

St. Maries Creosote Site Remediation Summary

Basin Environmental Improvement Project Commission

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With significant support from:

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St. Maries Creosote Site

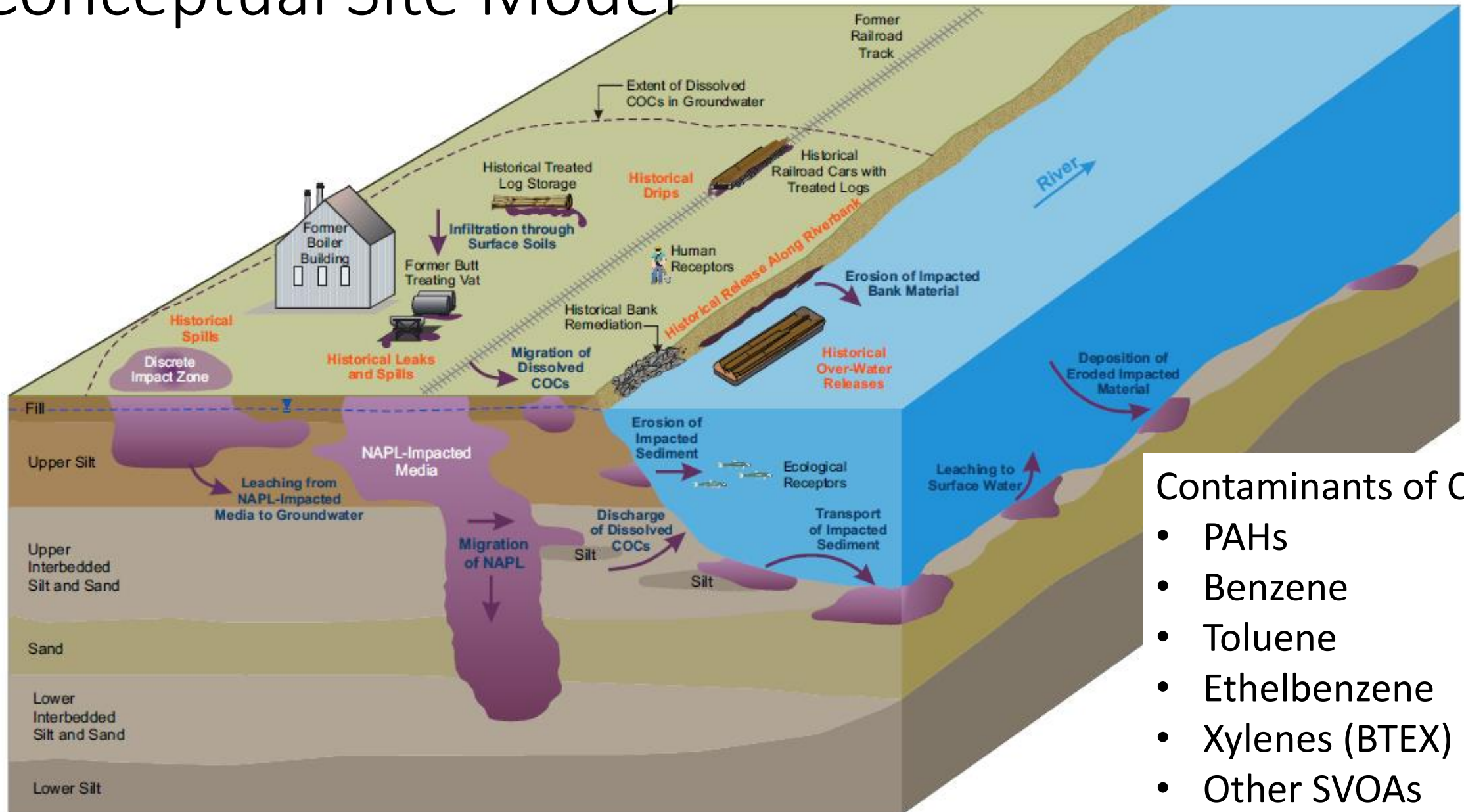


- Wood pole preserving company
- 1930s – 1960s: Treated utility poles with creosote
- 1982 – 2003: Pole storage and peeling plant with no preservative treating
- On Coeur d'Alene Tribe Reservation
- Arcadis U.S., Inc., Voluntary Remediation Party
- Participating Parties- City of St. Maries and B.J. Carney, Carney Products, Ltd.
- Not on NPL



- Located in a floodplain
- River side of federal flood control levee
- St. Joe river is affected by dam operations downstream

