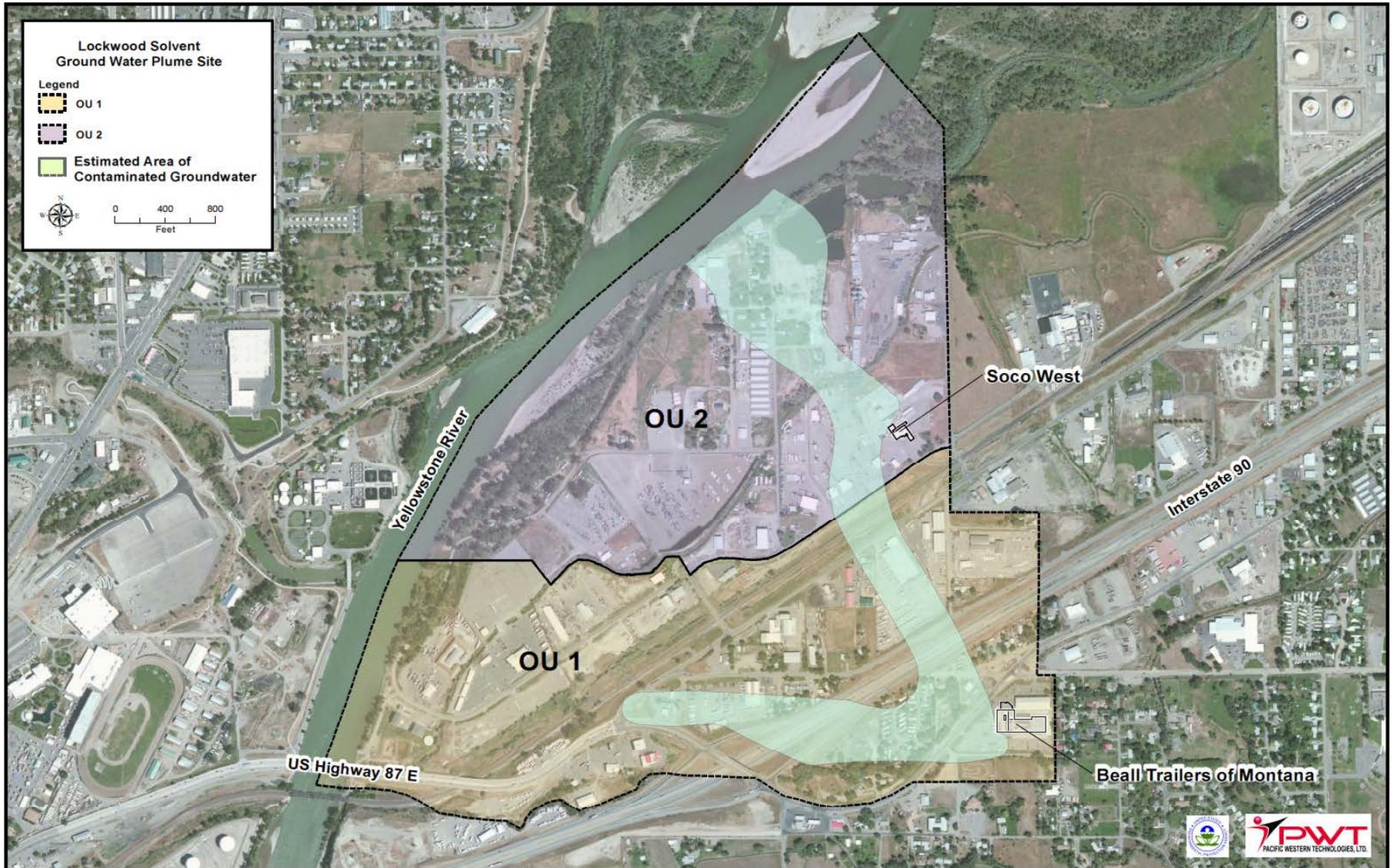




Lockwood Solvent Ground Water Plume Site

Open House
January 24, 2013

SITE LAYOUT



CHEMICALS OF CONCERN

- ▶ Tetrachloroethene (PCE) spilled into soil during the process of being re-packaged and shipped from the Soco property
- ▶ Trichloroethene (TCE) moved into soil from the septic system after years of being used to clean trucks at the Beall property
- ▶ PCE may break down to TCE in soil and ground water
- ▶ Cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) are new chemicals that may form when TCE breaks down in soil and ground water
- ▶ All four chemicals can cause serious health risks, primarily through ingestion and inhalation

