Naval Facilities Engineering Systems Command

Environmental Program Overview

Treasure Island Restoration Advisory Board Meeting

6 February 2024

Presentation Topics

- Site YF3
- Site 12
- Navy BRAC Treasure Island PFAS Program
  - (Per and Polyfluoralkyl Substances)
- PFAS Treatment Technologies Overview
- Explanations of Significant Difference (ESD) & Land Use Control – Remedial Designs (LUC-RD)
- Five Year Review

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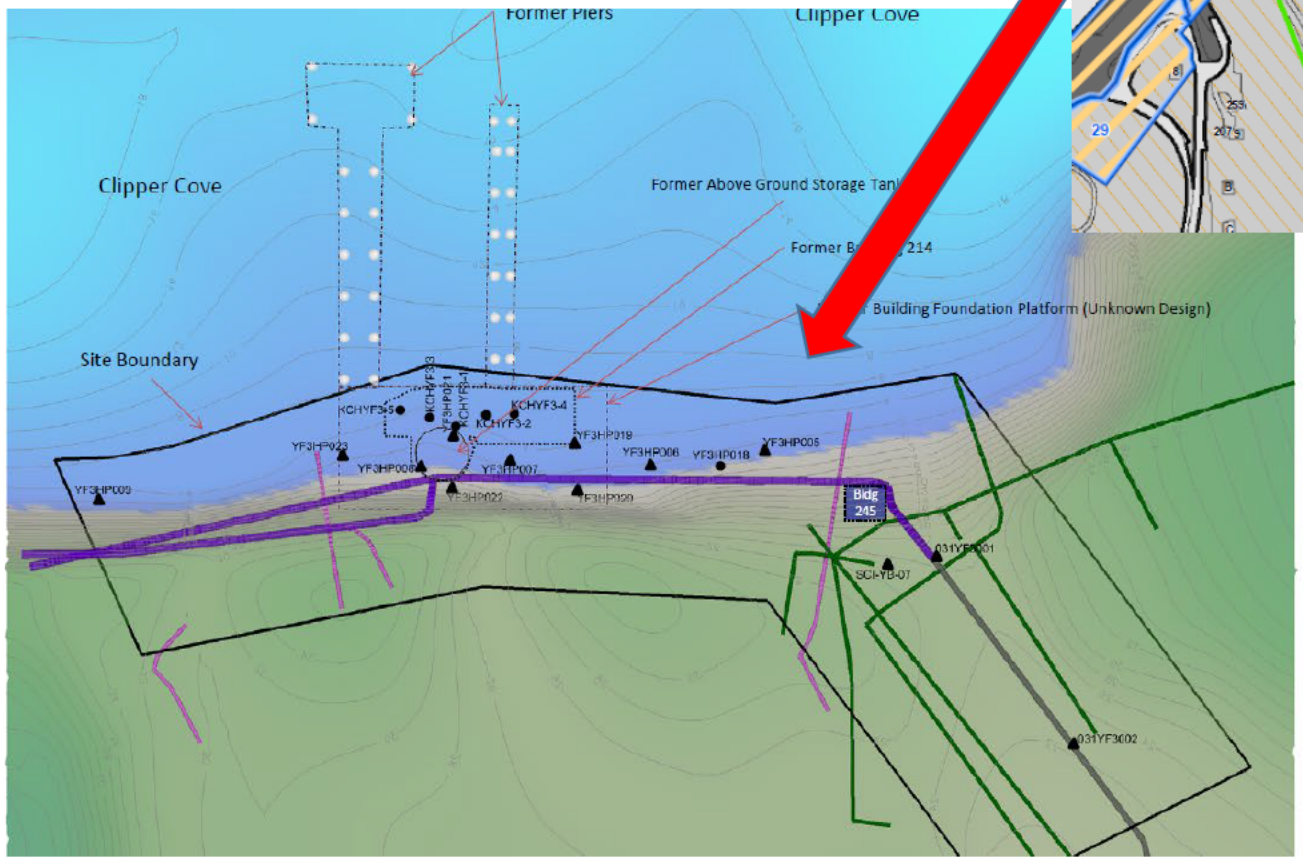
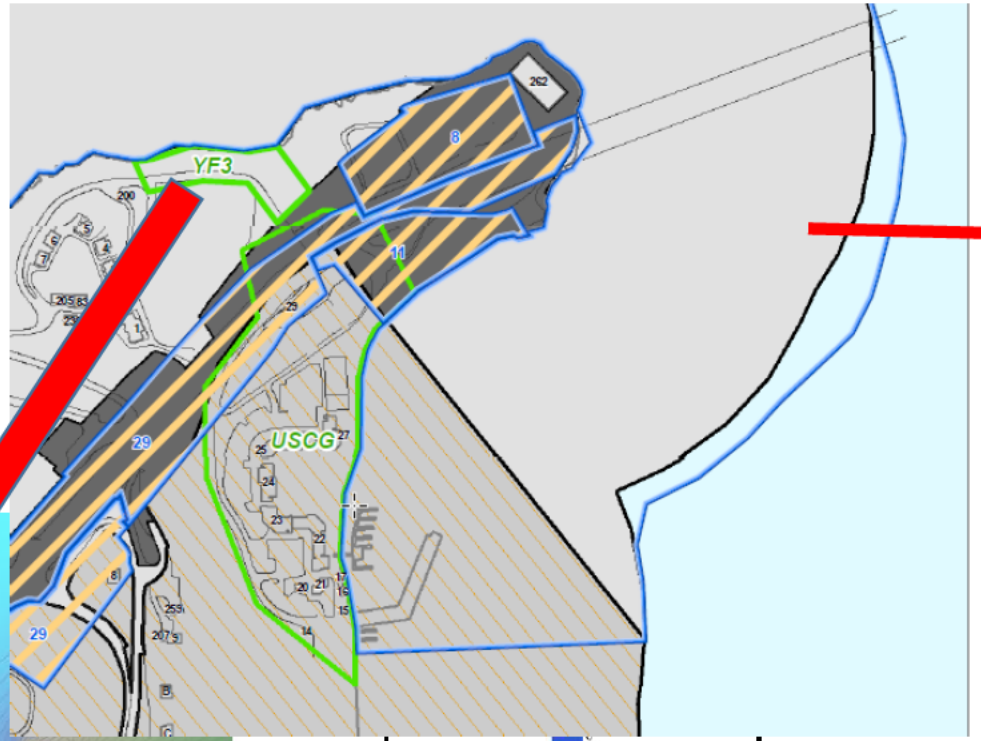
Petroleum Site YF3