Conceptual Site Model

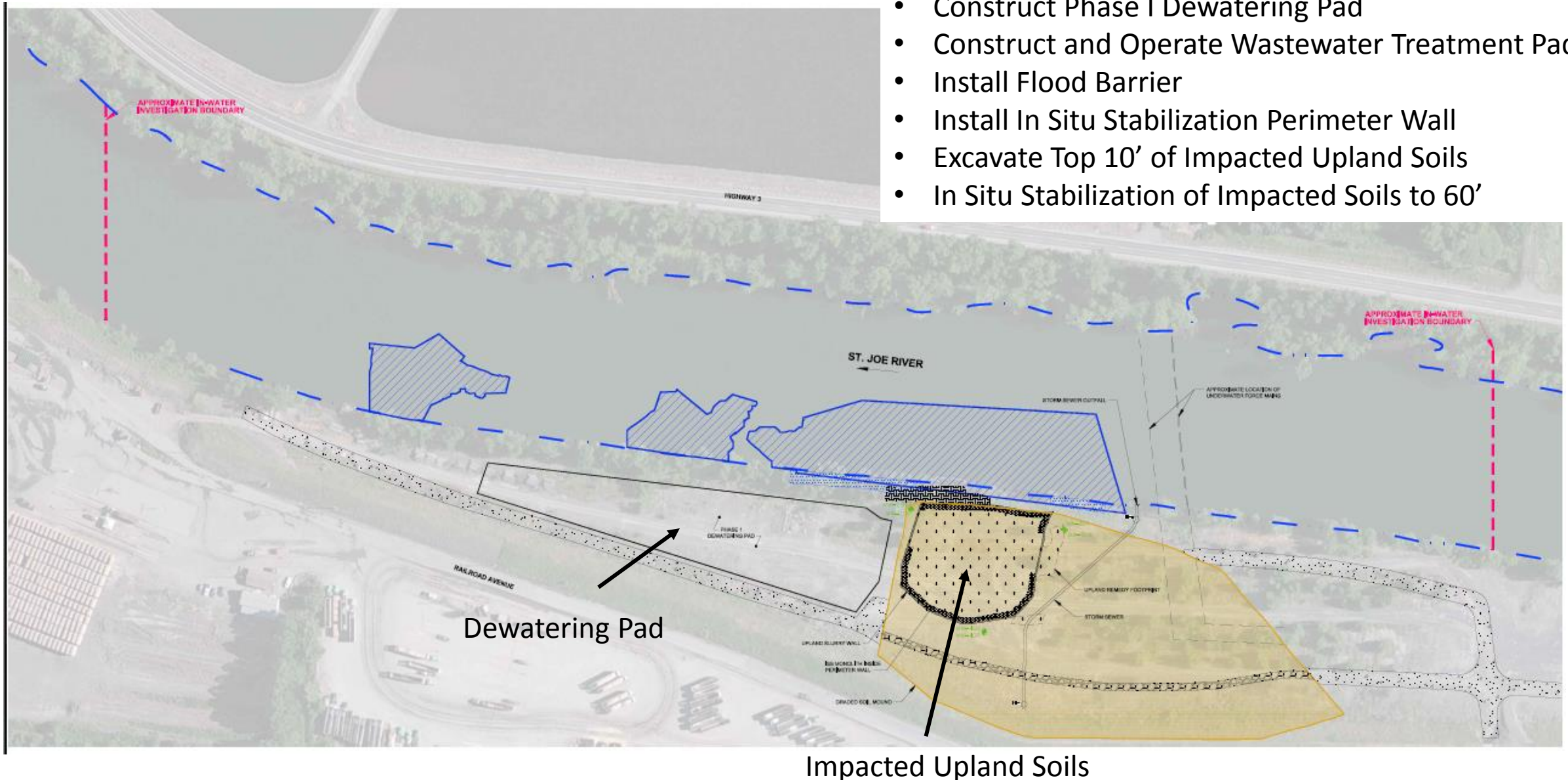


Contaminants of Concern

- PAHs
- Benzene
- Toluene
- Ethelbenzene
- Xylenes (BTEX)
- Other SVOAs

Remedy Components- Phase I (Jul 2014-Apr 2015)

- Construct Phase I Dewatering Pad
- Construct and Operate Wastewater Treatment Pad
- Install Flood Barrier
- Install In Situ Stabilization Perimeter Wall
- Excavate Top 10' of Impacted Upland Soils
- In Situ Stabilization of Impacted Soils to 60'





- Install In Situ Stabilization Perimeter Wall
- Excavate Top 10' of Impacted Upland Soils



