

## **Pig's Eye Dump Task Force**

### **Agenda for Pig's Eye Dump Task Force Meeting #2**

**Friday, January 12, 2023**

9:30 a.m. to 11:00 a.m.

Lower Level - MPCA 520 Lafayette Road, St. Paul, MN 55155

- 1. Welcome and introductions (9:30 a.m.)**
- 2. Site visit re-cap (9:35 a.m.)**
- 3. Presentation and discussion of roadmaps and timeline (9:40 a.m.)**
- 4. Presentation on contamination and remediation (10:00 a.m.)**
- 5. Discussion on contamination and remediation (10:30 a.m.)**
- 6. Public comment (10:50 a.m.)**
- 7. Adjourn (11:00 a.m.)**

## Pig's Eye Dump Task Force

### Notes for Pig's Eye Dump Task Force Meeting #2

**Friday, January 12, 2023**

9:30 a.m. to 11:00 a.m.

Lower Level - MPCA 520 Lafayette Road, St. Paul, MN 55155

#### Members in Attendance

- Dan Scollan, Water Resources Ecologist, Department of Natural Resources (DNR)
- David Bell, Environmental Research Scientist, Minnesota Department of Health (MDH)
- Sam Paske, Planning Assistant General Manager, Metropolitan Council
- Jimmy Francis, Mayor, City of South St. Paul
- Bill Sumner, Council Member, City of Newport
- Melanie McMahon, Executive Project Lead – Mayor's Staff, City of St. Paul
- Victoria Reinhardt, Commissioner, Ramsey County
- Dave Magnuson, Waste Regulation Supervisor, Dakota County
- Caleb Johnson, Environmental Program Manager, Washington County
- Nathan Wallerstedt, Project Management Branch Chief, Army Corps of Engineers - Saint Paul District
- Kirk Koudelka, Assistant Commissioner, Minnesota Pollution Control Agency (MPCA)

#### Other Contributors

- Hunter Vraa, MPCA
- Cliff Shierk, MPCA
- Narayanan Raghupathi, WSP
- Emma Driver, WSP
- Liz Wiggen, Zan Associates
- Kara Van Lerberghe, Zan Associates

#### Presenters

- Hunter Vraa, MPCA
- Narayanan Raghupathi, WSP

#### 1. Welcome and Introductions

Hunter Vraa (MPCA) kicked off the meeting and thanked everyone for attending. He introduced himself as the Pig's Eye Task Force Coordinator and passed it off to the guests for introductions. Narayanan Raghupathi (WSP) and Emma Driver (WSP) are providing technical support to the MPCA on the Pig's Eye Dump site. Cliff Shierk (MPCA) is the supervisor of Closed Landfill Unit 2. Liz Wiggen and Kara Van Lerberghe are from Zan Associates and are working on communications and meeting facilitation for the task force. The task force members then introduced themselves by stating their name, title, and their organization.

Kirk Koudelka (MPCA) welcomed and thanked everyone for attending. He prefaced that the task force will be learning details about the site and building a strong foundation to move forward during the meeting. In the following meeting, the task force will start to look at remedial and restoration options for the site. Kirk said he is looking forward to the potential of the site and is excited to work with the task force.

## **2. Site Visit Recap**

Hunter Vraa (MPCA) gave the background on the site visit to Pig's Eye Dump. He opened it up to the task force to provide any thoughts or comments on the site visit. David Bell (MDH) said it was his first time being at the site and noted that getting to the site is challenging and it is a nice area to walk around but can tell it needs some work. Dave Magnuson (Dakota County) said that as a landfill inspector, he noticed a lot of areas of the site that need work and can clearly see what needs to be remediated. It helped him to see the location and understand how difficult it is to access. He also noted that the site is in an industrial area and was concerned to see Battle Creek running through the dump site and emphasized that a lot of work needs to be done. Caleb Johnson (Washington County) pointed out that the wood waste site was eye-opening to see in person and that it is also a beautiful natural area. He shared that the wood waste site is an important resource for the entire Metro wood waste disposal system. Bill Sumner (City of Newport) said he visited in the summer and that it was helpful to see how to get to the site and how the water runs through it. He is thankful to be working with the group on the future of this site.

## **3. Presentation of Timeline**

Hunter Vraa (MPCA) gave a background on the East Side River District Convening, went over who attended the convening, and shared that the MPCA presented an overview of the work at Pig's Eye Dump and provided task force updates. He noted that there are currently master's degree students who are working on future use designs of the site. He said there is a lot of interest in doing a similar meeting with the public and the task force to share ideas.

Hunter went over upcoming deadlines for the final report, which the remediation and restoration plans will be a part of. He went over the timeline of the task force and pointed out that they are still in the background and foundation stage. During this meeting, the task force will be moving into the remediation strategy workshopping phase with WSP. Once the remediation strategy is finalized, the task force will discuss restoration and the future use of the park, and then funding in the final phase.

Hunter pointed out that the strategy that the task force comes up with will be a part of the final remediation plan. A task force member asked about the timing of the plan and Hunter clarified that that will be highlighted in WSP's presentation later in the meeting. Kirk Koudelka (MPCA) noted that it will be helpful for the task force to have a clear vision of the site for when clean-up is conducted and will help guide that process.

## **4. Presentation on Contamination and Remediation**

Narayanan Raghupathi (WSP) went over his background working on the Pig's Eye Dump project. He shared that they will go over site history, types of contaminants, regulatory framework, what remedial investigation has been done so far, and then discuss the Superfund process and timeline. He started by going over the site history and discussed what types of contaminants are found at the site, where they come from, and their effects on the environment and human health. Narayanan showed where they are in the Superfund process and what comes after the remedial investigation phase.



One member of the public shared concerns about the site, per- and polyfluoroalkyl substances (PFAS), and health effects from the site. Kirk Koudelka (MPCA) responded and said he would address MPCA's approach to PFAS after the meeting and highlighted that there would be time for public comment at the end of the meeting.

Narayanan continued the presentation and highlighted the complexities of the site including the contaminants, nearby sources, and the composition of the site. He shared information on what remedial actions have been conducted on the site so far, what data has been found, and what kinds of challenges there are with the remediation process.

## **5. Discussion on Contamination and Remediation**

Liz Wiggen (Zan) kicked off the discussion portion of the meeting with a few questions for the task force to think about. Dave Magnuson (Dakota County) asked about when parts of the feasibility study would be completed and the overall timeline. Narayanan Raghupathi (WSP) responded that the plan would be to have these parts of the study wrapped up in the next year or so and there will be data for the task force to look at.

Victoria Reinhardt (Ramsey County) emphasized that this is a large issue, appreciated the detail in the presentation, and is hopeful that they will be able to address the issue together. She wants to make sure they stay on track and don't get discouraged from making progress depending on the problem or amount of information available. She pointed out that there is national attention following the site and their decisions of how to manage the site will make a difference.

Sam Paske (Metropolitan Council) shared some background on the wastewater treatment plant near the site and pointed out that they have concerns with the interaction of groundwater at Pig's Eye Dump. Narayanan expanded and emphasized the importance of understanding water flow at the site.

Dave Magnuson (Dakota County) clarified why some of the sampling that was previously conducted for certain contaminants was stopped due to current remediation activities. Narayanan said as they discuss remedial strategy, they may find that some of the previous sampling may need to be continued again for these contaminants depending on the data. Dave asked if the current data they have was enough to make decisions and Narayanan said they will be exploring if additional data is needed as more information is gathered. Kirk pointed out that some of the remedial action that has already been conducted was done to address these specific contaminants.

Dan Scollan (DNR) asked for details on how much sampling has been done on the nearby Fish Hatchery and what their understanding is of Fish Hatchery being a contaminant source. Narayanan said they are currently discussing the relationship between Fish Hatchery and Pig's Eye Dump with the MPCA, and it is a work in progress.

Melanie McMahon (City of St. Paul) asked for details on how they decide when to stop sampling for certain contaminants or when to start sampling for new contaminants. Narayanan explained that certain contaminants were dropped because they were meeting standards at the time sampling was stopped. He said this is something they could investigate in more detail in future meetings.

