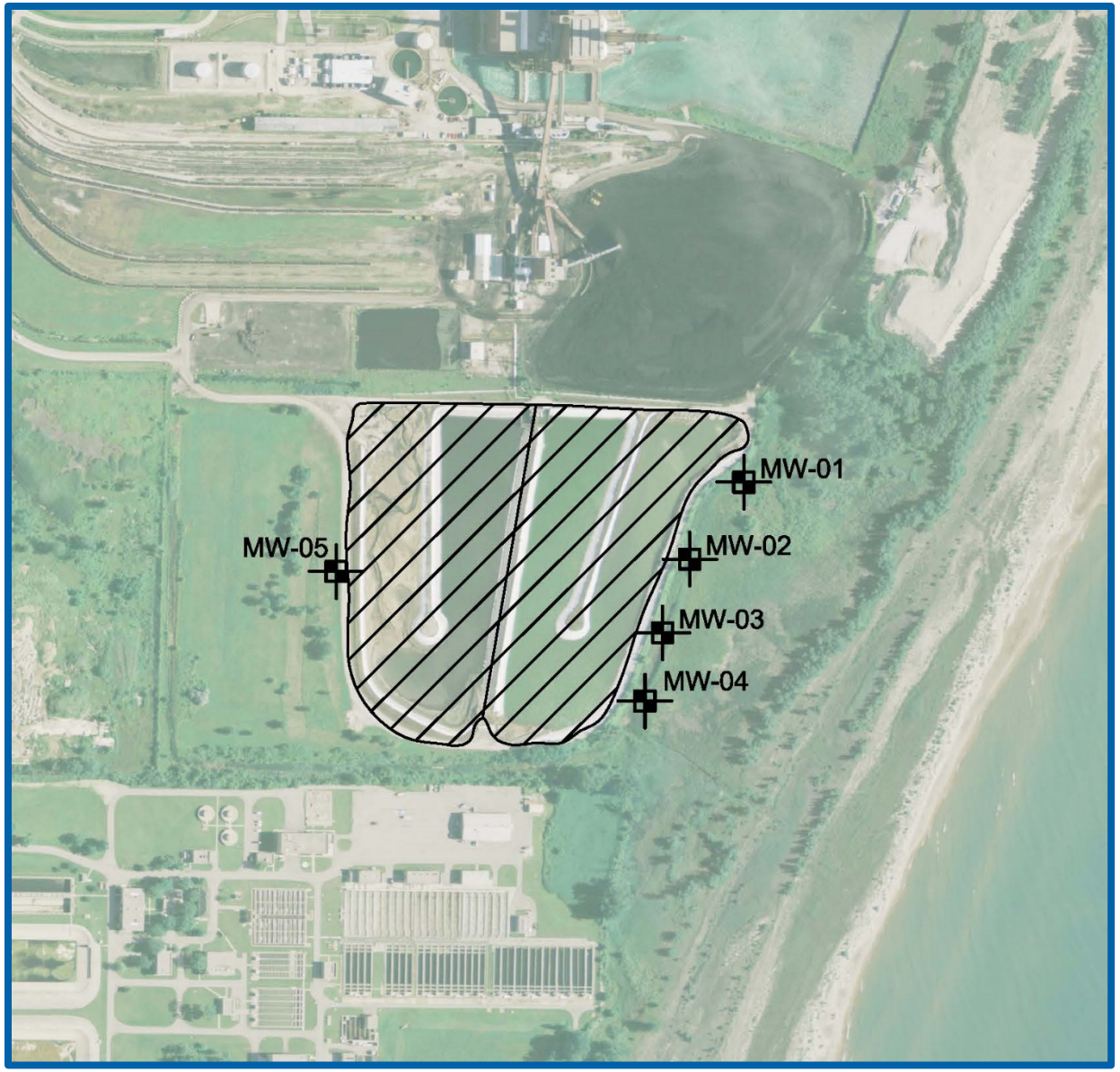


Waukegan – 2005 Geotechnical Investigation By KPRG

- **Provide information on physical characteristics of soils**

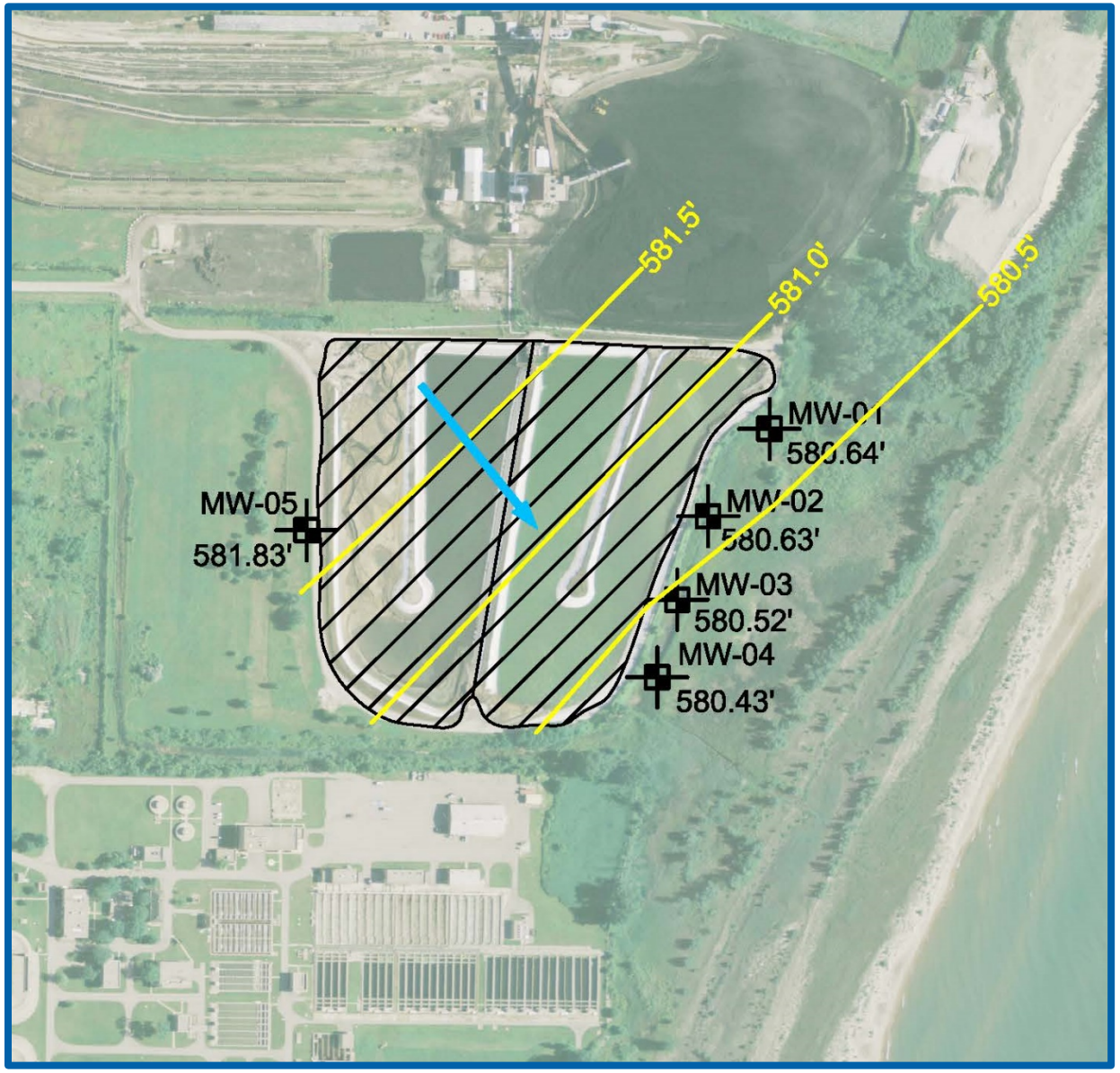
Waukegan – 2010 Hydrogeologic Investigation

- **Voluntary investigation pre-CCR regulations**
- **Installation of 5 MWs**
- **Groundwater samples collected**
- **14 potential CCR-related analytes not detected**
- **Antimony, arsenic, boron above Part 620 Class I GWQS downgradient**
  - Only one sampling event
- **Upgradient concentrations > Class I GWQS**
  - B, Mn, SO4, TDS