Site YF3

- **Only remaining open Navy petroleum pipeline site**
- **Located on Yerba Buena Island**





Site Boundary

10 Iso-Elevation Contour Line (2 ft. Intervals)

KCHYF3-4 Groundwater Sampling Location

YF3HP005 Soil Sampling Location

Storm Sewer

Closed In-Place Fuel Line

Sanitary Sewer

Un-located Portions of Former Fuel Lines

Notes:

1. Coordinate System: NAD 1983 California State Plane Zone 3, US Survey feet
2. Piers and supports are estimated locations and configurations

YF3 Site Assessment History

1994-2000 Petroleum Site Investigations:

- At YF3, two fuel lines and two former Above Ground Storage Tanks were identified along piers used for historical fueling operations.

2012 Soil & Groundwater Investigation:

- Conducted soil and groundwater sampling.
- Identified contaminants: Weathered Petroleum – (lighter petroleum chains degrade first, leaving heavier compounds) , Polyaromatic Hydrocarbons and Volatile Organic Compounds.

2015-2019 Data Collection and Risk Assessments

- Assessed aquatic life, benthic invertebrates (living in sediments) , birds, and mammals.
- Re-confirmed presence of weathered petroleum.
- Supported initial evaluation of potential cleanup alternatives.

Corrective Action Alternatives Evaluation - 2020

Alternatives Considered

- Long-Term-Monitoring – No disturbance of site.
- Capping with land use controls.
- Excavation.
- Concluded that additional data was needed to quantify amount of weathered petroleum left in place.

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Future Investigation - Additional Data Collection

- **Land Surveying and Geophysical Study:** Determine the physical boundaries - further characterize the depth to bedrock.
- **Soil and Porewater Assessment:** Attempt to fill in data gaps of the horizontal and vertical extent of residual petroleum contamination.
- Data will be collected and analyzed to supplement existing site data and inform corrective action evaluation.

YF3 Path Forward

- Final Data Gaps Workplan
  - August 2024
- Final Data Gap Evaluation Report
  - Oct 2025
- NEPA/CEQA Evaluation
  - Oct 2026
- Corrective Action Plan (CAP)
  - Oct 2027
- CAP Post Construction Summary Report
  - Dec 2028

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Site 12 – Housing Area

Site 12 - Brief History

- Multiple projects (excavations, sampling, studies) over the last 30 years.
- Extensive radiological scans of the site.
  - Focus of future cleanup is to address remaining discrete objects
- 2017 ROD Remedial Action - Fieldwork Complete - 2021
- Conceptual Site Model Update – Complete 2023
  - Refined housing construction grading depth
- 1400 Housing Series Rad No Further Action – Complete 2023

