

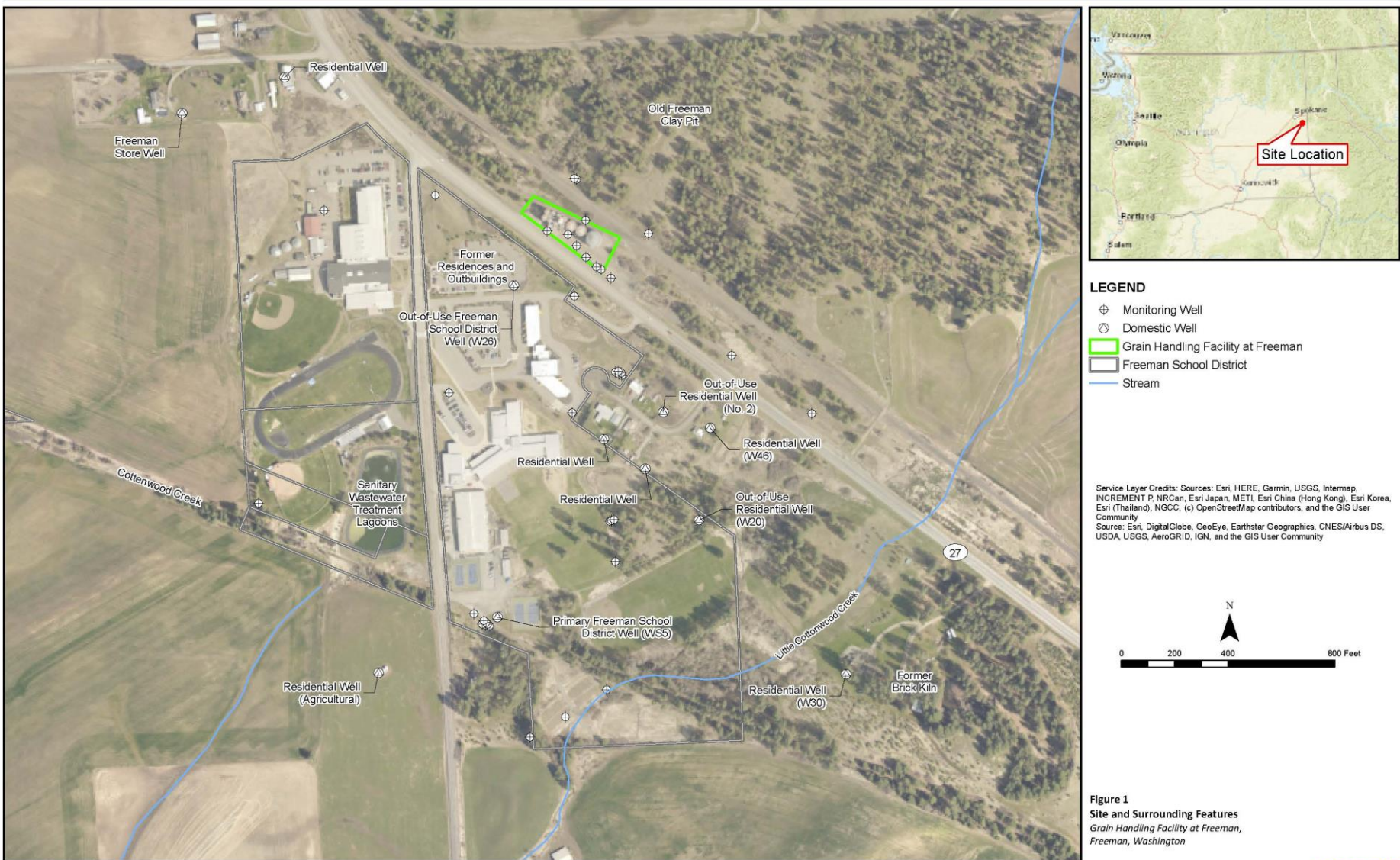
# Grain Handling Facility at Freeman Site Draft Interim Action Work Plan

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Toxics Cleanup Program  
Eastern Region



# Site Location



# Why are we here?

- Historic operations at the grain handling facility released carbon tetrachloride
- Those releases contaminated the groundwater
- Well water at the Freeman School District and several residences is contaminated and being treated
  - Treated drinking water is safe



# What are these chemicals?

- **Carbon tetrachloride** – fumigant used as pest control in grain storage facilities; banned in 1986 for that use; carcinogen
  - Liquid; spills seep through soil into groundwater
  - Vapors are created
- **Chloroform** – created when carbon tetrachloride degrades; carcinogen