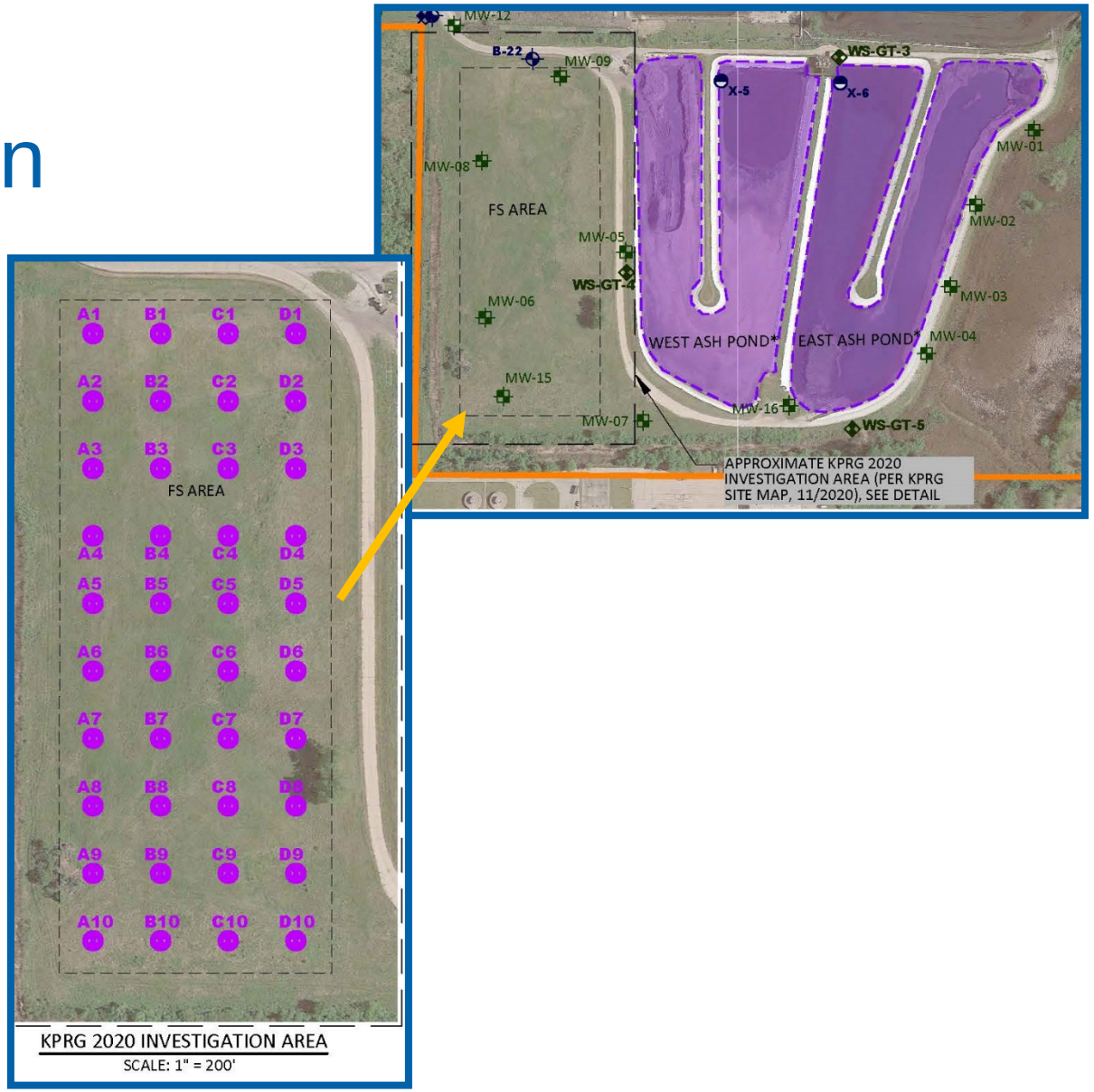
Waukegan – 2010 Hydrogeologic Investigation (cont.)

- **Lithology predominantly sand and silt underlain by sand and gravel**
- **Uppermost groundwater unit at depths ranging from 22 to 23 feet bgs**
- **Direction of groundwater flow: southeast toward Lake Michigan**
- **Water Well Search (2500 ft radius)**
  - No potable wells downgradient of ash ponds (between ponds and L. Michigan)



Waukegan –
2020 FS Area Investigation

- **40 probes 1,000' x 400' grid**
- **Coal ash ranging from near ground to 7-17 ft. below ground**
- **Natural pH LEAF for various metals associated with CCR**
- **Natural pH LEAF concentrations below Class I GQQS, except:**
  - Boron at 3 locations
  - Arsenic at 1 location