Concrete Batch Plant Set-Up



Column mixing using augur for ISS

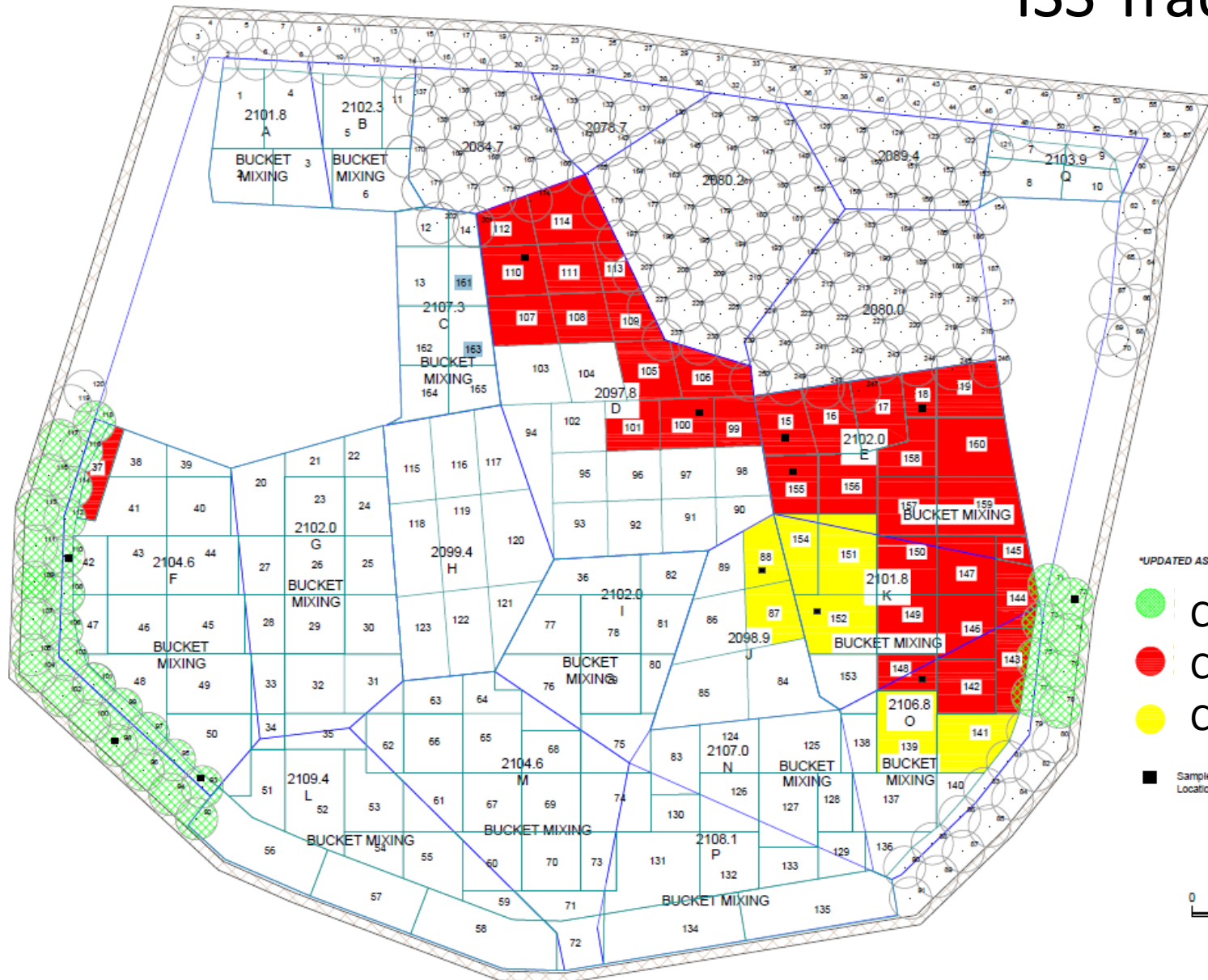
In Situ Stabilization of Impacted Soils to 60'