# How did this start?

- 2008: CT first increased above standards at FSD
- 2012: Consistent detection over federal standards
- 2012: EPA evaluated potential sources of CT at the request of state and local authorities; grain handling facility identified as most likely source
- 2013: Treatment of FSD water started
- 2015: EPA proposed NPL listing; Ecology takes lead on investigations
- 2015: Ecology issued enforcement order to UP and CHS to complete RI/FS – due May 2017

CT – carbon tetrachloride, EPA – US Environmental Protection Agency, FSD – Freeman School District, NPL – National Priorities List, RI/FS – Remedial Investigation/Feasibility Study, UP – Union Pacific Railroad Company, CHS – Cenex Harvest States

# What were we trying to find out?

- Was there a source; could it be cleaned up?
  - Soil, groundwater, and vapor sampling
  - Geophysical surveys to look for tanks
  - Horizontal drilling and sampling under the silos
- Where was contamination?
  - Well drilling and sampling
  - Different aquifers and depths
  - Soil sampling
- How was contamination moving?
  - Pumping tests
  - In-well flow tests, in-well geophysical tests

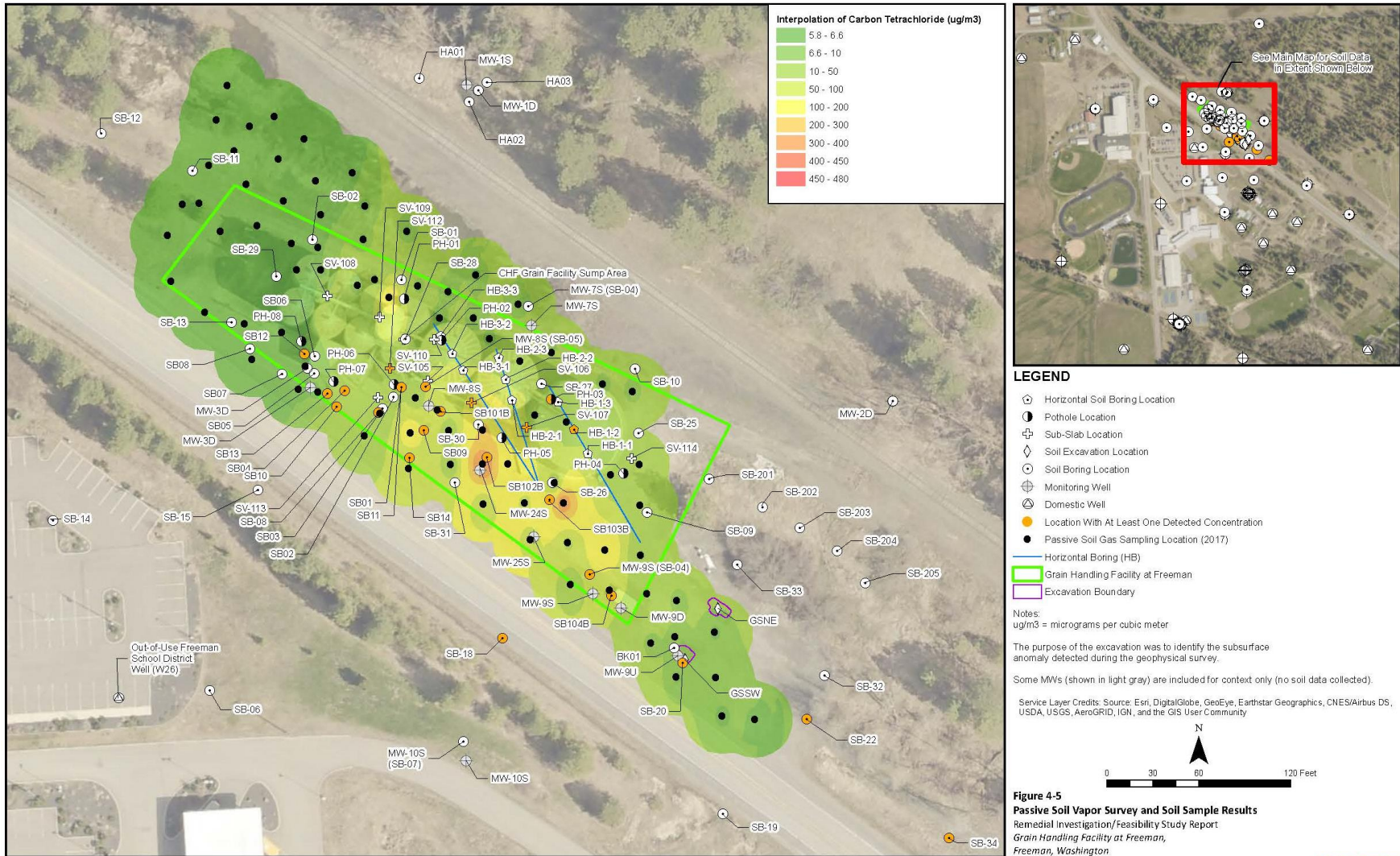


# What work has been done by UP?

- 2016
  - Discovery of impacted residential well water & treatment start