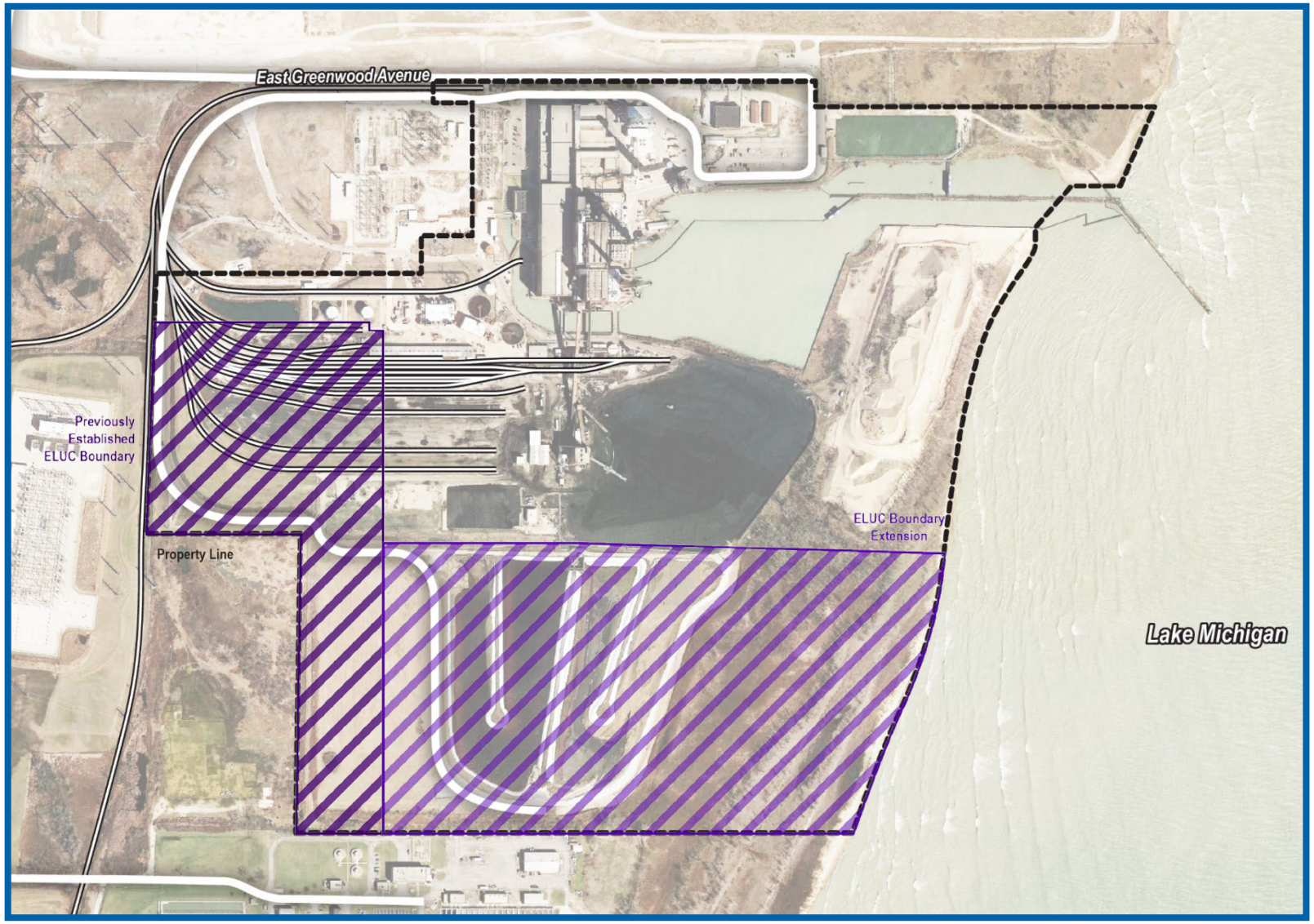


Waukegan –
Ongoing Groundwater Monitoring

- **12 monitoring wells installed around ponds and FS Area**
- **Federal Appendix III (detection) constituents**
- **Federal Appendix IV (assessment) constituents**
- **Constituents required by IL CCR Rules (both detection and assessment constituents)**
- **Quarterly monitoring since CCAs implemented in 2012**
- **Sampling/analysis of 34 constituents 4x per year x 12 MWs**

Waukegan - ELUC

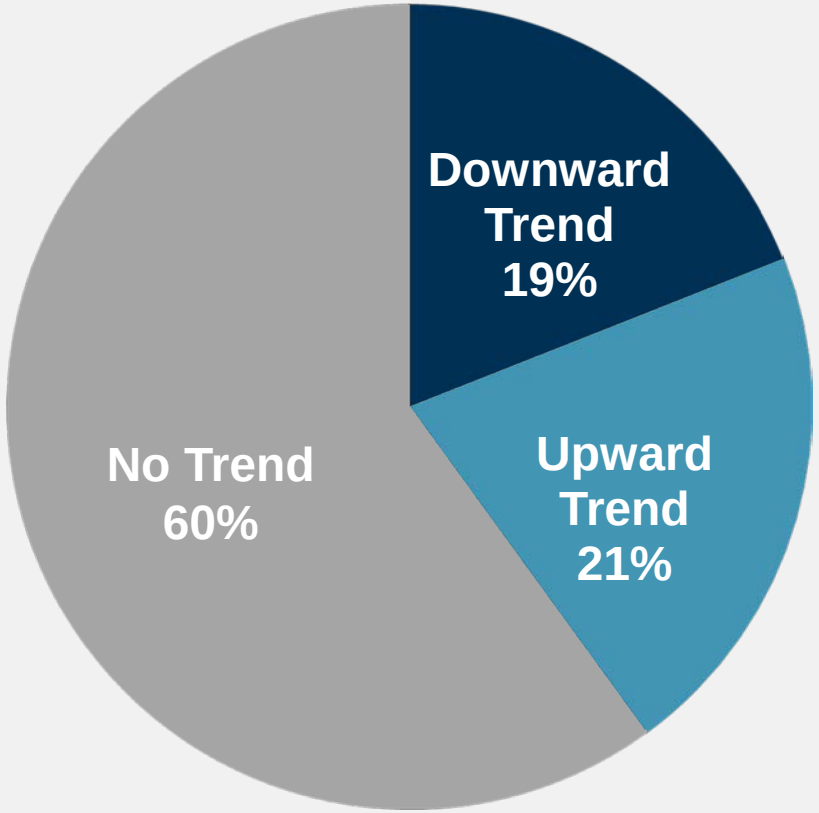
- ELUC on west side to address off-site groundwater impacts (ComEd Former Tannery)
- ELUC on east side established pursuant to 2012 CCA