CHEMICAL BREAKDOWN

Tetrachloroethene



Trichloroethene



Cis-1,2-Dichloroethene



Vinyl Chloride



These chemicals become more mobile as they break down

OPERABLE UNIT 1 – BEALL DATA TREND EVALUATION RESULTS

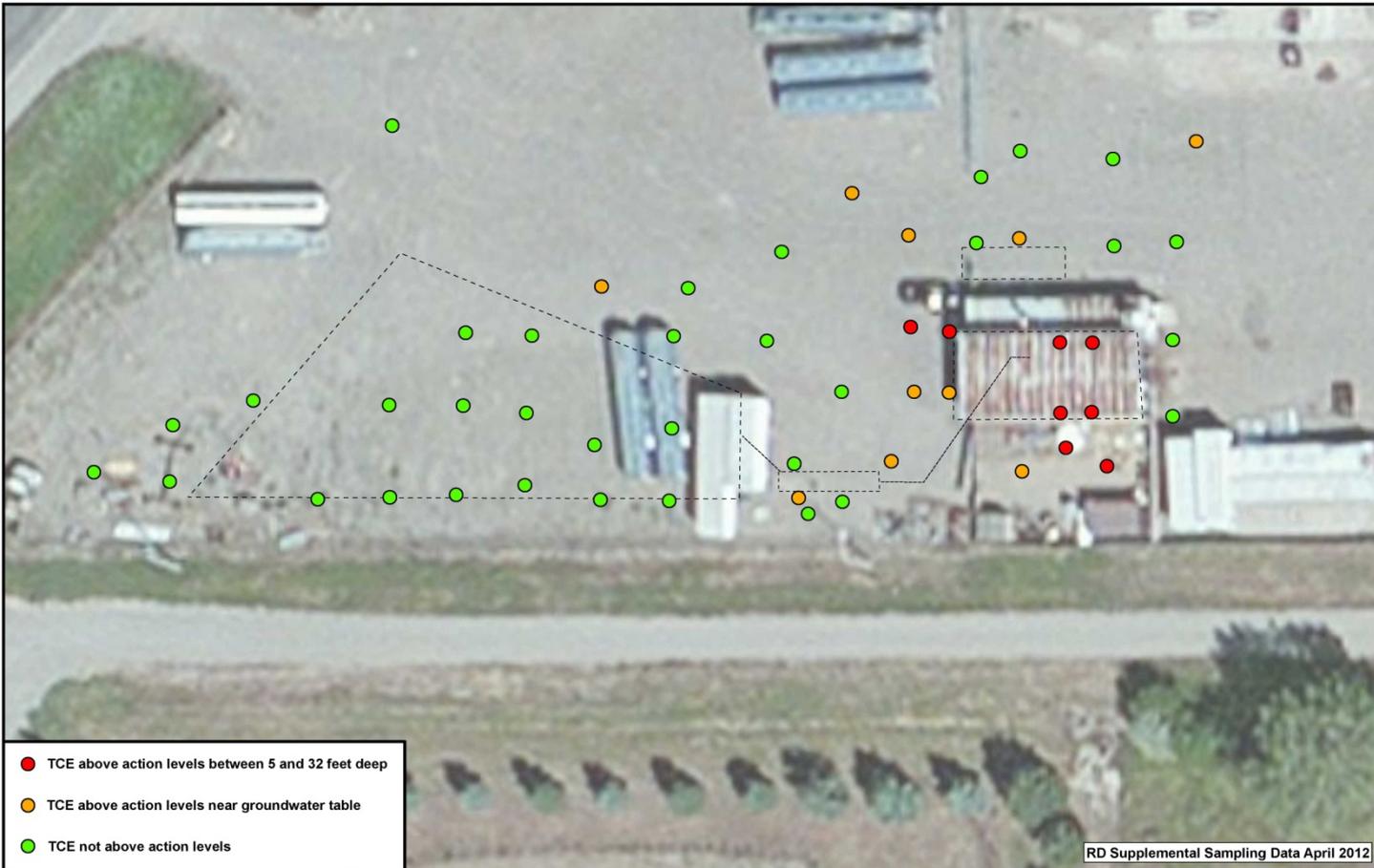
April 2012

- ▶ Additional soil and ground water samples collected to begin the design of the remedial (clean up) components