ISS Mixing Video

<https://youtu.be/Fz30LQnPivQ>

ISS Tracking Figure



Bucket mixing



Augur mixing

*UPDATED AS OF PRODUCTION ON 1/21/15



Completed, meets Unconfined Compression Strength



Completed, waiting UCG



Completed previous day



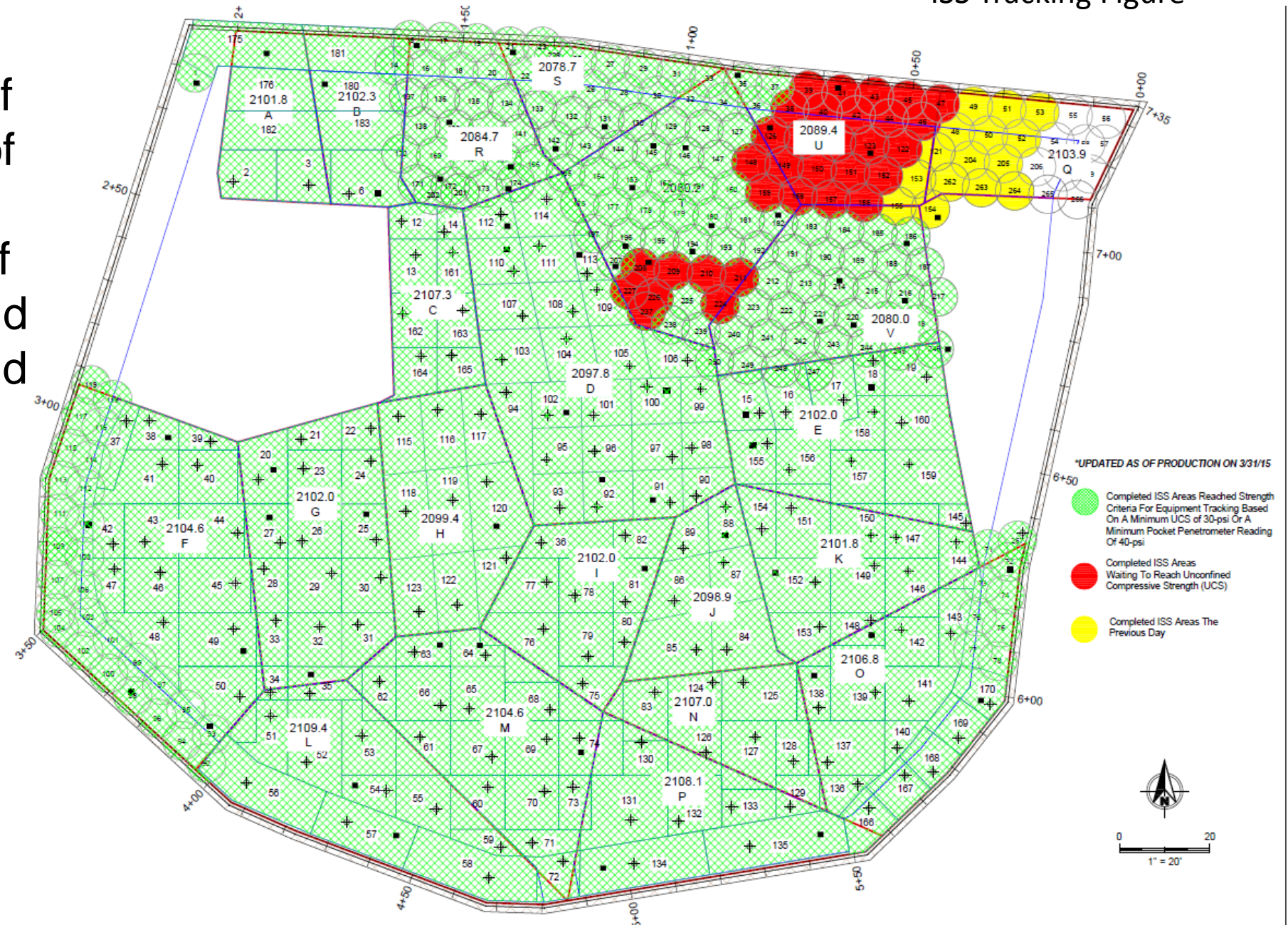
Sample Collected From ISS Location



0 20
1" = 20'

ISS Tracking Figure

- Total gross volume of 37,457 cubic yards of soils were stabilized utilizing 4,535 tons of blast furnace slag and 2,267 tons of Portland cement.