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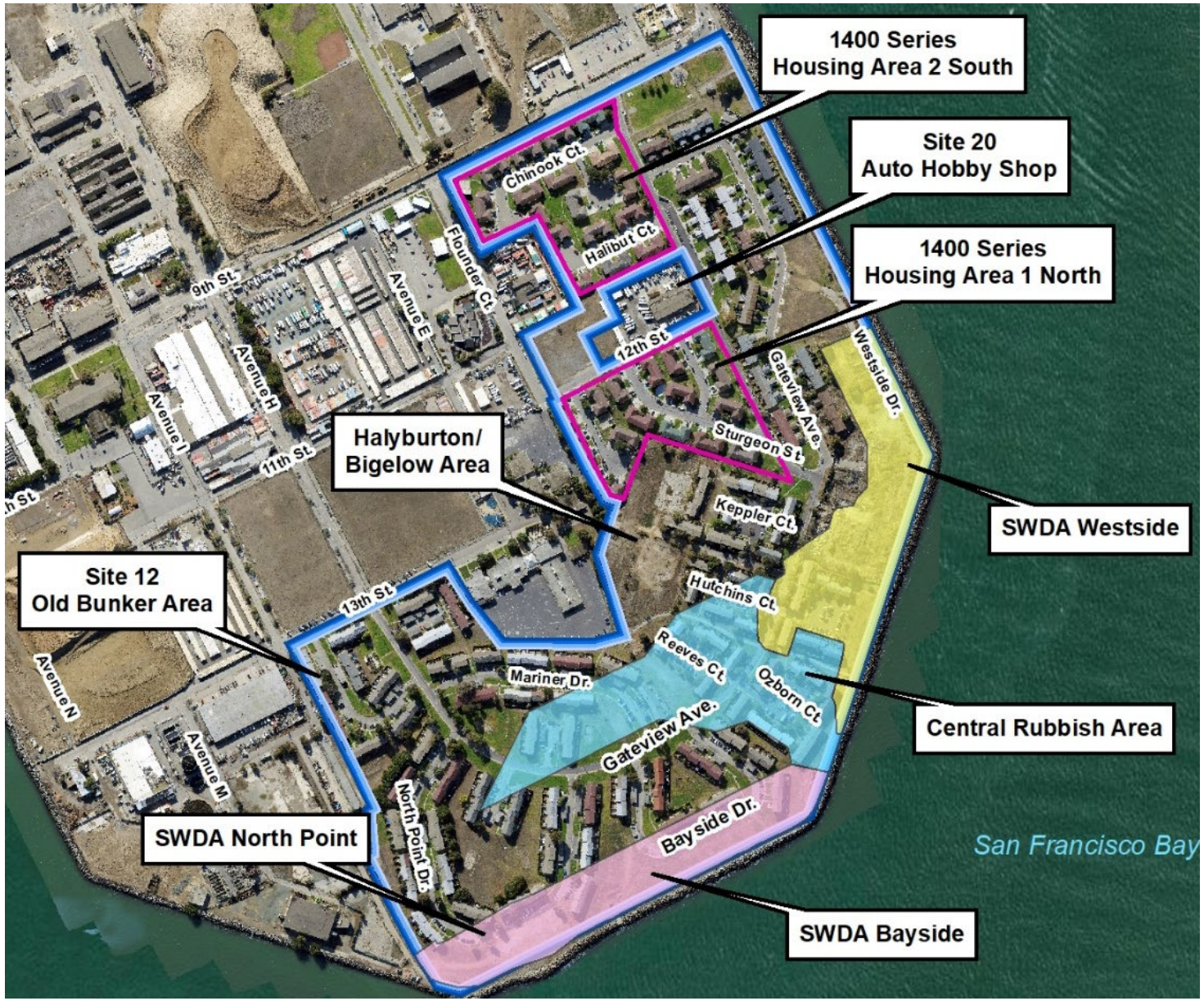
Site 12 Parts At a Glance

- **Site consists of several major components**
  - **Landfill Areas**
    - SWDAs and CRA*
  - **Areas outside of landfill areas**
  - **1400 Series Housing Area**



*Solid Waste Disposal Area – Central Rubbish Area

Site 12 Next Steps – Feasibility Study Addendum #2

- Initial Feasibility Study (FS) and Addendum (#1) Focused on non-radiological chemicals outside of Solid Waste Disposal Areas (SWDA)

- Feasibility Study (FS) Addendum (#2) will present an evaluation of *additional* potential remedies for Site 12
    - Remaining non-rad contamination within the SWDAs
    - Radiological impacted areas across IR Site 12 *(outside of 1400 series housing)*