Waukegan - Potential Receptors

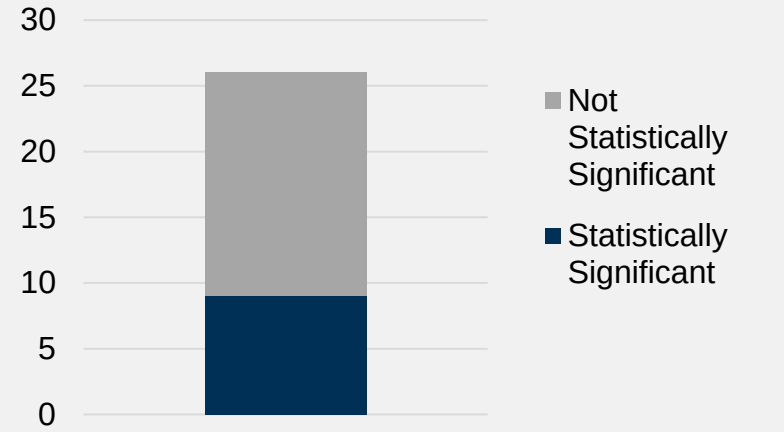
- **Surrounding Industrial Land Use**
  - Superfund site to the north
  - Former Greiss-Pfleger Leather Tanning Facility and General Boiler to the west
  - Known contamination migrating on to Station property
  - Sewage plant to the south
- **No potable use of groundwater**
  - Water well search in Patrick 2010 Hydrogeologic Report
  - Prohibited by ELUC
- **Potential ecological receptors**
  - Lake Michigan located to the East

b. Waukegan - Groundwater Trend Testing

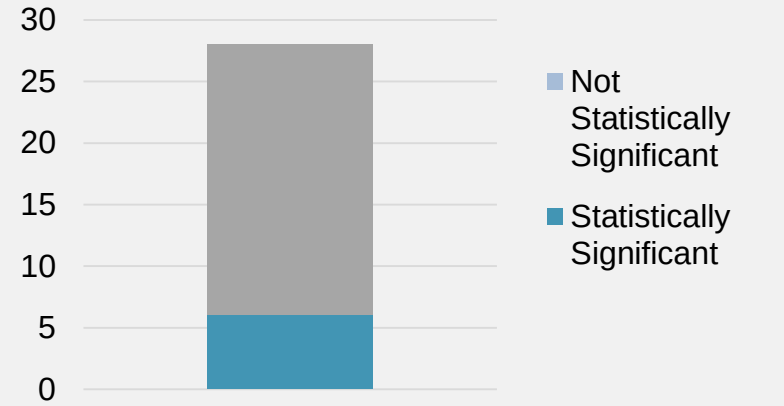


With the exception of boron at MW-2, no well with stat. sig upward trend has ever exceeded Class I GW standard.