Caleb Johnson (Washington County) pointed out that there is a large private rail yard near the site and wondered what gap that causes in the data. Narayanan agreed that it is a challenge for the site and is something



they will work through as they collect data. Caleb asked a follow-up question on the geology of the site and Narayanan shared what data they have collected so far and how that relates to the geology of the site.

Bill Sumner (City of Newport) asked a clarifying question on PFAS contaminants, and if this site is one of the highest contamination sites in the country. Narayanan was unsure how it ranks nationally but said Minnesota is at the forefront of addressing PFAS.

Nathan Wallerstedt (Army Corps of Engineers) thanked WSP for the presentation and shared that it helped him get a better understanding of the site and what kinds of remediation efforts are feasible.

Jimmy Francis (City of South St. Paul) shared that he is wondering about the history of the site and what was there before the Fish Hatchery. Narayanan agreed that there are a lot of unknowns about the full history of the site but that this information is important to understand and see how it all fits together.

## **6. Discussion on Scheduling**

Hunter Vraa (MPCA) briefly shared that there are discussions about scheduling task force meetings and public access to the meetings.

## **7. Public Comment**

Liz Wigger (Zan) kicked off the public comment portion of the meeting and went over guidelines for sharing comments.

One participant is a former city council member of St. Paul and shared that he appreciated comments from Victoria Reinhardt (Ramsey County) on addressing the site. He shared concerns about the pollution at the site and how it affects human health and wildlife. He emphasized that he would like to see the site cleaned up and restored as a natural area.

One participant from the Wakan Tipi Awanyankapi non-profit organization in St. Paul and shared that their organization stewards a site upriver of Pig's Eye Dump. She would like more information on how Tribal Nations are being involved in the management of this site. Kirk Koudelka (MPCA) responded sharing that the MPCA has more work to do on incorporating Tribal Nations on this type of work.

One participant shared that she lives near the site and frequently walks with the group Pig's Eye Park Friends. She would like to hear more information on the railroad contamination near the site and had concerns about some of the previous contamination and wood and construction waste. She would also like to get more information on the wildlife at the site and would like to see that be taken into consideration. Kathy shared that she would like to see the site restored and more easily accessed.

One participant from Urban Roots and wants more information on whether there is any signage about the current pollution and has concerns about public health and exposure.

Kirk said they can have more conversations with the Department of Health in terms of exposure and will follow up on them. He also asked that people share any information they have on restoration plans which will be helpful as they move forward. He also addressed the concern about railroad stormwater collection and would share more information after the meeting.

One participant shared his concerns that the contamination has on human health. He shared information with the task force on previous contamination. He ended by emphasizing concerns about PFAS throughout the entire state, beyond this project.

Kirk shared information on what the MPCA has been doing to address and manage PFAS across Minnesota. He highlighted some of the challenges that were brought up during the meeting and discussed some of the ways they currently know how to remove PFAS. He shared information on what research is being done to continue removing PFAS from our systems and finding ways to destroy them. He ended by going over what rulemaking is currently happening to address additional PFAS pollution.

Victoria emphasized the importance of paying attention to what is happening right now with managing these types of projects.

## **8. Adjourn**

Kirk Koudelka (MPCA) adjourned the meeting and thanked everyone for attending. He wants to discuss how to promote more public participation in future meetings and looks forward to the next meeting and discussing solutions.



## Pigs Eye Dump Task Force Meeting #2

Hunter Vraa | Pigs Eye Task Force Coordinator

January 12, 2024

# Pigs Eye Dump Task Force – Welcome and Introductions



# Welcome and Introductions

- Consultant introductions
- Taskforce members to share:
  - Name
  - Title
  - Organization



# Site Visit Re-Cap

# Site Visit Re-Cap



# East Side River District Convening Re-Cap

## EAST SIDE RIVER DISTRICT 2023 CONVENING

*December 14, 2023*

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### AGENDA:

9:30 - 11:00am: 10-minute updates from each presenter + brief question period

11:00 - 11:30am: Networking and Discussion

### GOAL OF THE CONVENING:

To share updates, discuss implementation strategy, challenges and opportunities, all to be aware of and support one another's work and identify potential partnerships

### 2023 PRESENTERS:

Army Corps of Engineers

City of Saint Paul

Great River Passage Conservancy

MPCA Pig's Eye Task Force

Pig's Eye Park Friends

University of Minnesota

Urban Roots

Wakan Tipi Awanyankapi

MPCA Presented on overview of work at Pig's Eye as well as Task Force updates

- Groups present
- Lessons Learned

# Presentation of Timeline

# Scope/Deliverables

- Prepare and submit final report to the legislature
  - Due February 15, 2026.
- Develop recommendation for a remediation plan(s).
  - Will be included in final report.
- Develop recommendation for a restoration plan(s).
  - Will be included in final report.
- Submit annual reports to the members of the legislature detailing updates to the Task Force's Progress.
  - Due annually in March.

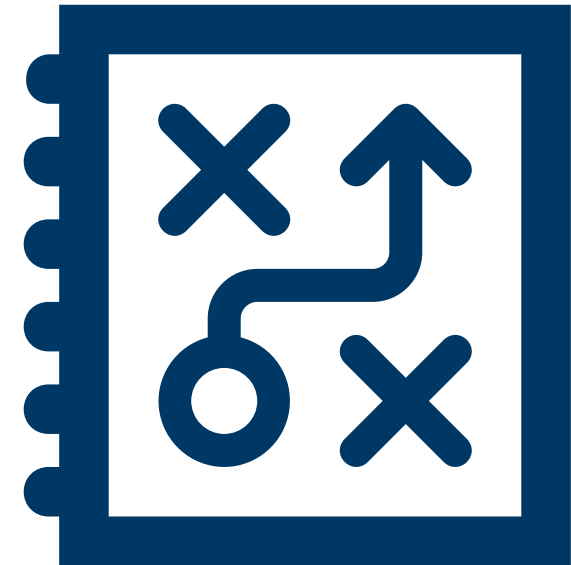


# Overall Timeline

Dates	Content	Details
September 2023 – November 2023	Background and Foundation of Task Force	Process will be conducted using presentations from the MPCA on the background and foundation.
January 2024 – July 2024	Remediation Strategy Workshopping	Process will be conducted using WSP to present broad remediation strategies and refining each iteration with input from the Task Force and the MPCA.
September 2024 – July 2025	Restoration Plan Workshopping	Process will be conducted using ABT to present specific restoration plans and refining each iteration with input from the Task Force.
July 2025 – November 2025	Funding Plan Workshopping	Process will be conducted using the MPCA to present funding options and refining and adding to it with input from the Task Force.

# Remediation Strategy vs Plan

- The Task Force's recommended remediation strategy will be one of many elements that is used to make the remediation plan by the MPCA.
- The MPCA will use the remediation strategy to guide the final remediation plan.
- The final remediation plan must account for many variables, particularly funding and the Superfund process.