- Request Applicable or Relevant and Appropriate Requirements (ARARs)
    - Request – January 2024

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FS Criteria

- Threshold Criteria
  - Overall protection of human health and the environment.
  - Compliance with ARARs.
- Balancing Criteria
  - Long-term Effectiveness and Permanence
  - Reduction in Toxicity, Mobility or Volume Through Treatment
  - Short-term Effectiveness
  - Implementablity (technical and administrative)
  - Cost
- Modifying Criteria
  - State Acceptance
  - Community Acceptance – Done at the PP Phase Public Meeting

Other Factors for Consideration

- **Sea Level Rise (SLR)**
  - **Navy will evaluate SLR during development of remedial alternatives.**
  - **Navy will continue to monitor remedy relative to SLR.**
    - Tied to the Five-Year Review process
- **Reasonably Anticipated Future Reuse**
  - **Navy's remedy *is not redevelopment* but (at BRAC bases) the environmental cleanup team takes into account what the property may be used for after transfer.**

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Additional Work Planned in Support of FS Addendum #2

- **Additional excavation in Site 12, (empty lot area)**
  - **Extend previous excavation to remove residual PAH/TPH-contaminated soil**
  - **Workplan Spring 2024**

Site 12 Schedule

- ARARs Request January 2024
- Draft FS – Jan 2025
- Final FS – June 2025
- Proposed Plan – March 2026
- Public Meeting June 2026
- Draft Record of Decision – February 2027
- Final ROD 2028

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Navy BRAC – Treasure Island PFAS Program

PFAS Progress To Date:

Current Status of PFAS CERCLA Documents

- Draft Reporting for the initial IR Site 6 PFAS RI
  - Additional sampling workplan to be developed in 2024
- Planning underway for Basewide RI
  - Broader evaluation (data collection) of PFAS nature/extent
- Tracking Evolving Guidance/Policy
  - Screening Values
  - Risk Assessment Guidance
  - Laboratory Analysis
  - Climate related topics

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Planned PFAS Fieldwork Activities - 2024

- Establish Ambient (current non-naturally occurring) Concentrations of PFAS in the Bay
  - Sediment – Porewater – Surface Water
- IR Site 6 PFAS Reactive Barrier Pilot Test
  - Testing a potential containment remedy

PlumeStop/Liquid Activated Carbon stock

RAB Requested Info:
Introduction to Various PFAS Technologies – Used and Under Evaluation

PFAS Technologies – Groundwater – Pump and Treat

Granulated Activated Carbon (GAC)

- Made from bituminous coal or coconut
- Highly porous – large surface area
- Adsorption on surface – no chemical degradation
- Capable of 90- 99% removal efficiency

GAC

Electrochemical

- Synthetic plastics with positively charged exchange areas
- Removes PFAS binding to negatively charged PFAS molecule
- Can be regenerated or used one time
- Can have higher and faster capacity than GAC


Ion Exchange

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PFAS Technologies – Groundwater – Continued

PFAS Technologies – Soil

Key Points

Explanations of Significant Difference (ESD)
Land Use Controls Remedial Design (LUC RD)

Site 6 – Fire Fighting Training Facility

- ESD
  - Revised groundwater arsenic RG for construction worker from 250 micrograms/liter (ug/l) to 35 ug/l
  - Final Oct 2023
- LUC RD
  - Review recent groundwater monitoring data
    - determine if plume extent is bounded
  - If not, expand monitoring well network to delineate plume boundary
  - Revise as needed, area requiring institutional controls (ARIC)
    - Draft March 2024

Site 12 – Gateview Ave Petroleum Area

- ESD
  - Revised groundwater arsenic RG for construction worker from 250 ug/l to 35 ug/l
  - Final Feb 2024
- LUC RD
  - Establish an area requiring institutional controls
  - Implement contaminated groundwater management plan to be followed during construction activities
  - Evaluate land use controls as needed
  - Draft April 2024

Site 24 – Dry Cleaning Facility

- ESD
  - ESD revised chlorinated solvent soil gas RGs for residential and commercial/industrial workers
  - Final issued April 2023
- LUC RD
  - Collect additional soil gas monitoring data determine if plume extent is bounded
  - Revise area requiring institutional controls (ARIC) if needed
  - Draft document to be issued after additional data collected from the site

Treasure Island Five-Year Review

Focus of the Five Year Review – 3rd Volume

- To evaluate the implementation and performance of in-place remedies for subject sites.
  - Determine whether the remedy is, or in the future, will be protective of human health and the environment.