  - Installation of 44 soil borings, 21 wells & sampling
- 2017
  - One-year extension for RI/FS – due May 2018
  - Installation of 4 soil borings, 9 wells & sampling
  - Collection of 83 on-site vapor, 10 soil vapor, 9 sub-slab vapor samples
- 2018
  - Four-month extension for RI/FS – due Sept 2018
  - Installation of 8 soil borings, 13 wells & sampling
  - 15-month extension for RI/FS; required completion of Interim Action if granted
- 2019
  - Interim Action Plan submitted to Ecology (open for comment)
  - RI/FS submitted to Ecology (under Ecology review)



# Sampling at GHFF Property



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**JACOBS**





# Well Locations



## LEGEND

- Extraction Well
- Monitoring Well
- Domestic Well
- Stream Gauge
- Grain Handling Facility at Freeman

### Note

1. EW-6U, EW-9U, MW-22s and MW-23s were decommissioned due to artesian conditions.
2. Davey, Brandt and Freeman Store wells are not included in the GW monitoring program.

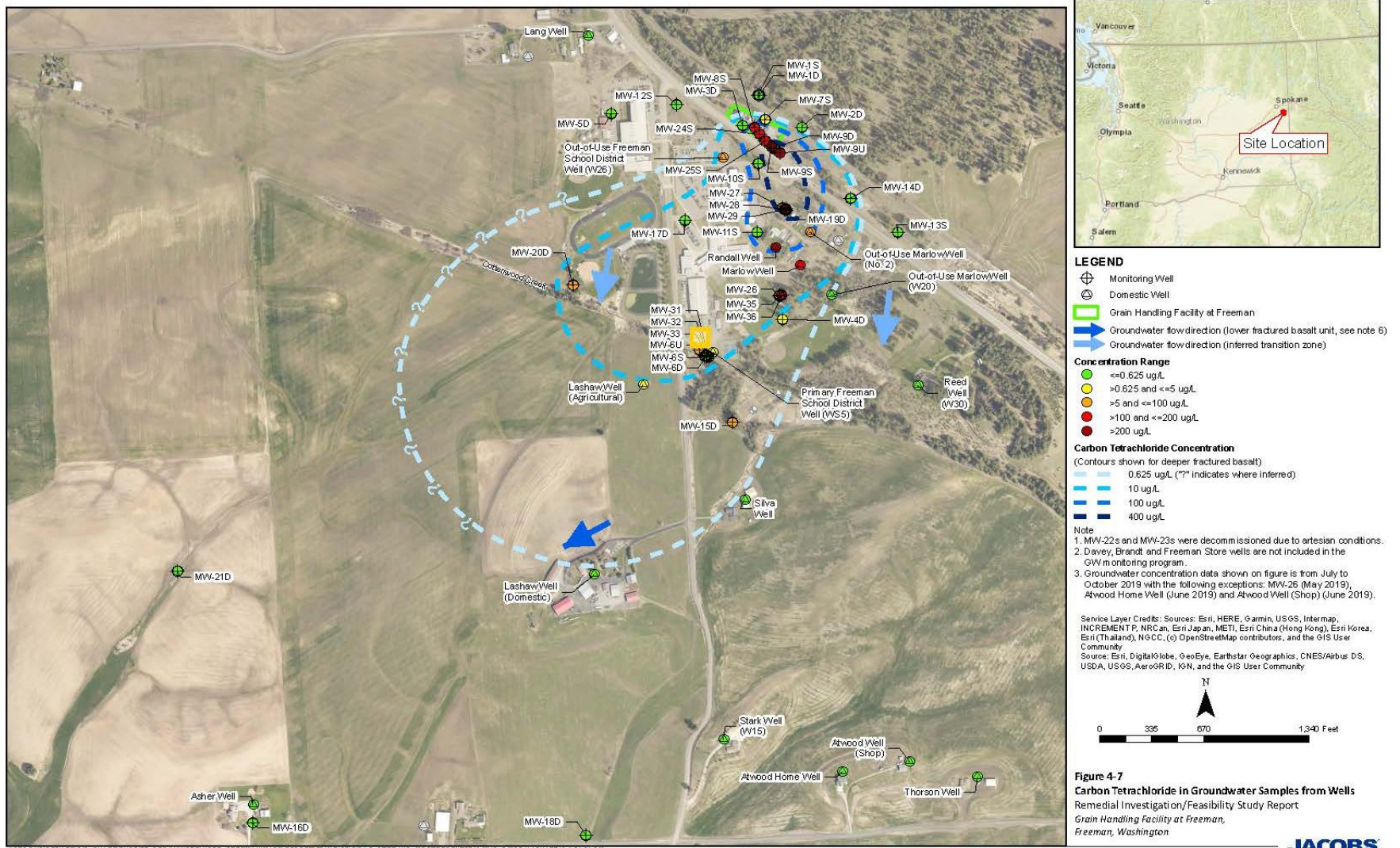
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**Figure 4-6**  
**Well Locations/Groundwater Monitoring Network**  
 Remedial Investigation/Feasibility Study Report  
 Grain Handling Facility at Freeman,  
 Freeman, Washington