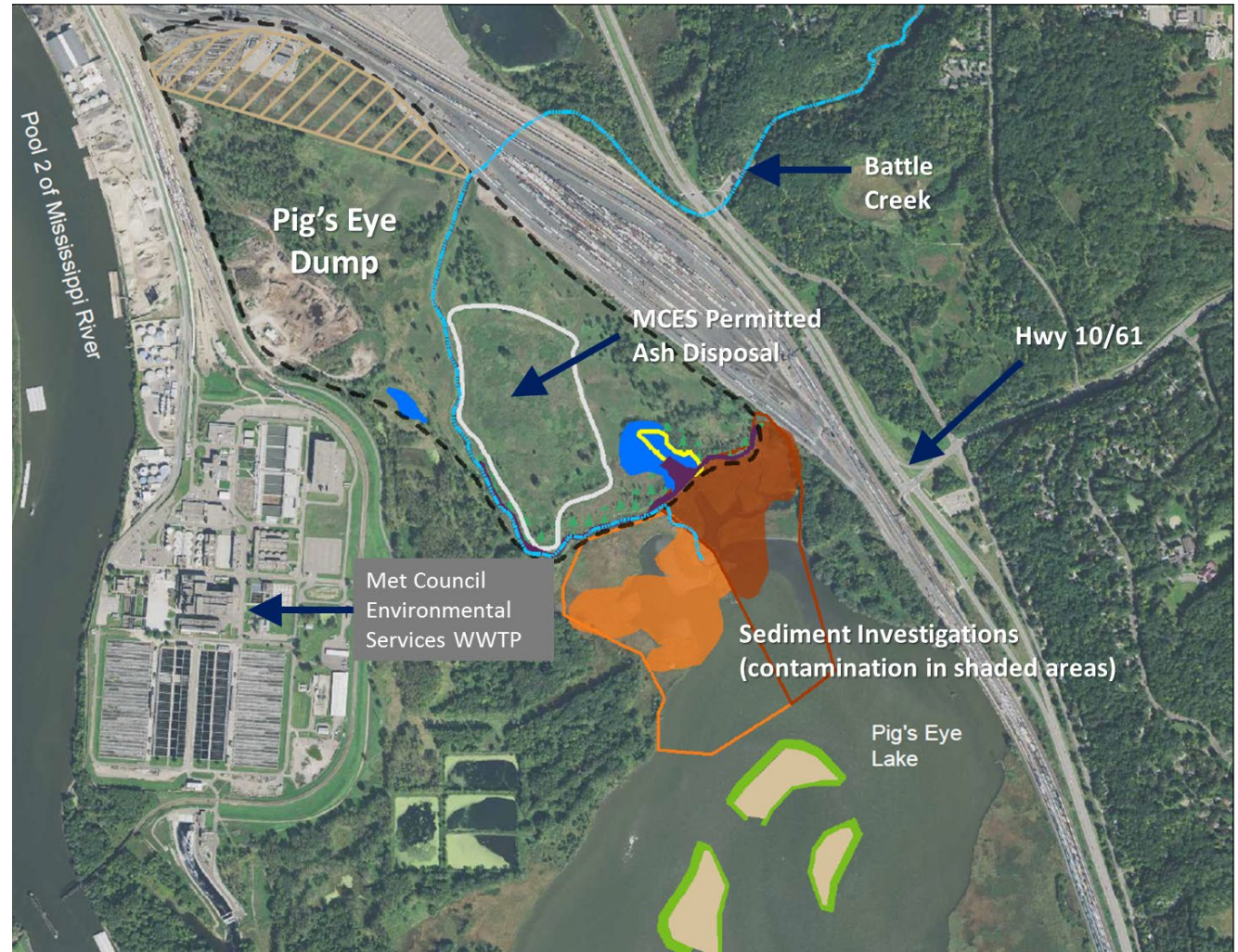




# Pigs Eye Dump Task Force Remedial Investigation Background & Update

# Agenda

- Site History/Background
- Contaminants of Concern
- Regulatory Framework
- Remedial Investigation Update
- Superfund Process/Timeline



# Pig's Eye – A Changing Story

- Early on VOCs, SVOCs, PCBs, and metals were the focus of investigations
  - Groundwater and Surface Water sampling has been discontinued based on decreasing trends below Surface Water quality criteria
- First cleanup was completed before the extent of sediment contamination was determined and before PFAS and 1,4-dioxane were sampled at the dump
  - Monitoring for PFAS begin in 2009
  - 1,4 dioxane was first sampled for in 2021



# Pig's Eye – A Changing Story

- Metals
  - SVOCs and metals (cadmium, copper, lead, and zinc) were detected above SQTs
  - Human-health related Sediment Screening Values (SSVs) were exceeded for cadmium
- PFAS
  - PFAS concentrations in well, creek, and lake water detected above MPCA surface water criteria.
- Landfill Gas
  - Methane is of special concern due to its potency as a greenhouse gas.
- 1,4-dioxane
  - 1,4-dioxane Groundwater concentrations detected above the MDH Health Risk Limit (HRL).



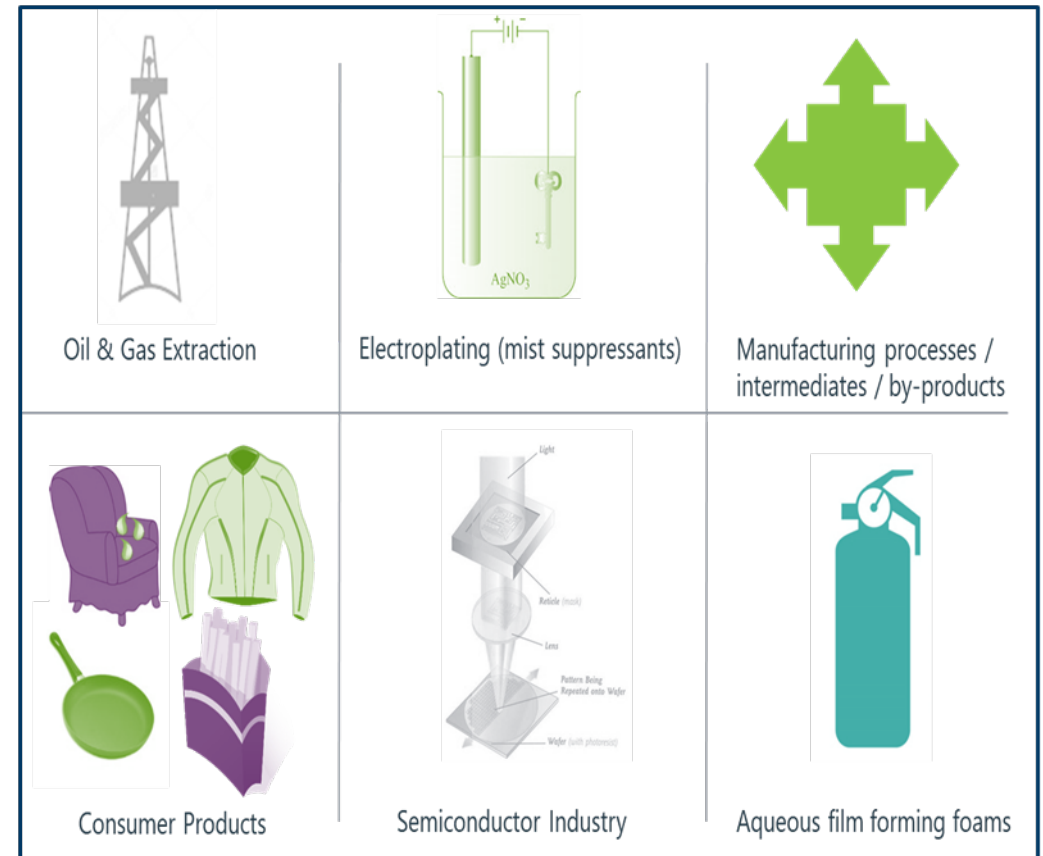
# Per-and polyfluoroalkyl Substances (PFAS) – Background

- Family of thousands of chemicals
- Human-made compounds
- Shortest and strongest bond in nature
- Provides oil, water, stain, and soil repellency, chemical and thermal stability, and friction reduction
- Persistent in nature
- Detected in blood serum
- Potential human effect on kidney, liver, testicular cancer, thyroid, cholesterol