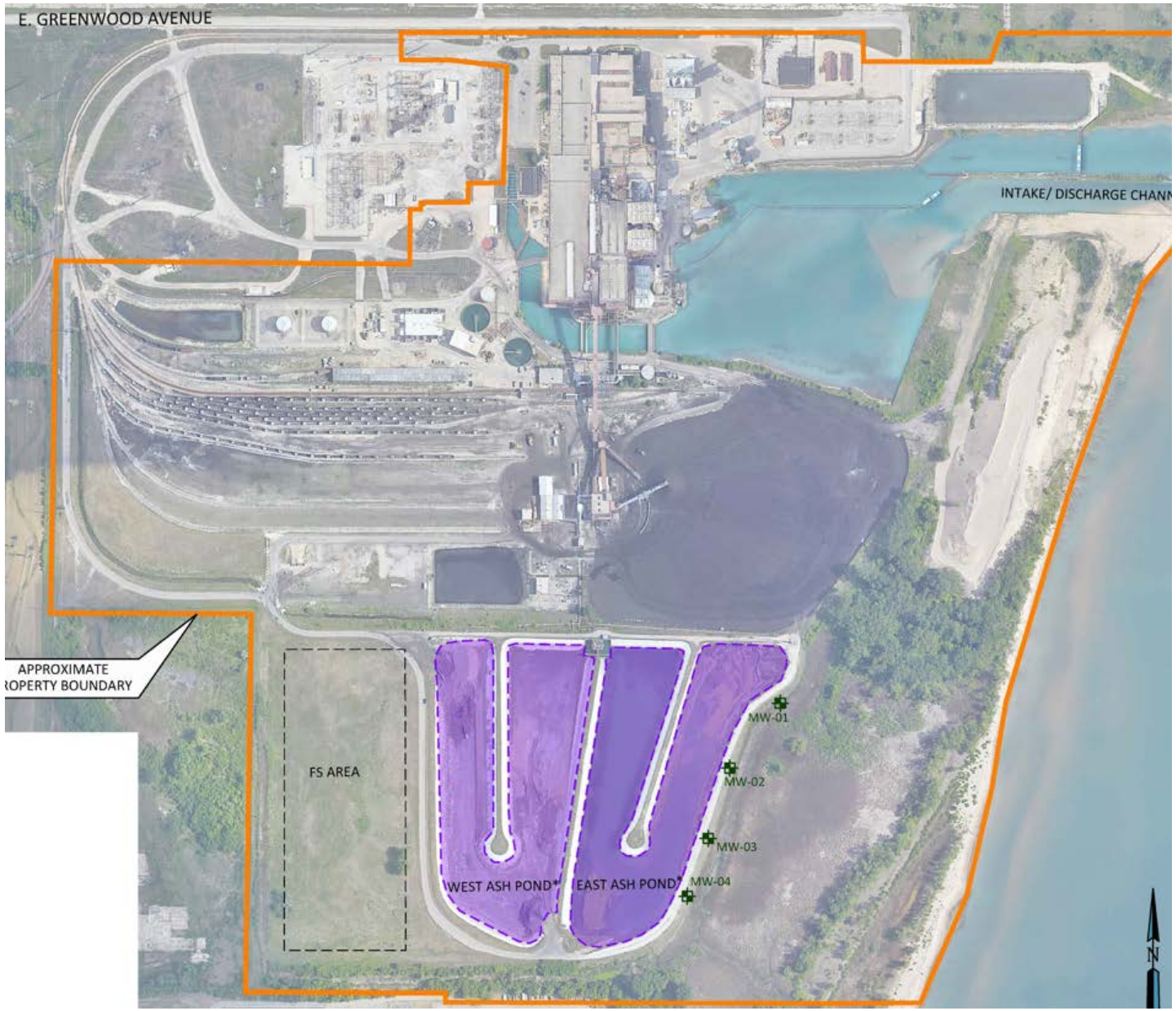
DOWNWARD TREND



UPWARD TREND



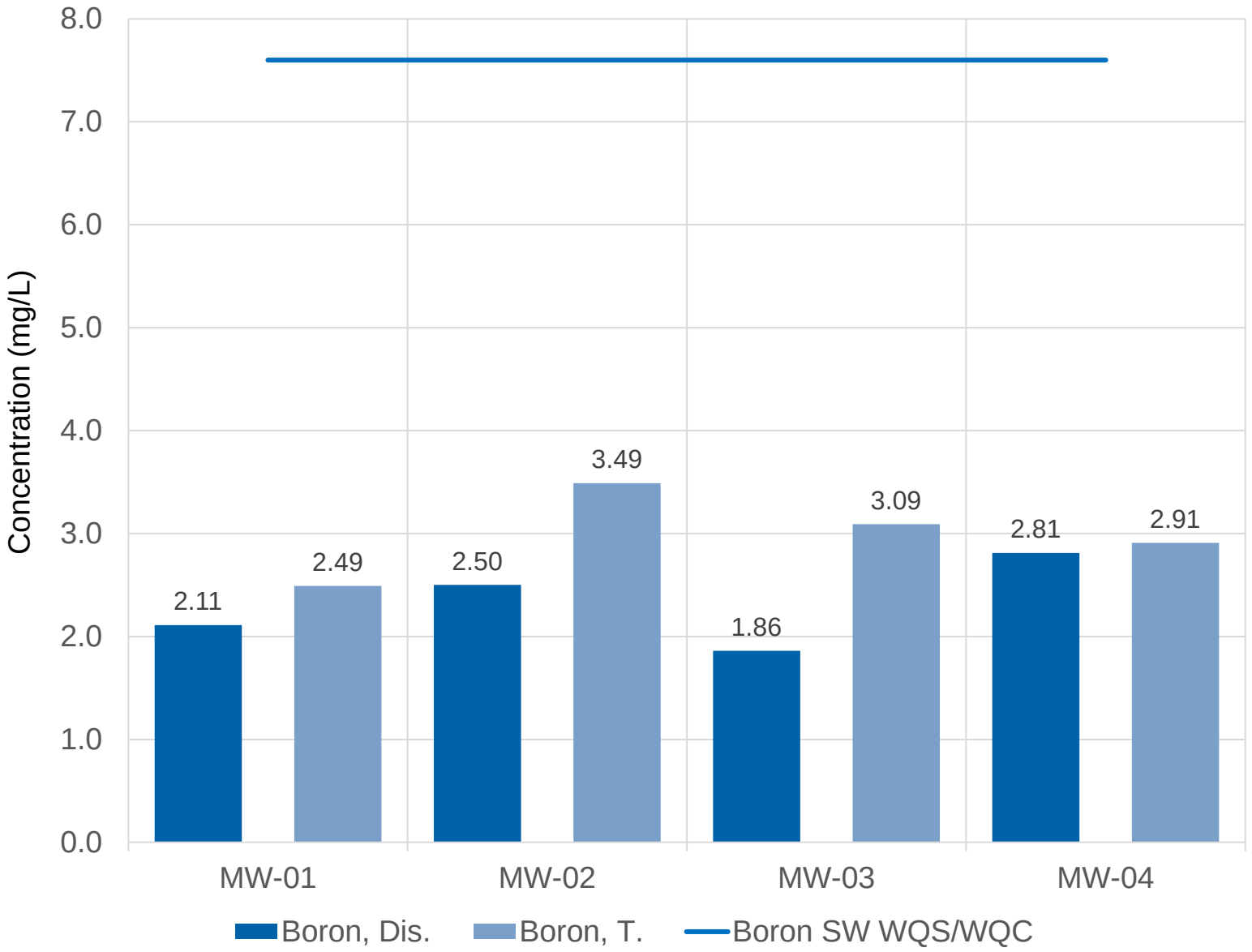
c. **Waukegan -** Potential Groundwater Impact to Surface Water Analysis



Waukegan -
Groundwater to Surface Water Analysis

- **Average groundwater concentrations from December 2010 to Q4 2020 as calculated by Sanitas™ Software**
- **Constituent non-detect in 75% or more samples;** reporting limit presented as average
- **Constituents analyzed are CCR constituents from Appendices III and IV to 40 CFR Part 257**
- **Surface Water Standard (SWS) obtained from the Illinois General Use Water Quality Standards (WQS) as defined in 35 IAC 302, Subpart B or the Illinois Water Quality Criteria (WQC) - if no WQS.**