# Groundwater Plume





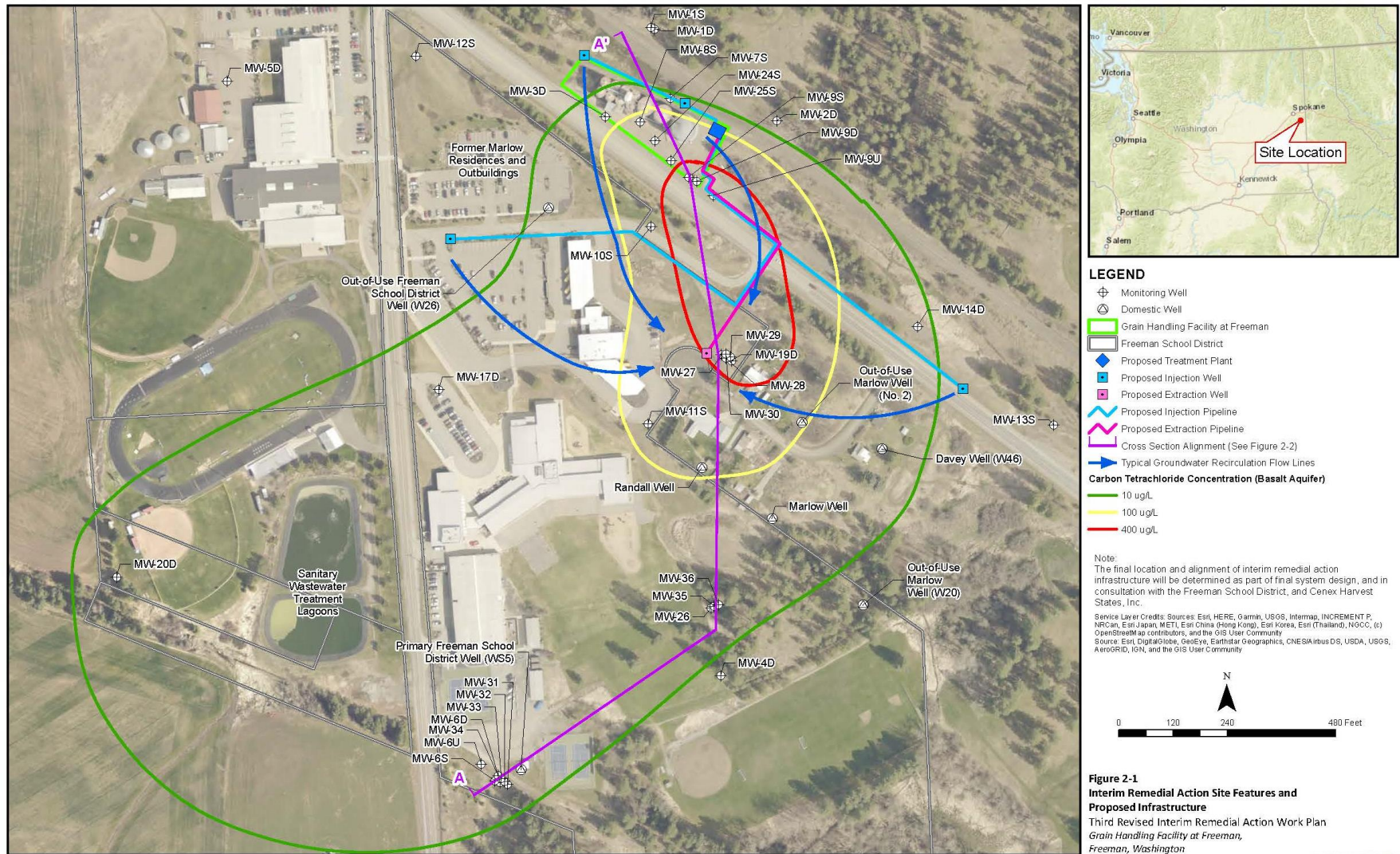
# What is being proposed?