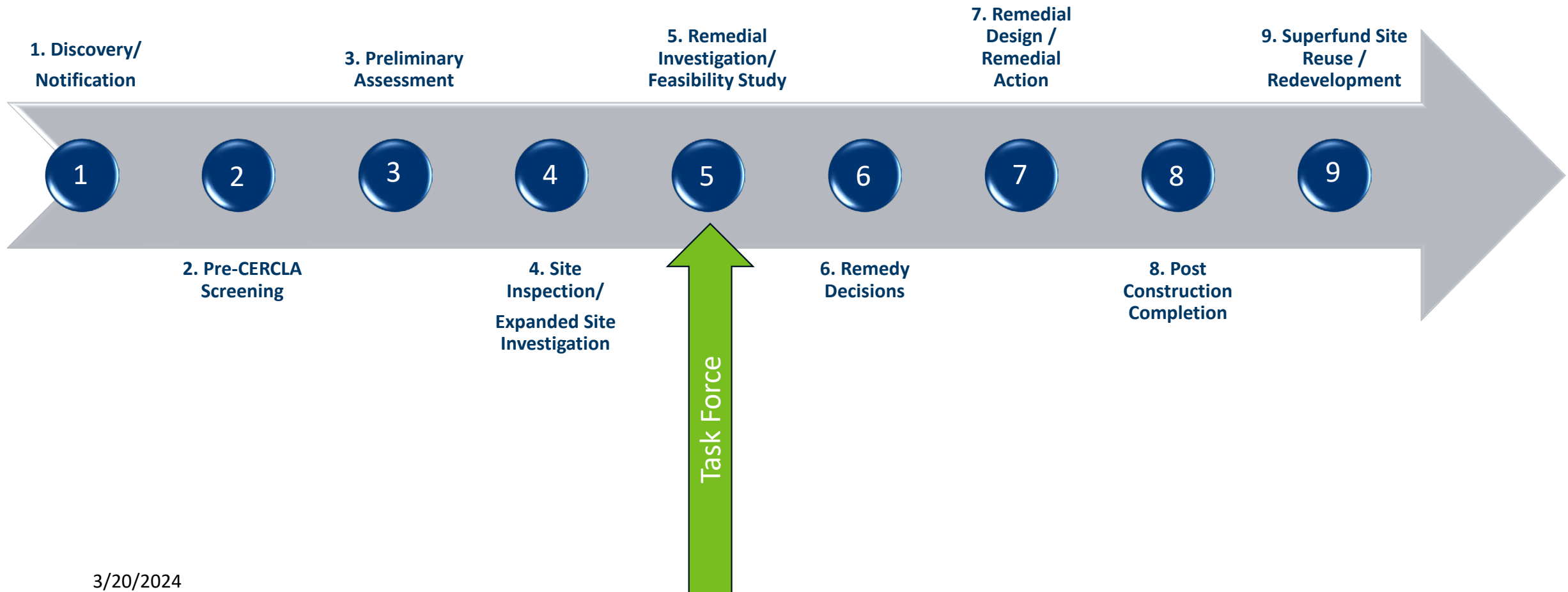
# Pigs Eye Dump – Potential PFAS and 1,4-dioxane Sources

- Typical PFAS and 1,4-dioxane sources at landfills–
  - Contaminated industrial waste
  - Sewage sludge from wastewater treatment facilities
  - Waste from site mitigation
  - Consumer wastes
- Pigs Eye - Over 8 million cubic yards of municipal, commercial, and industrial waste – over 200 acres
- Pigs Eye - Wastewater treatment incinerator ash on 31 acres