 - Low permeability soil narrows the potential use of soil vapor extraction
 - Data indicates source area localized under and near the steam clean bay
 - Ground water contamination consistent with historical data, better defined the “edges”

January 2013

- ▶ Aquifer test conducted to support ground water clean up and Institutional Controls

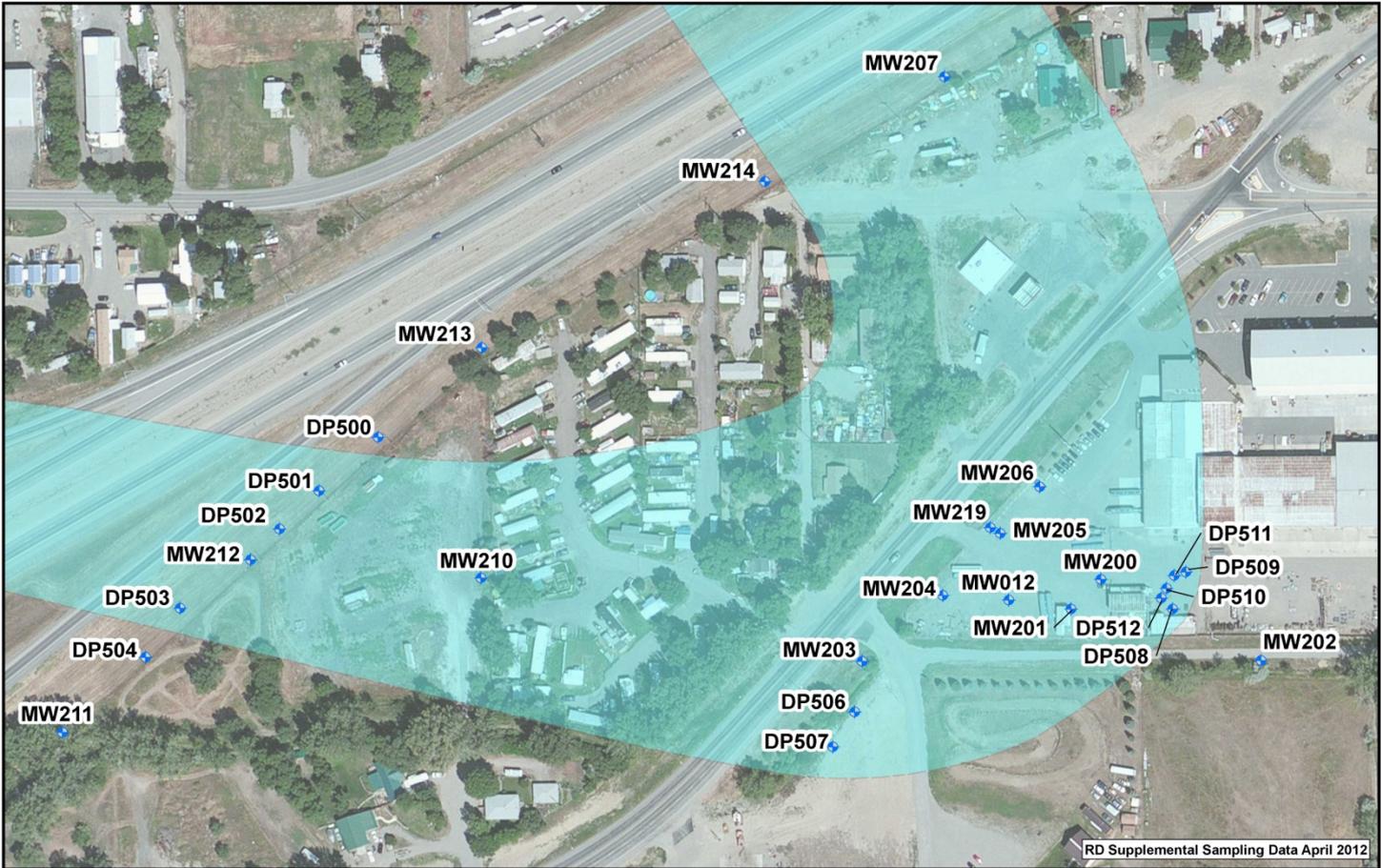
OPERABLE UNIT 1 – BEALL APRIL 2012 SOIL RESULTS