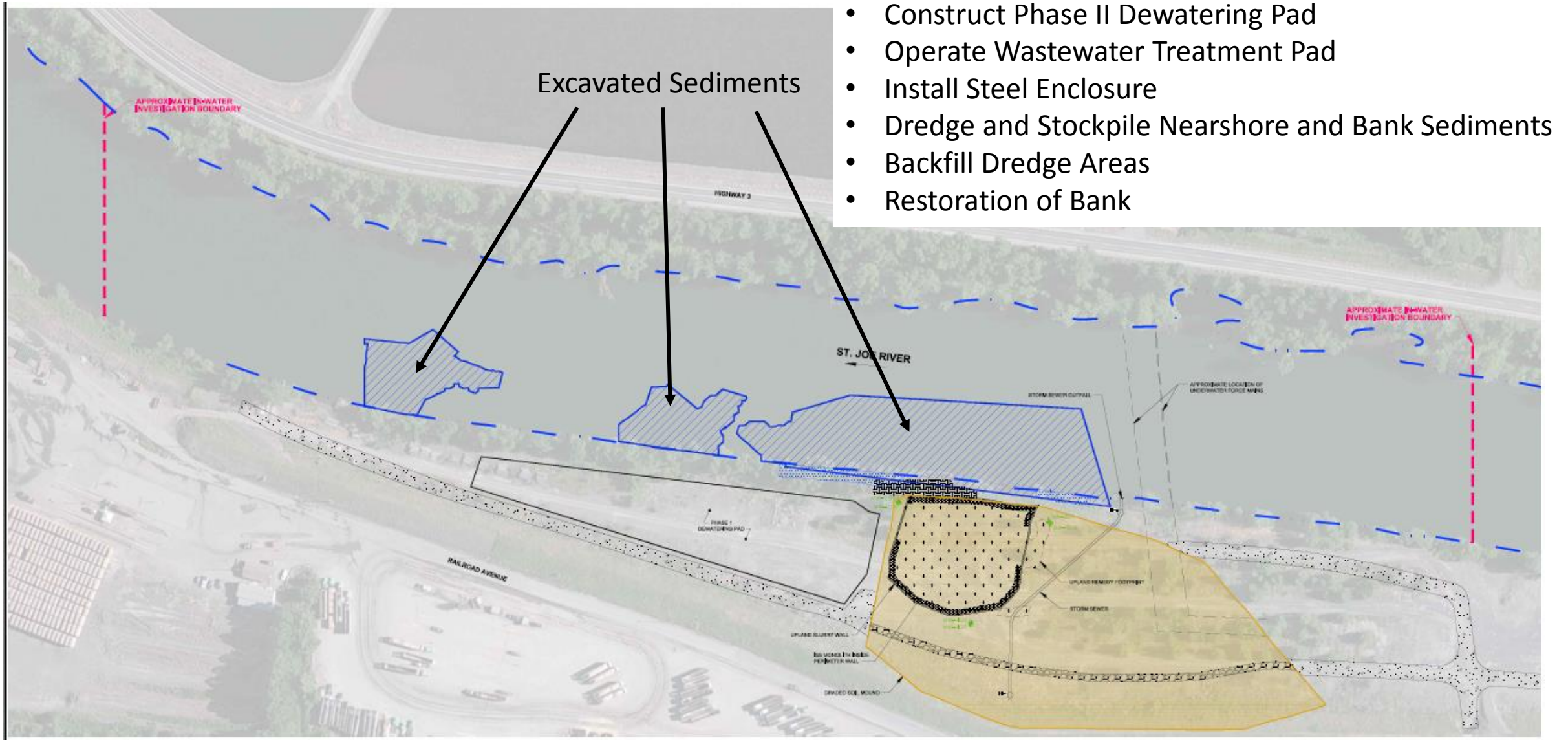


Construct Dewatering Pad



Hesco bags set at 8 ft tall to protect against flooding, based on modeling

Remedy Components- Phase II (May 2015-Nov 2015)



Prepping for In-Water Work (June 2015)

- Installed aids to navigation for a no-wake zone
- Install sheet pile wall
- Resuspension Control System installed downstream of dredge units
 - Oil Boom
 - Sorbent Boom
 - Silt Curtain



Turbidity Curtain Deployment (June 2015)



Sheetpile Wall





- Vibratory hammer to protect Bull Trout
- Enclosure set up was a combination wall consisting of an alternating sequence of H-Pile (King Pile) and sheetpile.
- Sealant was applied to the joints just prior to installation to provide a water-tight seal.

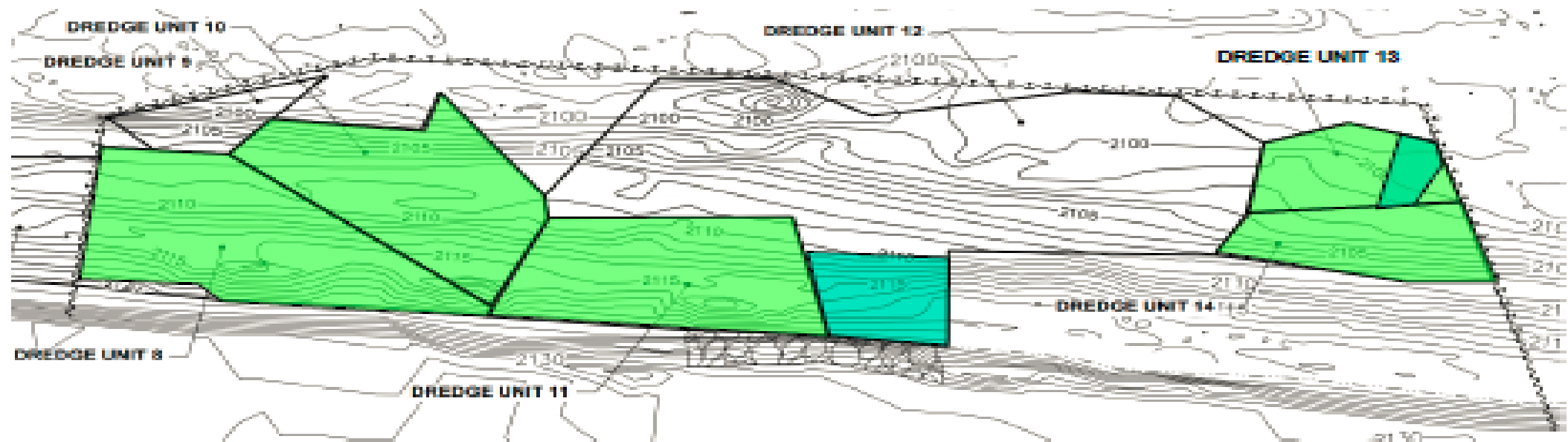
Dredging



Dredging Progress Figure

Today		Total	
Dredge Units	Approx. Volume Removed	Completed Dredge Units	Approx. Volume Removed To-date
12	980 CY	10, 11, 14	7,220 CY