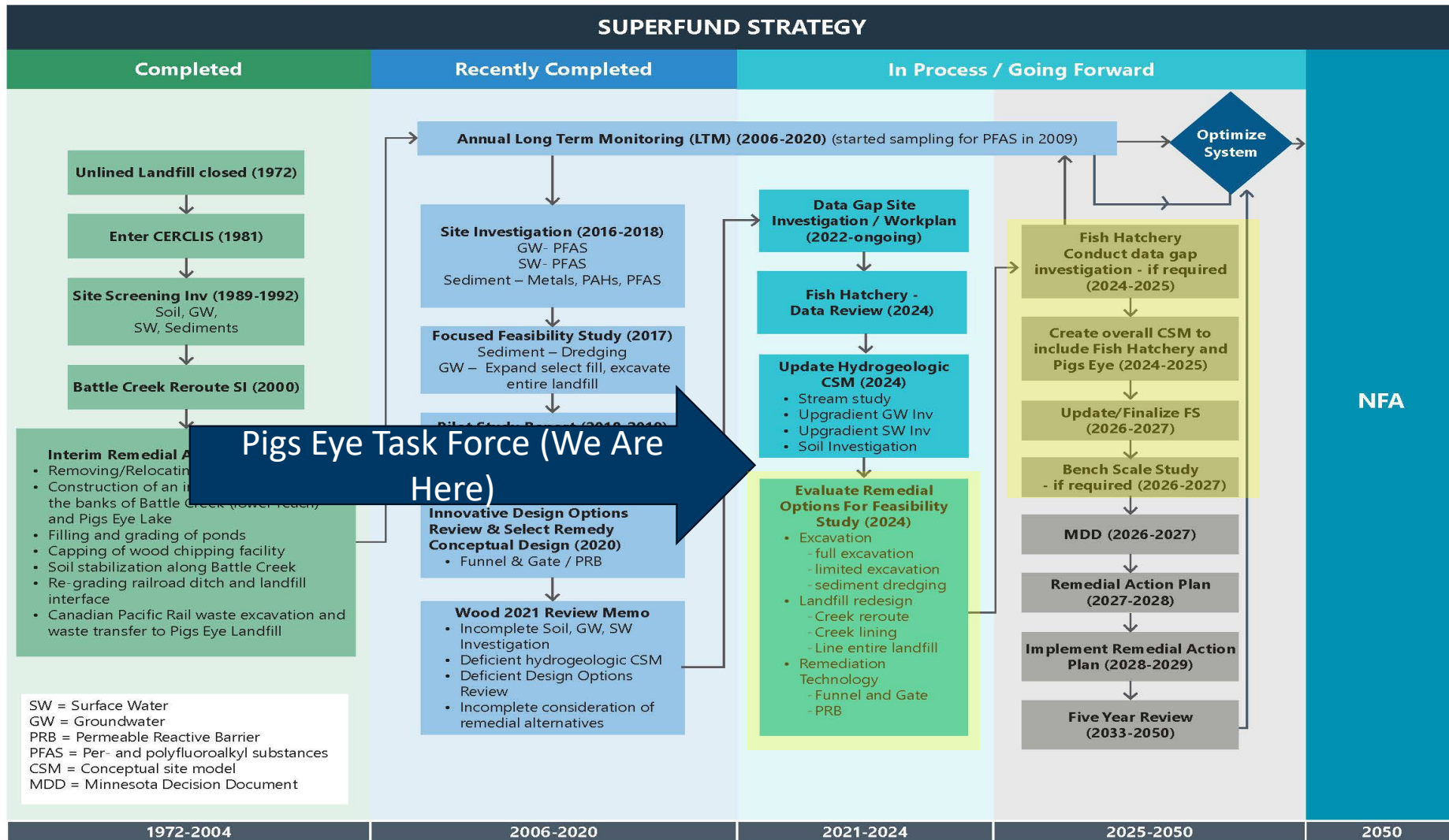


# Superfund Process

## Generalized Superfund Process



# Pig's Eye Superfund Process -- Timeline



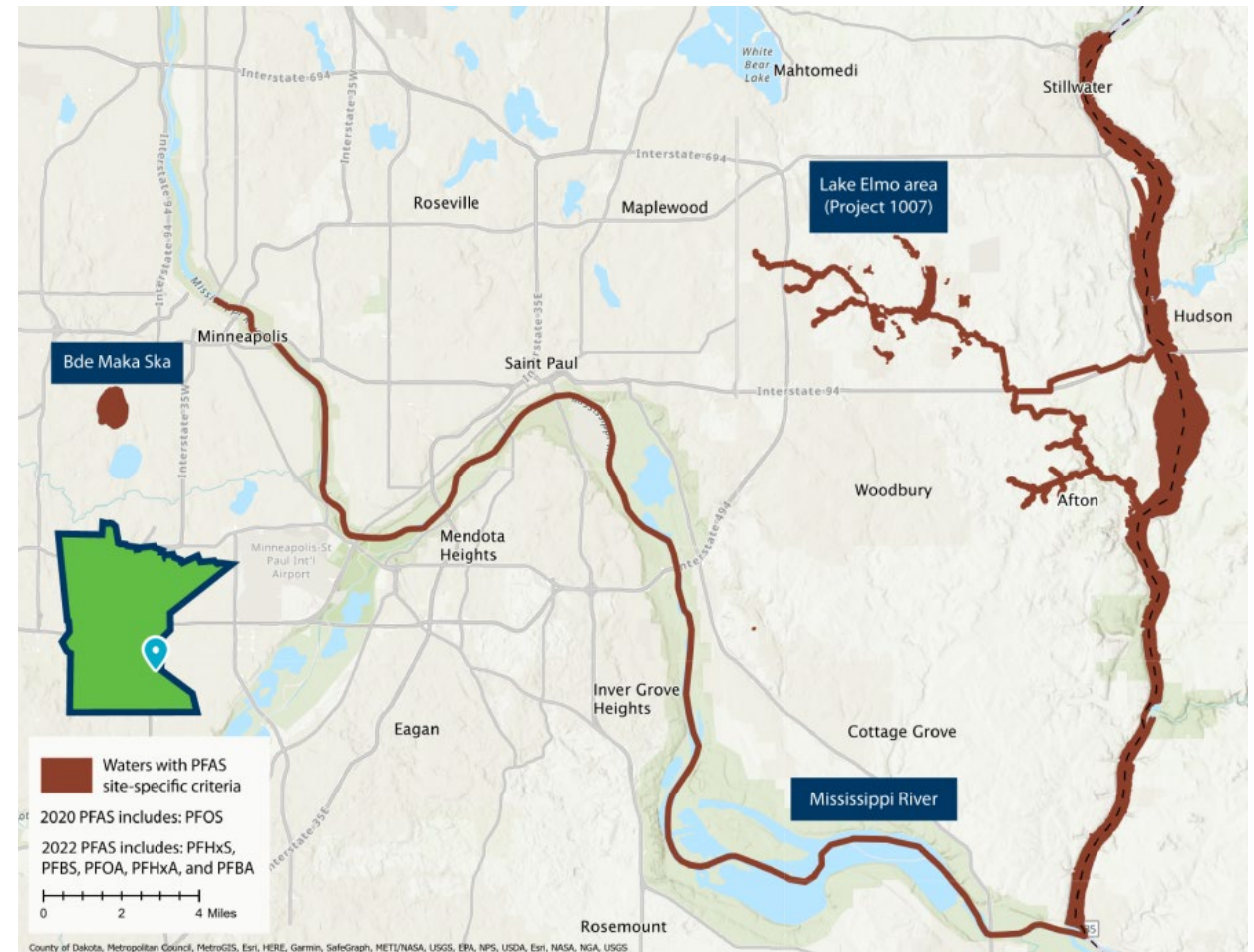


# Site Investigation Complexities

- Multiple contaminants (i.e., VOCs, SVOCs, PFAS, 1,4-dioxane, metals and PCBs)
- Upgradient source – Fish Hatchery
- Undefined area of impact – upgradient and crossgradient
- Complex hydrogeology – Battle Creek, Pigs Eye Lake, previous excavations/remedial actions
- Multiple impacted media – soil, groundwater, surface water
- Changing standards/regulatory environment

# Regulatory Framework

- MPCA and MDH Development of **Site-Specific Water Quality Criteria (2020 – 2024)**
- Not Statewide Standards – applicable to targeted waterbodies in metropolitan area water where PFAS have been detected at highest concentrations
  - Mississippi River Pool 2
- Standards developed for six PFAS (PFOS, PFOA, PFHxA, PFBA, PFHxS and PFBS)
- Standards much lower than previous health risk limits. PFOS example:
  - Water 0.05 ng/L
  - Fish Tissue: 0.37 ng/g

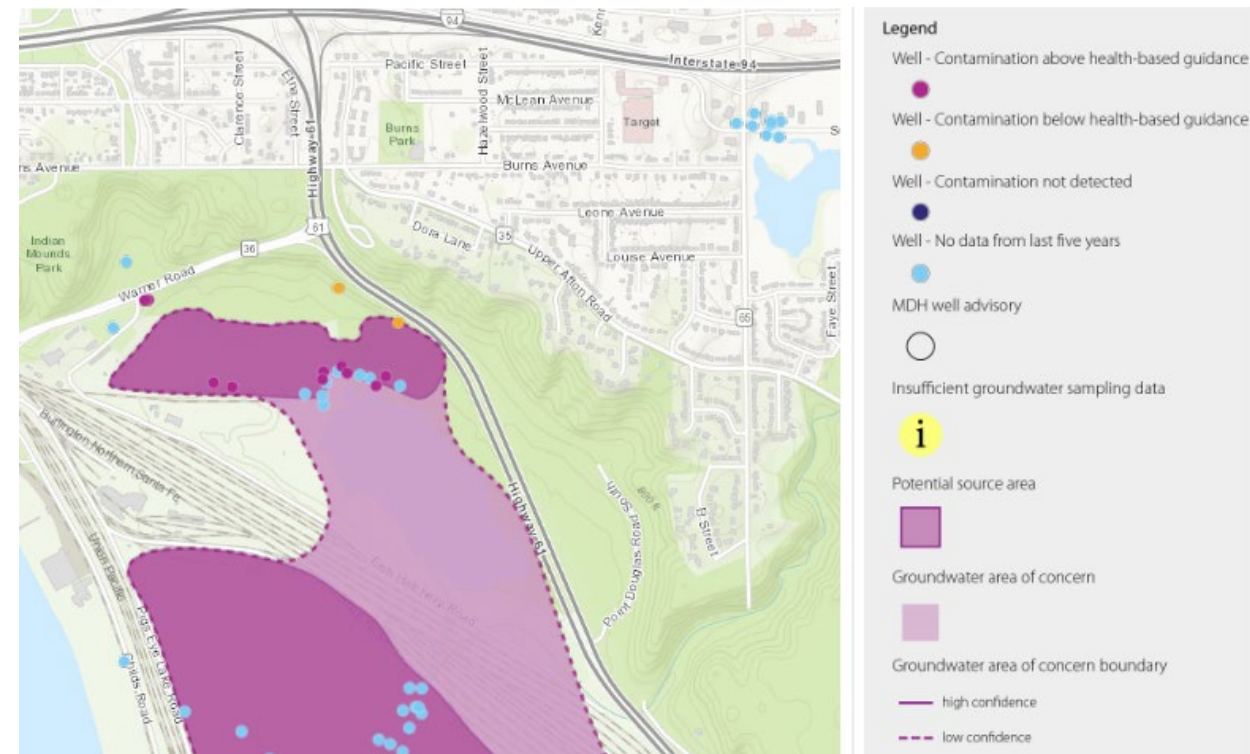


Source: <https://www.pca.state.mn.us/business-with-us/site-specific-water-quality-criteria>

# Remedial Investigation Update

- Ongoing RI activities require comparison to new site-specific water quality criteria
- Recent focus of the RI in concert with Task Force requires evaluation of both Pig's Eye Landfill and nearby groundwater (Regional Approach)
  - Additional up-gradient /up-stream assessments to evaluate additional sources of PFAS contamination
  - PFAS also detected at the adjoining Fish Hatchery Site

Overview from MPCA Groundwater Contamination Atlas



Source:

<https://webapp.pca.state.mn.us/cleanup/search/superfund?text=Fish%20Hatchery%20Dump&siteId=208492-AREA0000000003>