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OPERABLE UNIT 1 - BEALL

APRIL 2012 GROUND WATER RESULTS



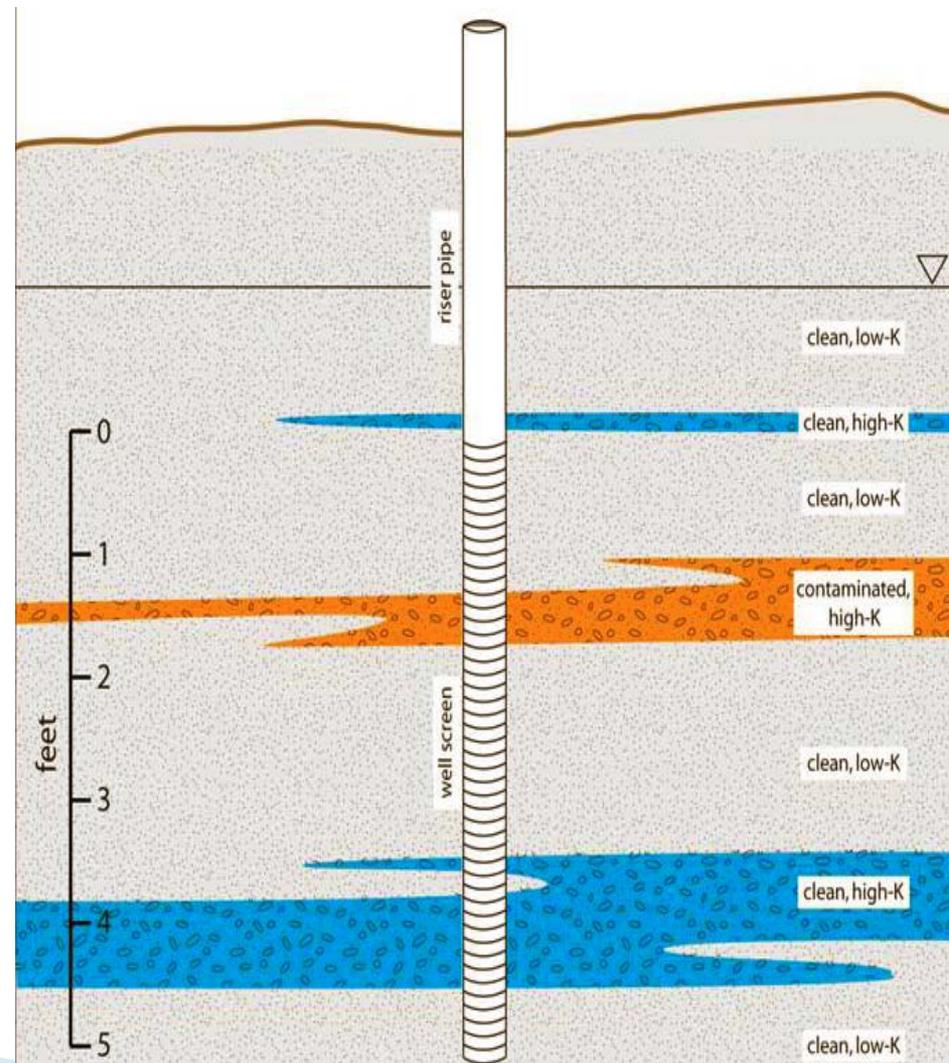
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OPERABLE UNIT 1 – BEALL PLANS FOR 2013