Waukegan: Average **Boron in Groundwater** Compared to Surface Water Standards



Waukegan - Summary

- **Background data from upgradient wells appropriate to assess if regulated units impacting groundwater**
  - Regular groundwater elevation contour maps
  - No evidence of groundwater flow from ponds to upgradient wells
  - Units to be closed/repurposed
- **Trend testing of downgradient groundwater quality data indicates slightly more upward trends than downward**
  - Not entirely unexpected, given presence of off-site/upgradient impacts and uncapped FS Area
  - Remedy warranted for FS Area, so that a GMZ can be instituted
- **No unacceptable risk to onsite or offsite potential receptors**

Waukegan - Summary

- Continue to follow Federal/State CCR Impoundment Rules
- Continue groundwater monitoring
- Implement closure/repurpose of surface water impoundments
- Presumptive Remedy for FS Area
- Comply with potential new Federal/State regulations for historic fill areas

Waukegan - Presumptive Remedy: Low Permeability Cap over FS Area

- **Common closure option**
- **Cap will effectively eliminate infiltration through CCR above water table**
  - Hydrologic Evaluation of Landfill Performance (HELP) Model
  - Existing Conditions: 0.4 inches infiltration to groundwater per year
  - Proposed cap: 0.0003 inches infiltration per year (99.9% reduction)
- **Reduce time required for natural attenuation to return groundwater concentrations to Class I Groundwater Standards**
- **Pending State/Federal historic fill area rules**

Conclusions/Opinions

Weaver Consultants Group

Appropriate Action/Remedy

- Continue ongoing groundwater monitoring under Federal/State CCR Rules
- Close/retrofit surface impoundments under CCR rules
- Continue monitoring under CCAs for GMZs
- Continue evaluation of MNA
- Maintain institutional controls
- Presumptive remedy – Waukegan FS Area
- New regulations related to historic fill areas

Character/degree injury

- **Longevity and location:**
  - Stations at current locations for decades
    - 50+ years - Joliet 29/Will County
    - 100+ years - Powerton/Waukegan
  - Waukegan Station surrounded by sites with known contamination, including multiple Superfund sites
  - IL SRP site adjoining Joliet 29 Station
  - Aggregate/cement site adjoining Will County Station and CITGO Petroleum Refinery across Romeo Rd. to NE
  - Powerton located in primarily industrial area

Technical Practicability/Economic Reasonableness

- **Recommended actions are consistent with well-established Illinois TACO Regulations**
  - Typically remedy assessment per IL regulations
  - Trend testing, risk analysis and institutional controls
- **Monitoring and controls per CCR Rules**
- **Alternate remedies considered**
- **Proposed ash fill area rules**

Subsequent Compliance/Due Diligence

- **MWG voluntarily began investigation shortly after assuming operations**
- **MWG voluntarily agreed to install monitoring wells and conduct hydrogeologic investigation to cooperate with IEPA**
- **MWG voluntarily entered CCAs at each station in 2012**
- **MWG relined ponds prior to CCR rules**
- **Actively complying with CCA monitoring**
- **No enforcement action from Agency since CCAs instituted**

Duration/Gravity

- **MWG's voluntary work under CCAs led to GMZs to allow MNA**
- **Limited duration**
- **Comparison of groundwater data to surface water standards – no observed risk**
- **ELUCs preclude future exposure**
- **No downgradient receptors for potable groundwater**
- **Section 12(d) violation at Powerton brief duration (2-3 months) during winter months**