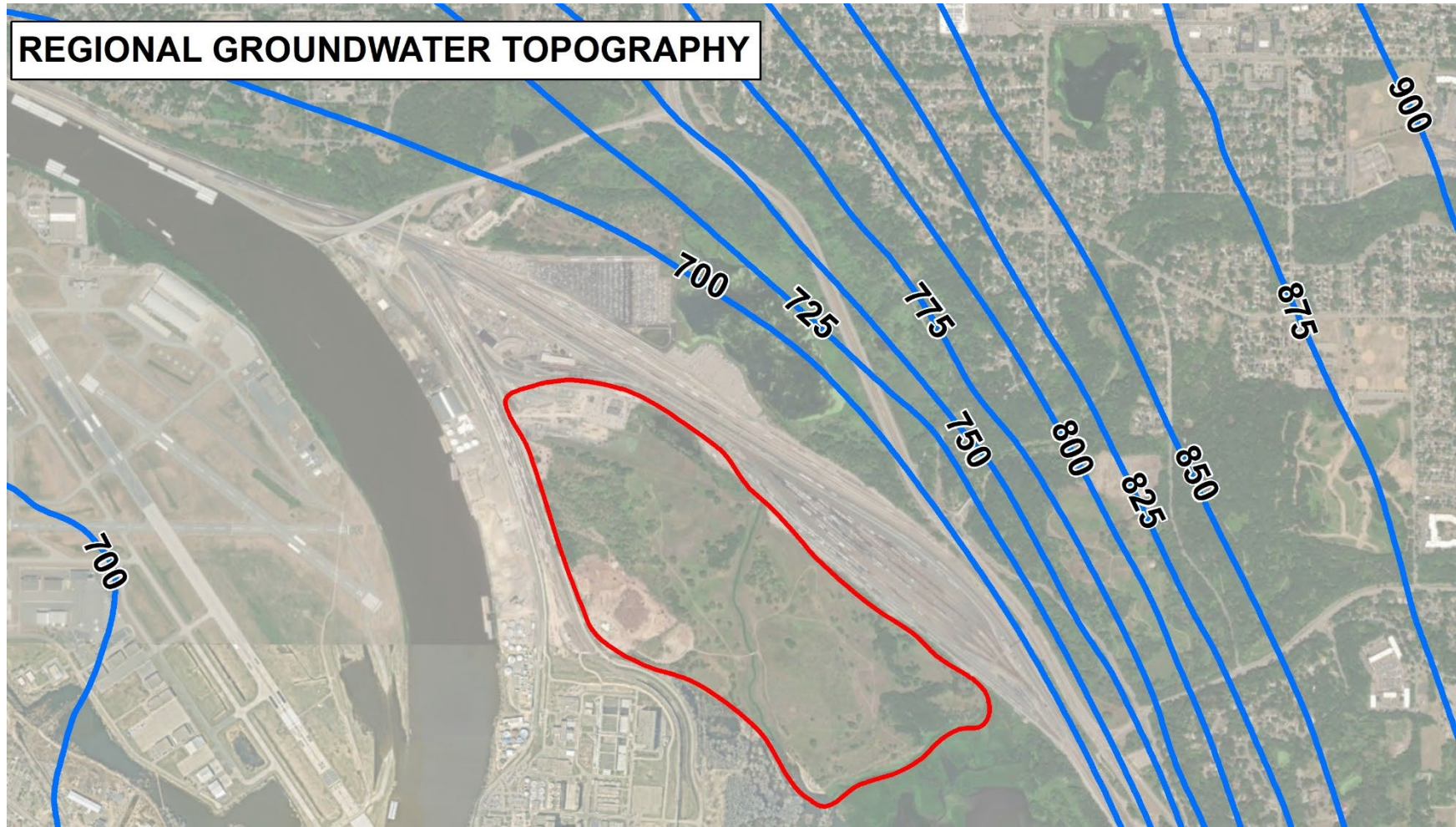
# Remedial Investigation Update – Current Activities

## Pigs Eye Landfill

- **Transducer study** – Understand transient water level changes (ongoing)
- **Stream gauging** – Estimate contribution from Battle Creek and potential for reverse flow from Pigs Eye Lake to Battle Creek (ongoing)
- **Monitoring well installation** – Understand gradient and flow patterns and PFAS mass flux
- **Soil sampling** – Understand peat back diffusion underlying battle creek (to be completed)
- **Sediment sampling**- Battle creek – Confirm presence of ongoing source (to be completed)
- **Dye tracer test** – Evaluate discharge to Pigs Eye Lake and Battle creek (to be completed)



# Regional Groundwater Flow





# Pig's Eye Dump – Groundwater Flow

November 2022



May 2023



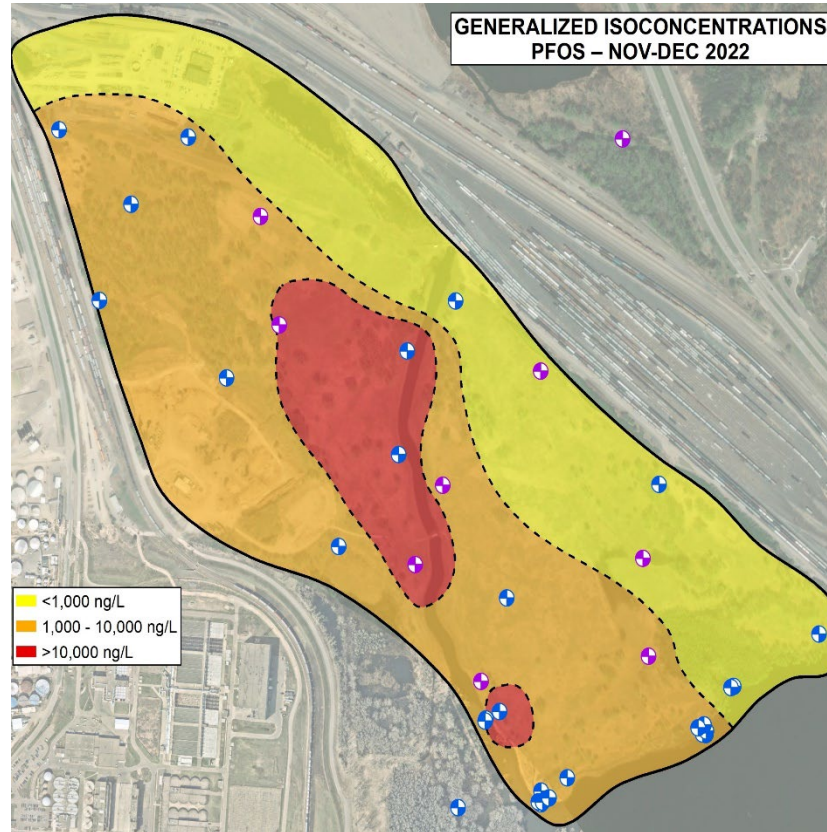
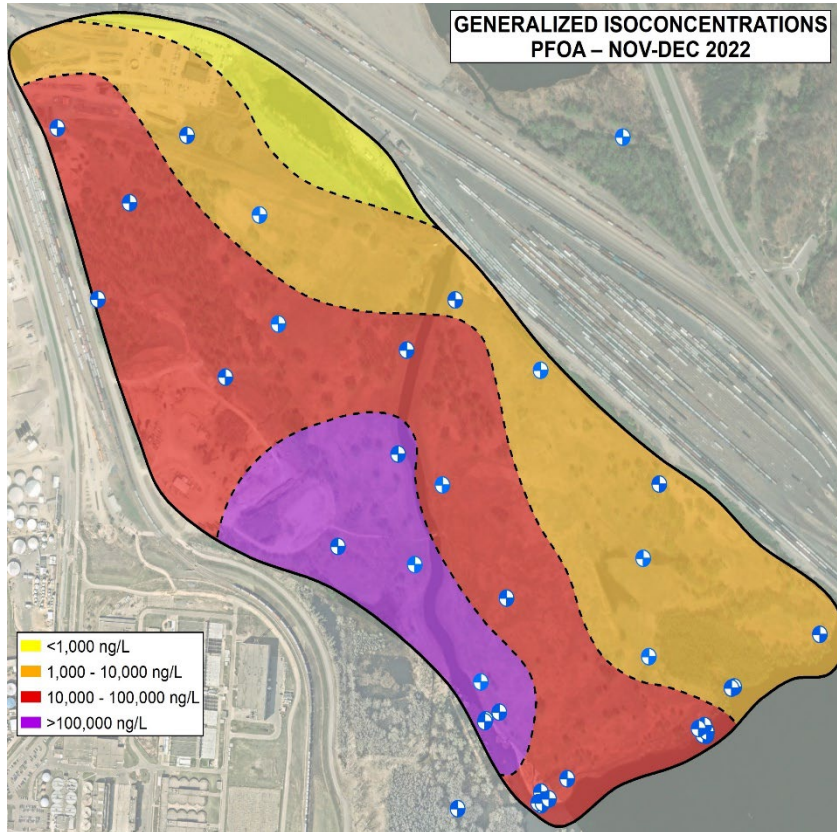
# Groundwater Analytical Summary

- Existing well network includes 55 monitoring wells
- Conducted quarterly groundwater sampling events since June 2022
- Analyze for PFAS (seven PFAS analytes) and 1,4-dioxane
- Both PFAS and 1,4- dioxane were observed at concentrations above criteria in wells distributed across the Site.
- Higher PFAS concentration in wells located closer to Battle Creek



# Groundwater Analytical Summary

Groundwater Analytical Summary – On-Site Data Nov. 2022



	MDH HRL/HB V (ng/L)	On-Site Min. (ng/L)	On-Site Max. (ng/L)
PFBS	100	5	1,000
PFHxS	47	26	4,100
PFOS	15	290	25,000
PFBA	7,000	120	290,000
PFPeA	n/a	5	12,000
PFHxA	200	14	27,000
PFOA	35	84	540,000
1,4-Dioxane	1,000	ND	30,000