-  Dredging In Progress
-  Dredging Completed



Sheetpile Effectiveness

September,
2015



Stockpiled clean
sediment for
backfill



Wastewater
Treatment
Plant

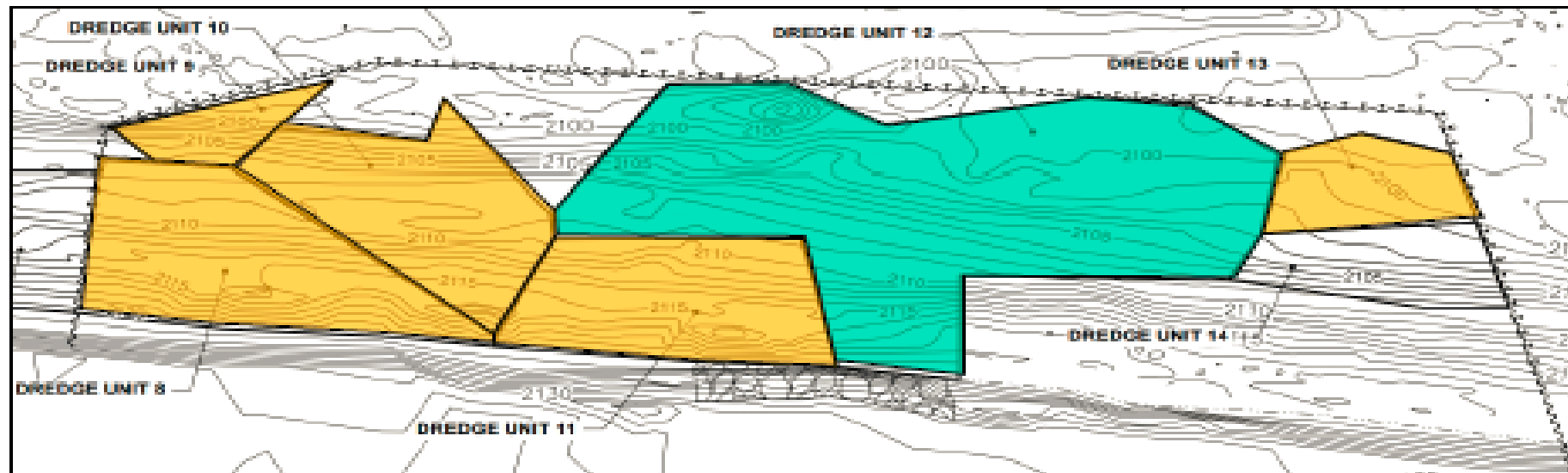
Stockpiles sediments



Backfilling Progress Figure

Today		Total	
Backfill Units	Approx. Volume Placed	Completed Backfill Units	Approx. Volume Placed To-date
DU-11	1500 CY	—	16,590 CY