UP will complete an Interim Cleanup Action with Ecology oversight

- Installing one pumping well and four infiltration wells (and piping/infrastructure)
- Installing a water treatment building on the grain handling facility property
- Pumping contaminated water, treating with carbon filters, and infiltrating clean water back into the aquifer
- Adjusting pumping and infiltration rates to ensure the water supply is protected



# Interim Action Plans



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# What will this accomplish?

- Start removing contamination and reduce the plume size
- Reduce risk to downgradient water supplies
- Allow testing of different pumping rates to ensure the water supply is protected
- Allow measurement of how much water can be infiltrated
- Opportunity to use this data to craft the best final treatment system



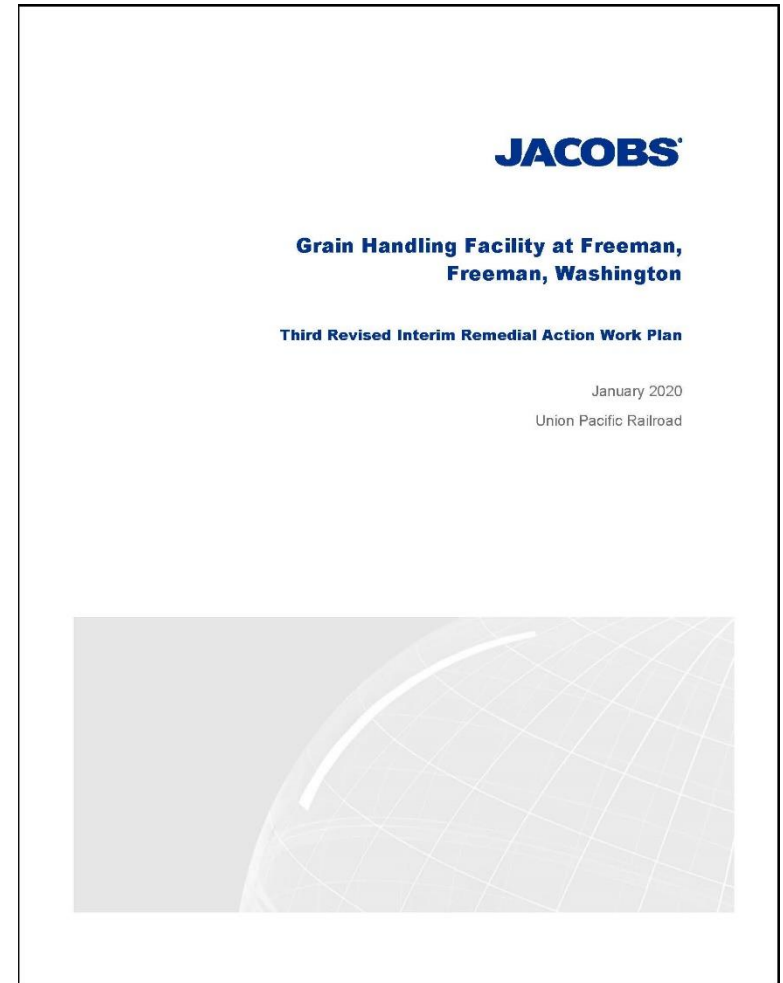
# Proposed Schedule for Interim Action

- Spring 2020
  - Design pump & treat system
  - Hire contractors
  - Acquire permits
- Summer 2020
  - Build system
- August 2020
  - Start operation



# What are the outcomes of this comment period?

- Provide comments in writing by March 13
- We respond to comments; commenters will receive the response document and it's posted online
- Changes will be made to the work plan, if needed
- The interim action design/construction will start





# What are the next steps in the cleanup process?

- Ecology reviews RI/FS
  - Public review and comment
- Ecology writes Cleanup Action Plan (our cleanup decision)
  - Public review and comment
- Legal document for PLPs to complete cleanup
  - Public review and comment
- PLPs conduct final cleanup



# Who can I talk to?

- Ecology Site Manager
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- Union Pacific
  - Aaron Hunt  
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