**Notes:**

- Red denotes concentration exceeds Health Risk Limit and/or Health Based Value
- HRL/HBV presented from MDH
- Analytical concentrations shown are from locations within the PEL
- Only data collected by WSP from within PEL shown

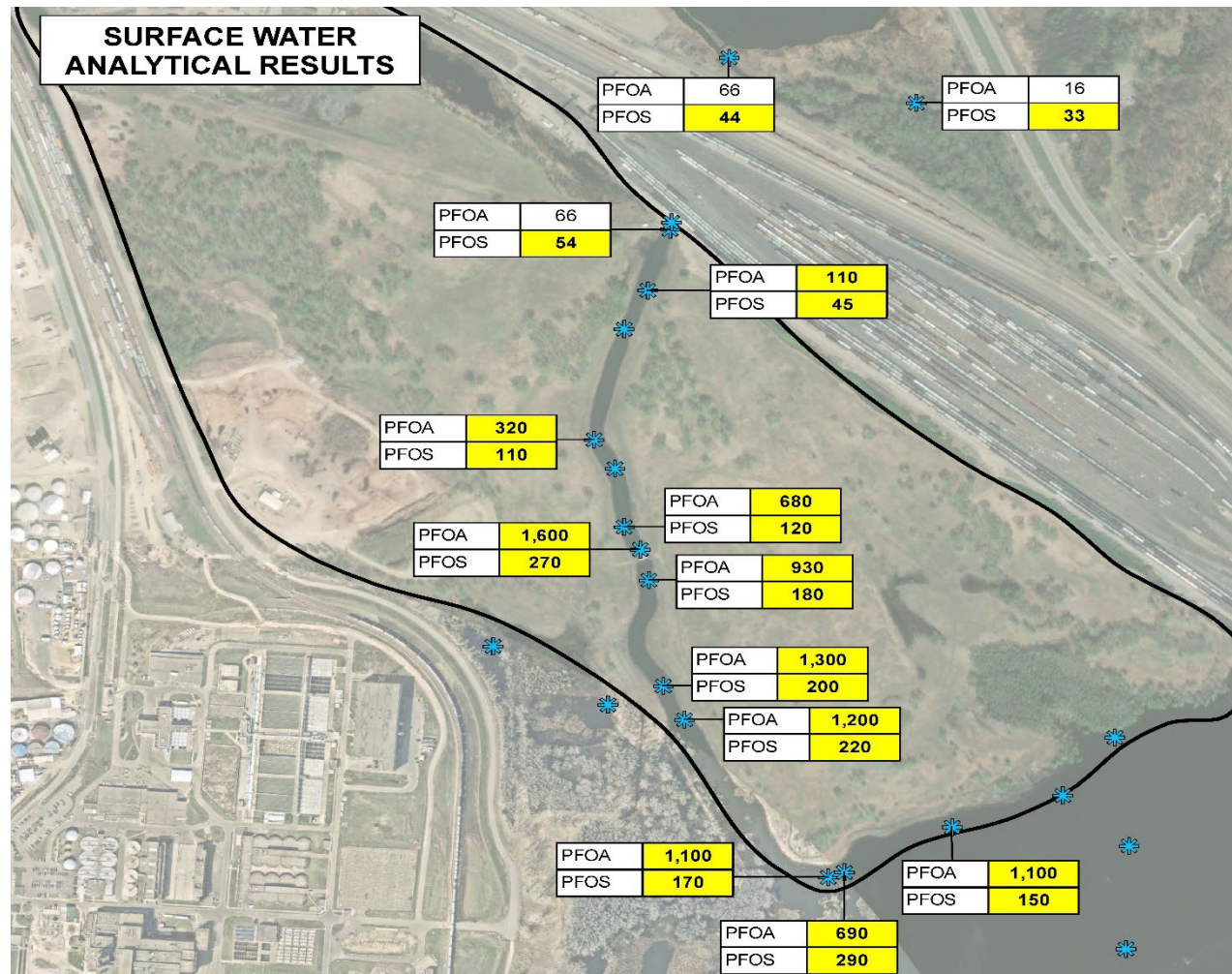


# Surface Water Analytical Summary

- Established sampling network includes 12 locations along battle creek (10 within PEL and two up-stream)
- Five locations sampled quarterly since June 2022; others sampled annually
- PFAS detected in all surface water samples (Nov./Dec. 2022)
  - Three PFAS (PFOA, PFOS and PFHxS) detected above applicable Site-specific water quality criteria (WQC)
- All seven PFAS analytes detected in Battle Creek up-stream of PEL
  - PFOS detected above WQC in two up-stream locations
  - No other PFAS exceeded WQC in up-stream locations - Data Gap for Little Pig's Eye Lake and associated outfall to Battle Creek
- Concentrations of PFAS generally increase from north to south

# Surface Water Analytical Summary (Nov/Dec 2022)

Surface Water Analytical Summary – On-Site Data Nov./Dec. 2022



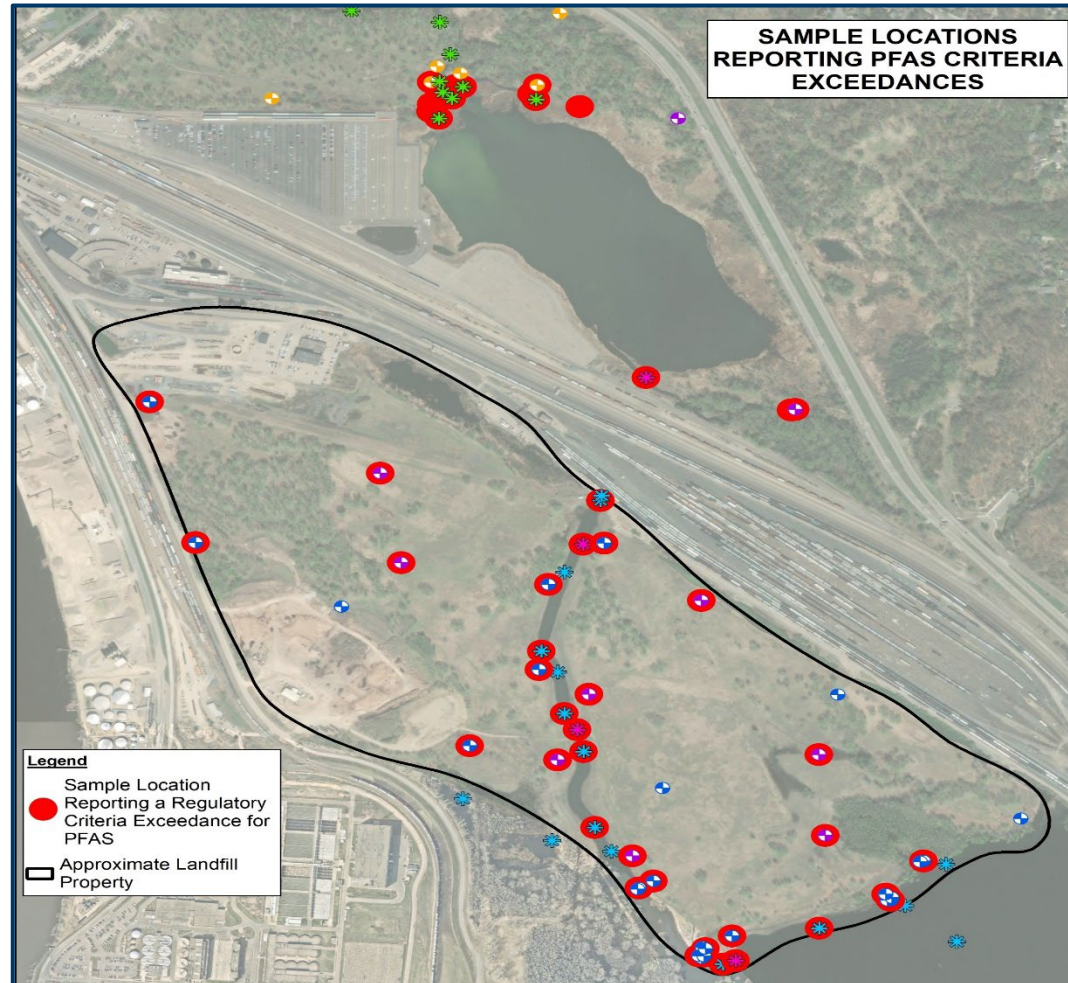
	WQ Criteria*	On-Site Min. (ng/L)	On-Site Max. (ng/L)
PFBS	140	8	31
PFHxS	20	12	49
PFOS	0.05	33	290
PFBA	5,700	200	980
PFPeA	n/a	ND	40
PFHxA	220	ND	92
PFOA	25	66	1,600
1,4-Dioxane	1,000 (HRL)	ND	210