- ▶ Remedial design for soil and ground water
 - Involves injection of supplements to breakdown contaminants in the ground water
 - Looking at possibly excavating and treating the contaminated soil down to 35 feet below the steam clean bay
- ▶ Vapor Intrusion Assessment
 - Soil gas sampling at exterior of 6 – 8 homes near Beall
 - Scheduled for early summer
 - Results to indicate if further assessment is necessary

OPERABLE UNIT 2 – SOCO WEST 2012 ACTIVITIES

- ▶ Review and approval of multiple documents and work plans
- ▶ Identified data gaps

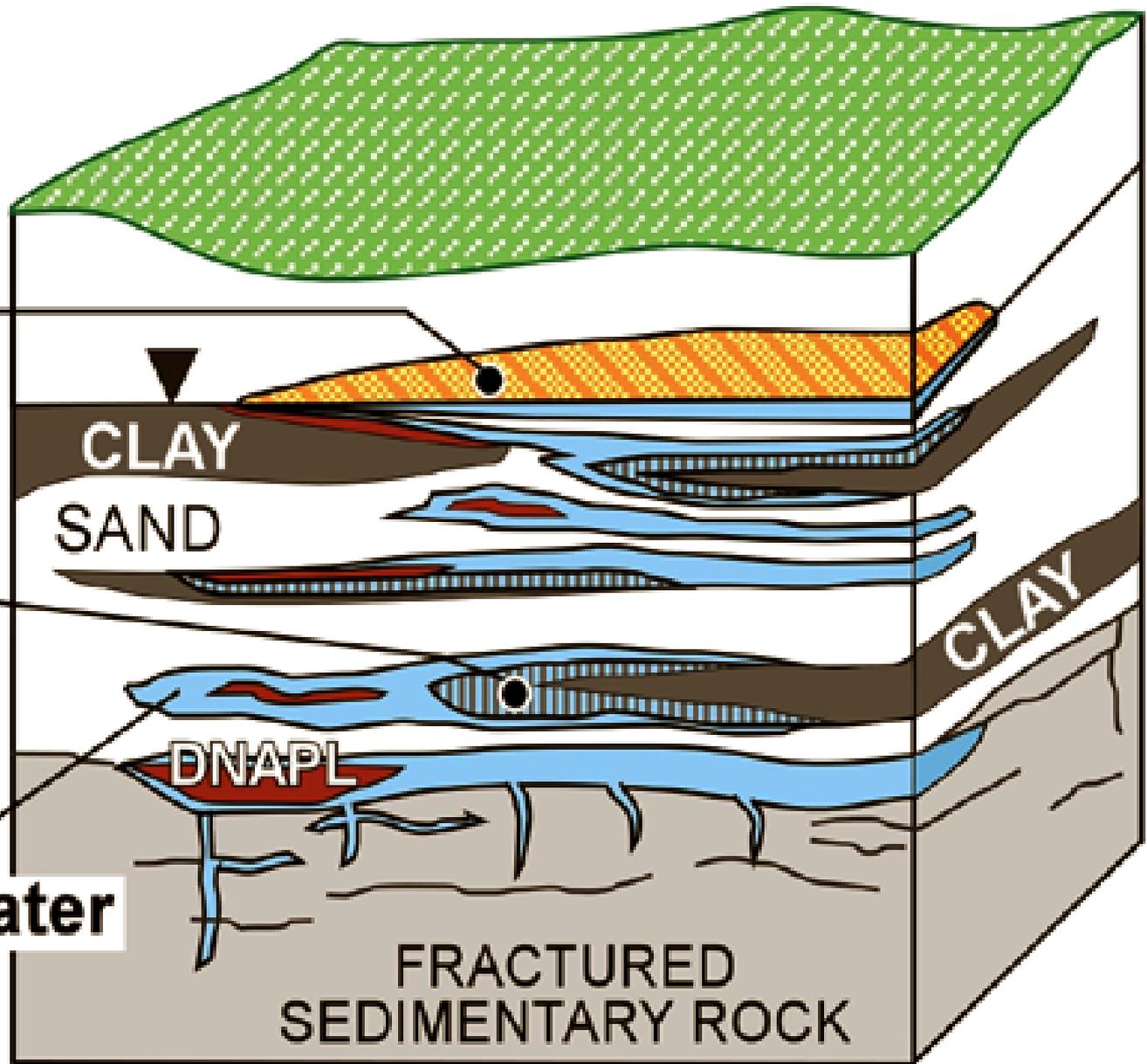


**Vapor
Plume**

**Matrix
Storage**

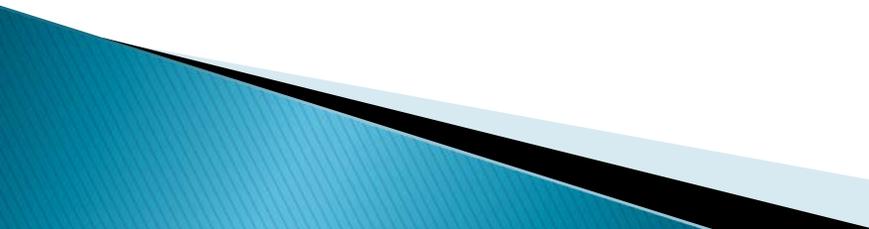
(Dissolved
and sorbed
phases in
low flow
zones)