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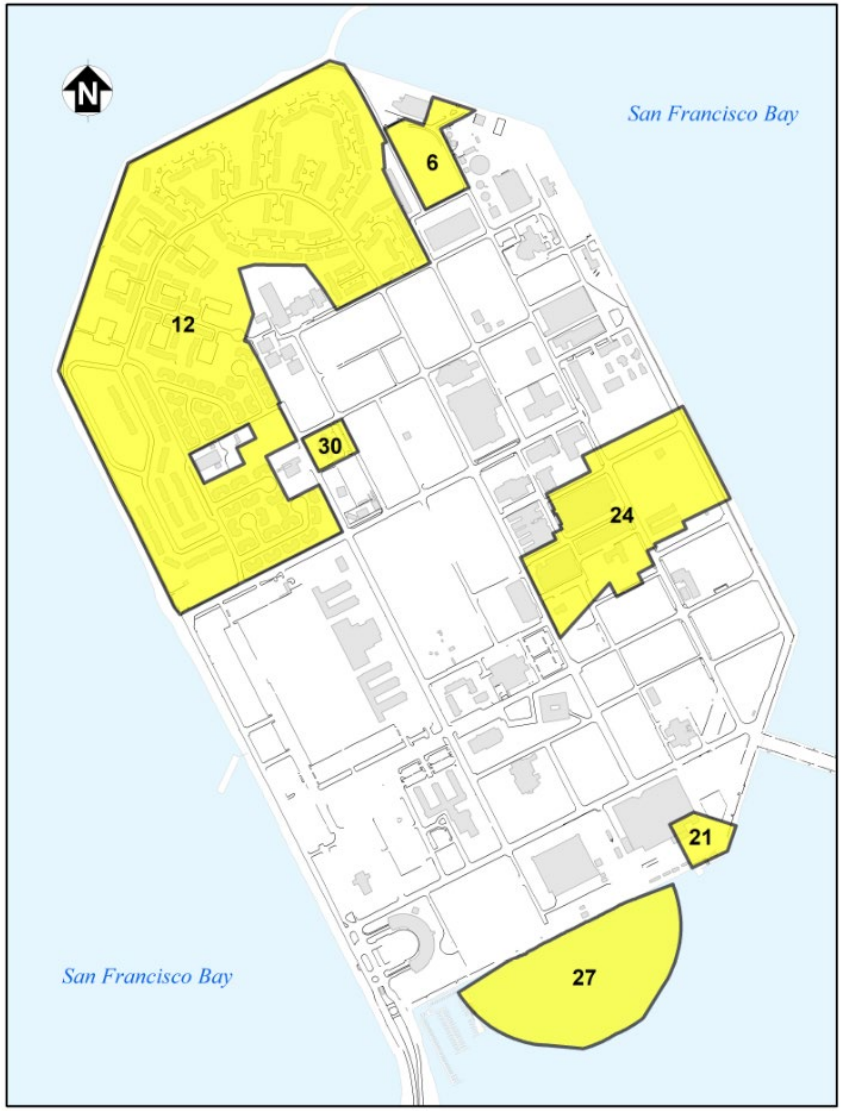
Five Year Review Sites (2nd & 3rd FYR)

- **Six sites will be evaluated for the 3rd FYR:**
  - **IR Sites 6, 12*, 21, 24, 27, and 30**
    - *For Site 12, the evaluation will include the remedy for groundwater within the Gateview Arsenic/TPH area, as well as the implemented soil remedy.



Five Year Review Process

Step	Purpose
Document Review	• Review of records of decision, remedial action designs, work plans, completion and monitoring reports, and annual site inspection reports • Confirm remedial action is working as designed and/or how the remedial action is currently functioning
Site Inspection	• Document current site conditions to evaluate visual evidence of the protectiveness of the remedies at each site
Site Interviews	• Complete interviews of cross-section stakeholders to identify any problems or concerns with the remedies that remain to be addressed • Stakeholders include: DTSC, Waterboard, TIDA, residents, and local community members
Protectiveness Statement	• Establishing if the remedy for each site is protective of human health and the environment

3rd FYR Schedule

- **2024 – Develop Internal Draft***
- **Early 2025 – Draft Completed**
- **May 2025 – Concurrence on RTCs and RLSO**

*Any new rules or regulations should be provided by early 2024

Groundwater/Soil Gas Monitoring

Groundwater and Soil Gas Monitoring

- Ongoing Monitoring at four sites
  - Groundwater – Sites 6, 12, and 24
  - Soil Gas – Sites 21 and 24
- 2022 Monitoring Report – Draft October 2023
  - Final April 2024
- 2023 Report – Draft TBD

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Questions?

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