**Notes:**

- Red denotes concentration exceeds applicable Site-Specific Water Quality Criteria (WQC)
- WQC presented from MPCA as Chronic Criteria for Class 1/2A or Class 1/2Bd (30-day average)
- Analytical concentrations shown are from locations within the PEL

3/20/2024

# Pigs Eye/Fish Hatchery Combined Analytical Summary





# Contamination Pathways

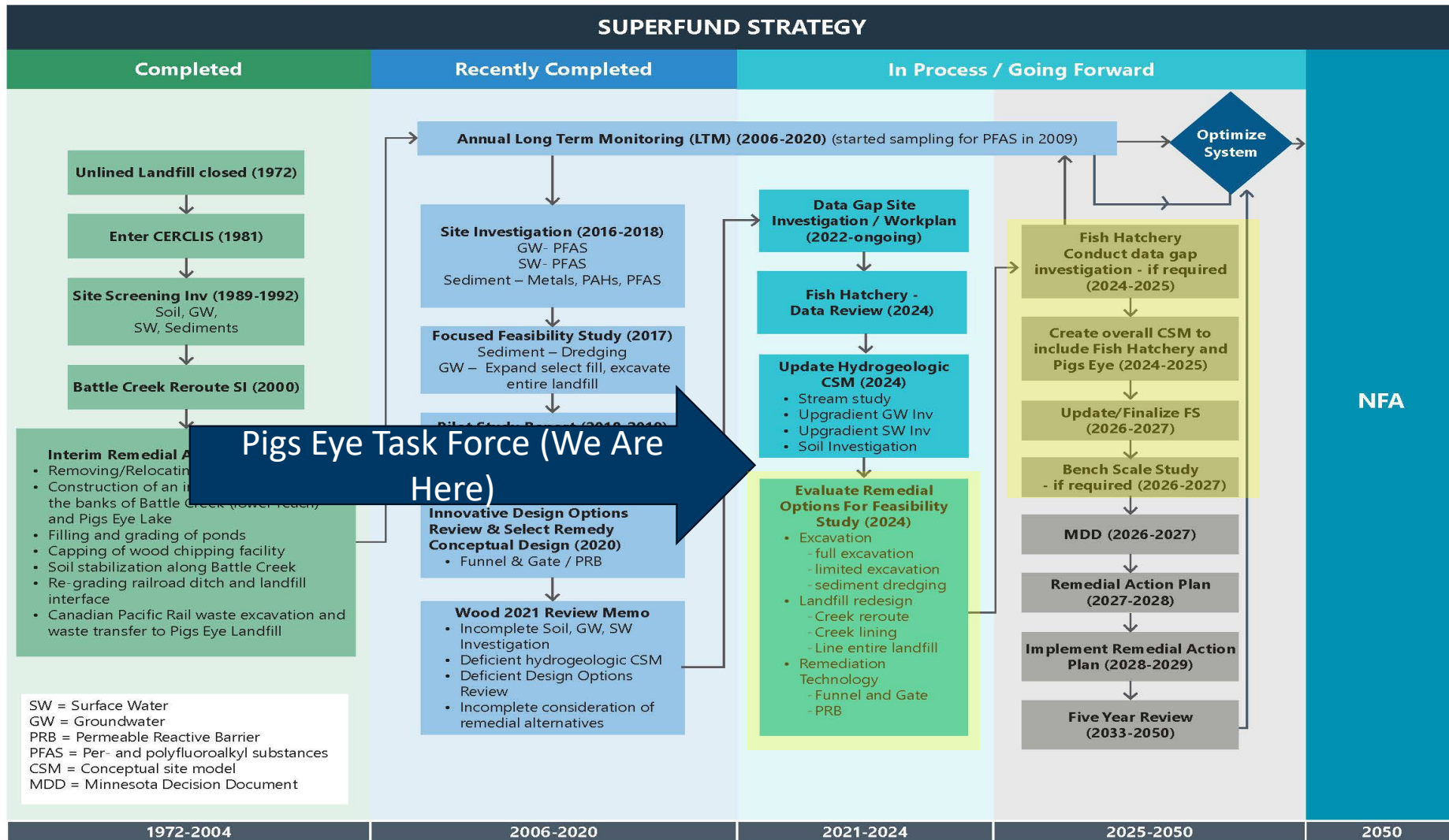
Draft Supplemental Remedial Investigation Summary			
	PFAS	1,4-Dioxane	Metals (Dissolved)
<b>Groundwater</b>	Exceed SW Quality Criteria and MDH HRLs in MWs	Above MDH HRL in MWs	Dissolved metals last sampled for in 2016 and Mercury last sampled for in 2014, in which results were under SW Quality Standards in MWs
<b>Surface Water</b>	Exceed SW Quality Criteria and MDH HRL/HBV in Pig's Eye Lake and Battle Creek	Detected but below MDH HRL in Pig's Eye Lake and Battle Creek	Dissolved metals and mercury last sampled for in 2016. Dissolved metals were under SW Quality Standards in Pig's Eye Lake and Battle Creek except for Aluminum and Mercury (likely due to sediments in samples).
<b>Sediment</b>	PFOA and PFOS detected at concentrations exceeding laboratory reporting limits but well below SRVs in all of the samples analyzed in last sediment sampling (2014, 2016-2017)	Not evaluated	Multiple sediment samples above SSV and Level 2 SQTs for Cadmium, one sediment sample above Level 2 SQTs for lead, and multiple sediment samples above Level 1 SQTs for Copper/Zinc/Lead/Cadmium in last sediment sampling (2016-2017)

# Remedial Challenges

- High PFAS concentrations across entire Pigs Eye Dump (200 acres)
- Upgradient PFAS source – Fish Hatchery
- Offsite contaminant migration
- Consideration of treatment technologies – one size does not fit all!
  - Foam Fractionation – proven effective for long-chain PFAS. Not effective for 1,4-dioxane
  - Activated Carbon – proven effective for PFAS removal (not destruction). Only marginally effective for 1,4-dioxane
  - Limited options wrt disposal of PFAS impacted soil
- Receptors – Pigs Eye Lake and Mississippi River
- Overall Remedial Goal – Reduce PFAS concentrations entering Pigs Eye Lake vs meeting regulatory Pool 2 criteria
  - Low PFAS criteria (ex - Pool 2 PFOS – 0.05 ng/L)

# Discussion

# Pig's Eye Superfund Process -- Timeline



- What are your thoughts or reactions on what was presented? Do you have any questions?
- Are there specific types of contaminants you have questions on?





# Task Force Meeting Scheduling Discussion

# Scheduling Discussion

## Scheduling decisions

- Meet outside of work hours for more public participation potentially vs. continue to meet during work hours
  - Could also be “supplemented” with specific public meetings not attended by full Task Force.
- Ongoing regularly scheduled meetings
  - e.g. **The last Monday of the month**, from 2:30-4:30 p.m., every two months
  - **Next Task Force meeting**, Monday, March 25<sup>th</sup> from 2:30-4:30 p.m.



Option to have an online meeting for public participation

# Pigs Eye Dump Task Force – Public Comment

Please limit your comments to two minutes.

Start by sharing:

- Your name
- Your interest in the project

**Contact us:**

Hunter Vraa, Task Force Coordinator:

Pig's.Eye.Dump.Task.Force.Mailbox.MPCA@state.mn.us

<https://www.pca.state.mn.us/local-sites-and-projects/st-paul-pigs-eye-dump-task-force>



## Next Meeting & Wrap up



Thank you!