-  Backfilled to 6 ft below final grade
-  Backfilling in process



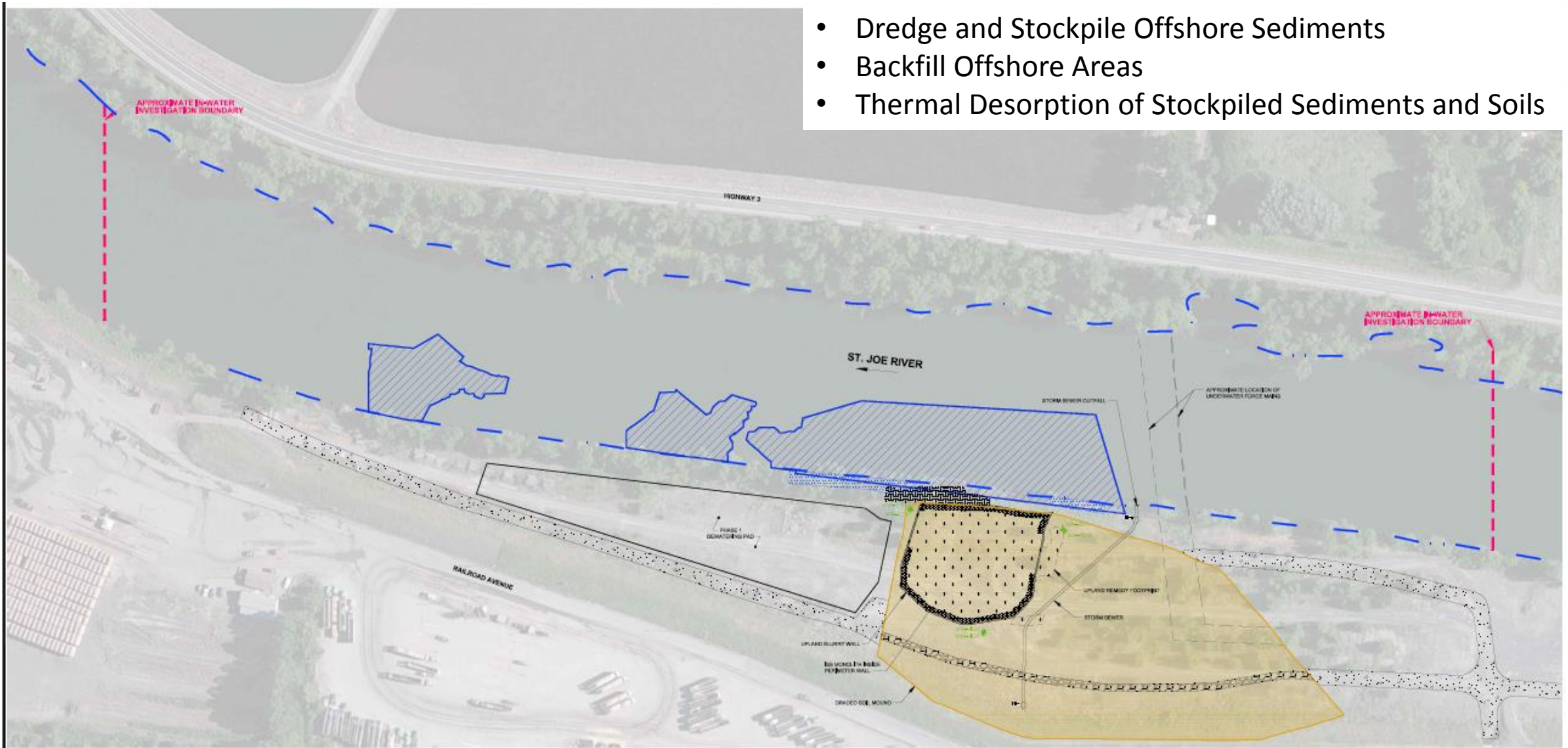
Sheet Pile Removal



- NTU readings in the enclosure were over 1000 NTUs once backfilling was complete.
- After 2 week setting time period, turbidity came down to 132 NTUs.
- Limited water quality exceedances alarms during enclosure removal

Remedy Components- Phase III (Apr 2017-Jun 2017)

- Dredge and Stockpile Offshore Sediments
- Backfill Offshore Areas
- Thermal Desorption of Stockpiled Sediments and Soils



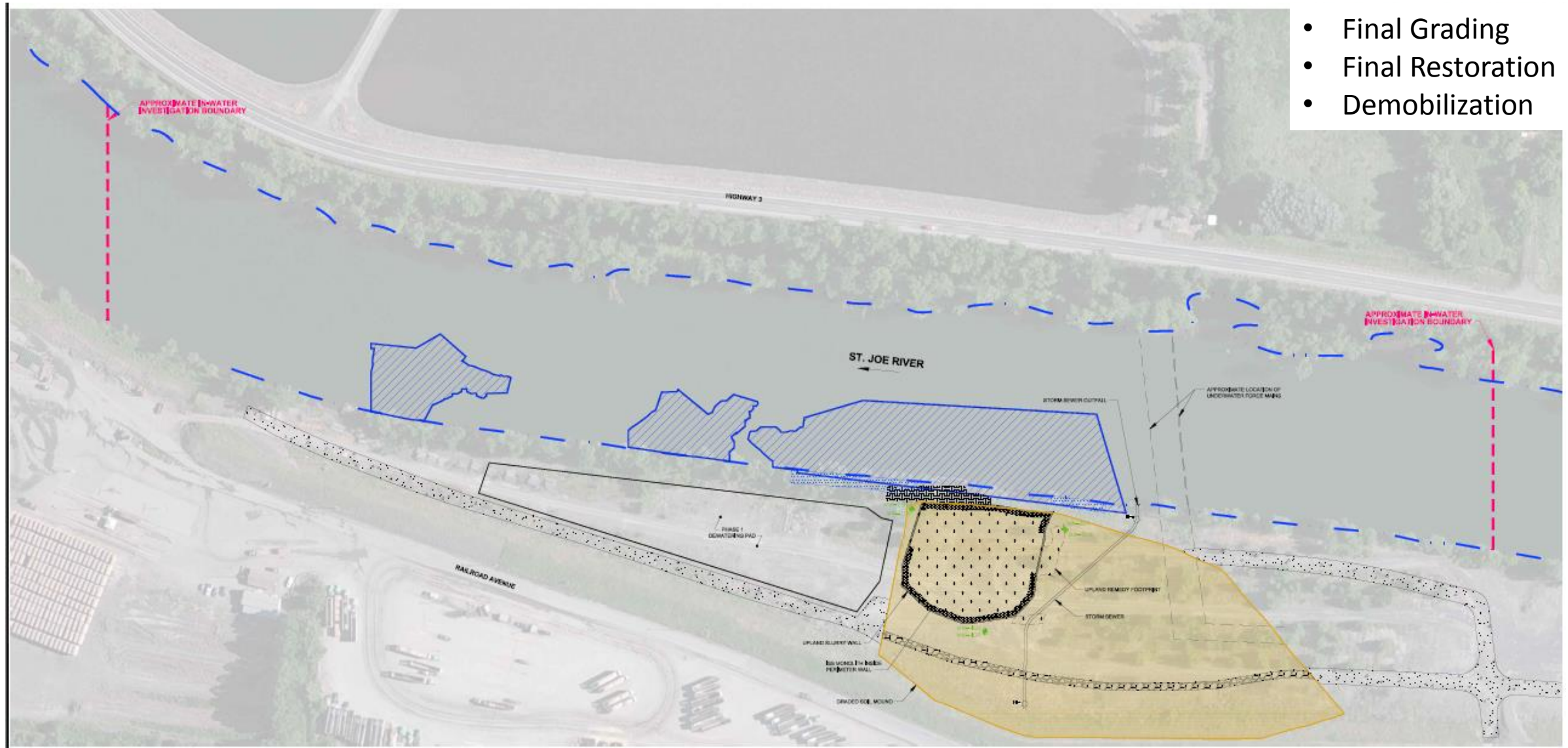


Thermal Desorption Unit

- 900-950° F
- 45,000 tons of soil treated



Remedy Components- Phase IV (Aug 2017-Oct 2017)