Station	Unit	Still Rec CCR?	CCR Reg Status	Previous Liner	Upgrades	Current Closure/Op Plans*	Comments	GW Mon Program	ASD
Joliet 29 (not burned coal since 2016) (possible cease burning nat gas 2023)	Pond 1	N	NA	Poz 1978	HDPE 2008 protection, warning layers	NA	CCR removed before Oct 2015 2020 study: no CCR present, IPCB affirmed inapplicability	CCA	NA
	Pond 2	N	Fed and State	Poz 1978	HDPE 2008 protection, warning layers	Pond Closure: Decon liner and repurpose pond for stormwater	CCR removed by Nov 2019 Adj Std Ap Pending before IPCB	Detection (CCR) and CCA	2021 (Cl, TDS, SO4)
	Pond 3	N	NA	Poz 1978	HDPE 2013 protection, warning layers	NA	Never rec'd CCR 2020 study: no CCR present, IPCB affirmed inapplicability	CCA	NA
Powerton	Ash Surge Basin	Y (ACD)	Fed and State	Poz bottom, hypalon sides, 1978	HDPE 2013 protection, warning layers	Retrofit dual liner/leachate collection system	Primary basin used for CCR mgmt.	Assessment (CCR) and CCA	2018 (Ap III) 2019 (As, Ba, Mo, Se, Th)
	Ash Bypass Basin	N	Fed and State	Poz bottom, hypalon sides, 1978	HDPE 2010 protection, warning layers	Retrofit dual liner/leachate collection system	Only used when ASB emptied	Assessment (CCR) and CCA	2018 (Ap III) 2019 (As, Ba, Mo, Se, Th)
	Metal Cleaning Basin	Limited use for process water - no comingled ash/water	State	Poz bottom, hypalon sides, 1978	HDPE 2010 protection, warning layers	Retrofit dual liner/leachate collection system	Not part of sluice system - used during outages as temp lay-down for dry ash. Occasionally holds process water	CCA/CCR	NA
	Secondary Ash Basin/Service Water Basin	N (Received no ash)	NA	Hypalon, before 1999	HDPE 2013 protection layers	NA	Finishing pond, Underdrain system Not intended to be regularly cleaned 2020 Study: material not CCR	CCA	NA
	Former Ash Basin (FAB)	N	Fed and State	NA	NA	North: closure by removal South: closure in-place	Bifurcated by on-site rail. CCR from north consolidated with south. IPCB found not a source.	Assessment (CCR) and CCA	NA
	Limestone Runoff Basin	N	NA	Poz bottom, hypalon sides, 1978	NA	NA	Not used for CCR since 2013 (unused and empty).	CCA	NA
	East Yard Runoff Basin	N	NA	NA	NA	NA	Used for stormwater runoff from east half of station	CCA	NA
Waukegan (no longer burns coal as of June 2022)	East Pond	N	Fed and State	Hypalon, 1977	HDPE 2003 protection, warning layers	Cap In-Place (35 IAC 845.750 and 257.102)	ACD	Detection (CCR) and modified CCA	2018 (B, pH, SO4)
	West Pond	N	Fed and State	Hypalon, 1977	HDPE 2004 protection, warning layers	Pond Closure: Decon liner and repurpose pond	Adj Std Ap pending before IPCB	Detection (CCR) and modified CCA	2018 (B, pH, SO4)
Will Co. (no longer burns coal as of June 2022)	Pond 1N	N	State	Poz 1977	Dewatering System 2013	Cap In-Place (35 IAC 845.750)	Not used since 2010. System designed to drain surface water-CCA.	CCA/CCR	NA
	Pond 1S	N	State	Poz 1977	Dewatering System 2013	Cap In-Place (35 IAC 845.750)	Not used since 2010. System designed to drain surface water-CCA.	CCA/CCR	NA
	Pond 2S	N	Fed and State	Poz 1977	HDPE 2013 protection, warning layers	Cap In-Place (257.102 and 35 IAC 845.750)	ACD withdrawn	Assessment (CCR) and CCA	2018 (Cl, F, TDS)
	Pond 3S	N	Fed and State	Poz 1977	HDPE 2009 protection, warning layers	Cap In-Place (257.102 and 35 IAC 845.750)		Assessment (CCR) and CCA	2018 (Cl, F, TDS)

*IEPA Construction Permit needed to perform pond closures. No action from IEPA on Permit Applications to date.

LEAF: Leaching Environmental Assessment Framework
ACD: Alternate Closure Demonstration
Poz: Poz-o-Pac
NLET: Neutral Leaching Extraction Test
CCR: Coal Combustion Residuals
HDPE: High Density Polyethylene
ASD: Alternate Source Demonstration

2022 Sediment Sampling/Analysis - Des Plaines River

Downstream (nearest ponds) to Upstream (towards Brandon Rd.)

	BR-2021-110	**BR-2021-109**	**BR-2021-108**	**BR-2021-107**	**BR-2021-106**	**BR-2021-105**	**BR-2021-104**	**BR-2021-103**	**BR-2021-102**	**BR-2021-101**	**BR-2021-100**
Arsenic*	<1.33	<1.31	<1.41	<1.27	<1.31	<1.33	<1.14	<1.18	<1.43	<1.32	<1.32
Cadmium*	<0.133	0.624	0.277	0.306	0.216	0.21	0.171	<0.118	<0.143	<0.132	<0.132
Chromium*	2.98	6.52	5.29	5.48	5.86	6.13	3.0	4.78	44.1	3.04	13.5
Copper	<1.33	6.48	6.05	9.68	5.08	7.98	3.83	3.87	4.34	1.36	9.98
Lead*	2.27	23	13.4	14.8	17.9	13.6	5.0	21.3	**154**	3.51	*111*
Mercury*	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Nickel	2.8	7.84	6.5	4.22	4.56	4.66	1.95	3.67	3.19	2.03	9.65
Silver	<1.33	<1.31	<1.41	<1.27	<1.31	<1.33	<1.14	<1.18	<1.43	<1.32	<1.32
Zinc	6.89	56.7	28.4	31.9	29.8	41.4	19.1	37.3	28.9	11	46.4

Units: mg/kg

Threshold Effect-Concentration (TEC) and Probable Effect Concentration (PEC)

	TEC	**PEC**
Arsenic*	9.79	33
Cadmium*	0.99	4.98
Chromium*	43.4	111
Copper	31.6	149
Lead*	35.8	128
Mercury*	0.18	1.06
Nickel	22.7	48.6
Silver	-	-
Zinc	121	459

Source: Table 7A, Appendix C, 2008 Pre-filed Burton Testimony, PCB 02-08

Units: mg/kg

*CCR constituent under 35 IAC 845.