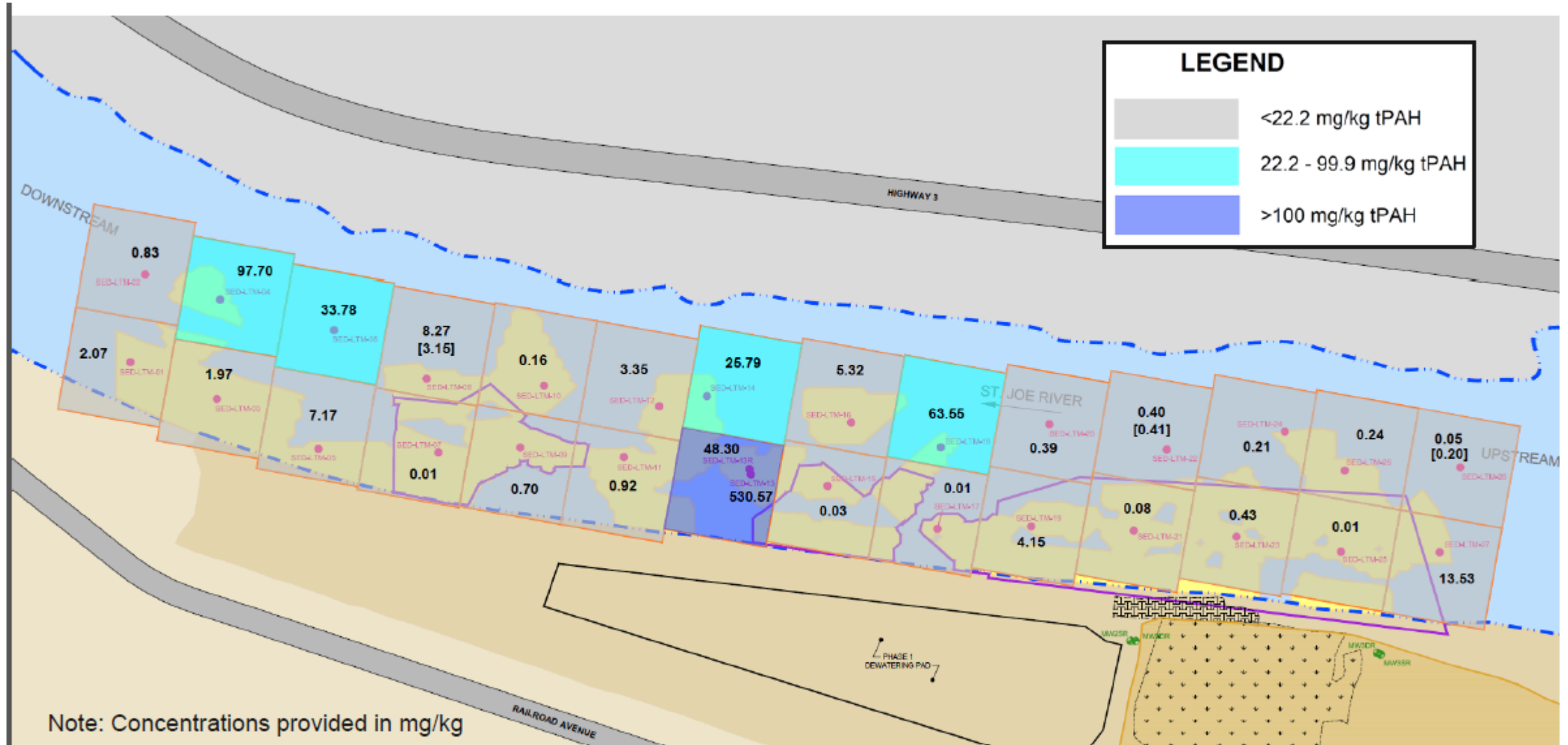
Final Grading and Revegetation (April 2018)



Long Term Monitoring- Sediment



Long Term Monitoring- Sediment 2017



Next Steps

- Sediment sampling (ongoing now)
- Continuing groundwater sampling
- Five Year Reviews (first one due September 30, 2019)



Barge Delivery (June 2015)

- 200-ton cranes used to place barges in river
- Idaho State Dept. of Agriculture inspected the received barges for invasive species
 - 4 of the Sunflower barges were identified as having dead zebra mussels attached.



First Sheet Pile Removed (after 2 week settling period)