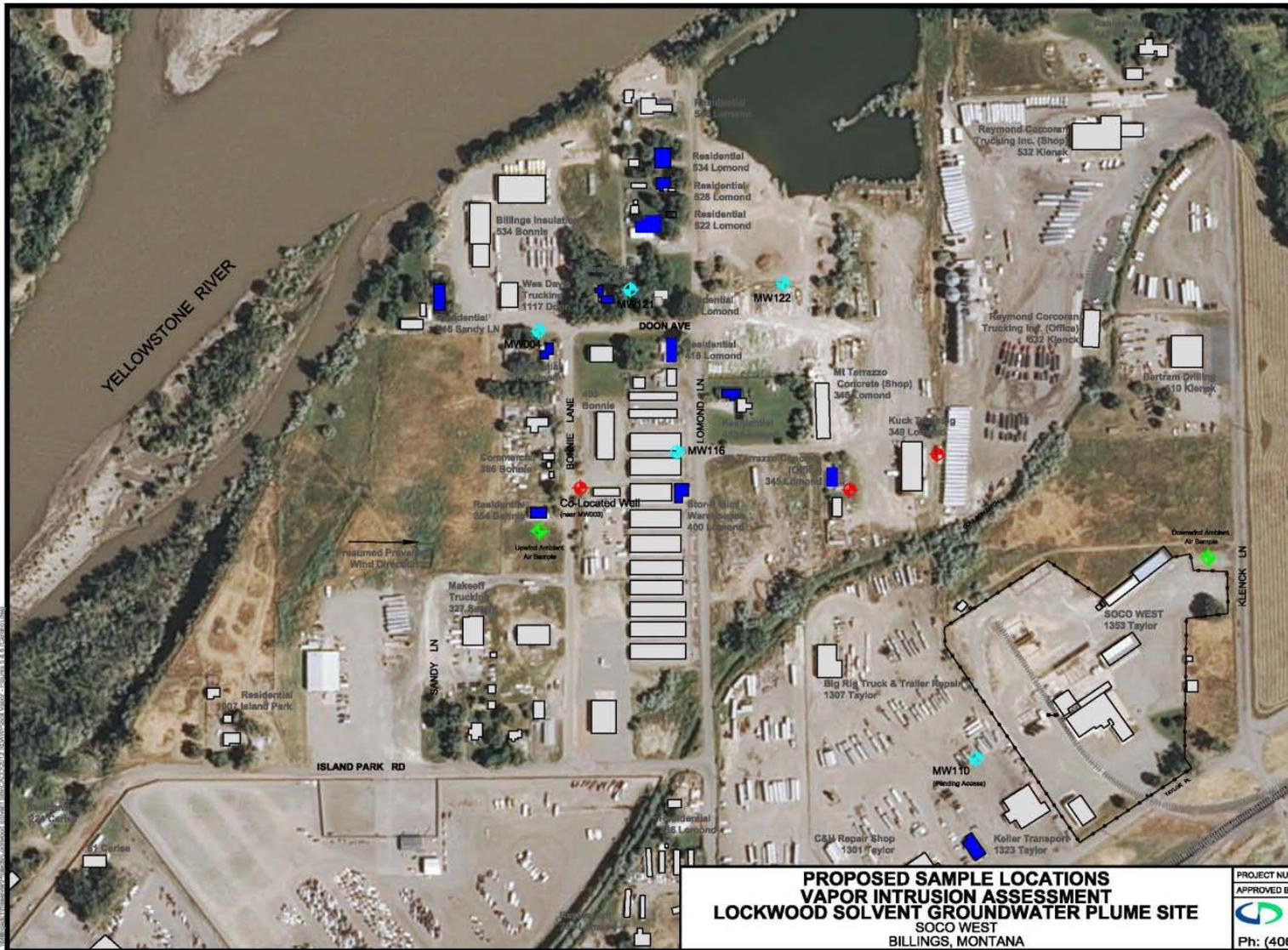
**Groundwater
Plumes**



OPERABLE UNIT 2 – SOCO WEST PLANS FOR 2013

Vapor Intrusion Assessment

- ▶ Determine if contaminants from the ground water plume are migrating into homes and businesses
 - ▶ Sampling will consist of ground water, sub-slab/soil vapor and indoor air samples
 - ▶ Currently meeting with landowners and obtaining access agreements for Vapor Intrusion Assessment sampling
- 



LEGEND

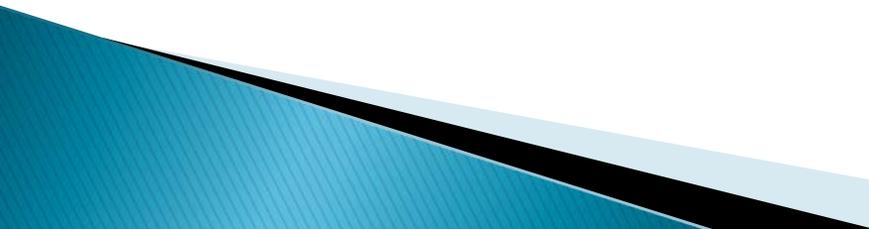
- Railroad
- Fence
- Property Boundary
- ▭ Building
- ◆ Existing Monitoring Well Sample Locations
- ◆ Proposed Shallow Well Locations (EPA)
- ◆ Proposed Ambient Air Sample Locations
- ▭ Buildings Proposed for Vapor Sampling

PROPOSED SAMPLE LOCATIONS
VAPOR INTRUSION ASSESSMENT
LOCKWOOD SOLVENT GROUNDWATER PLUME SITE
 SOCO WEST
 BILLINGS, MONTANA

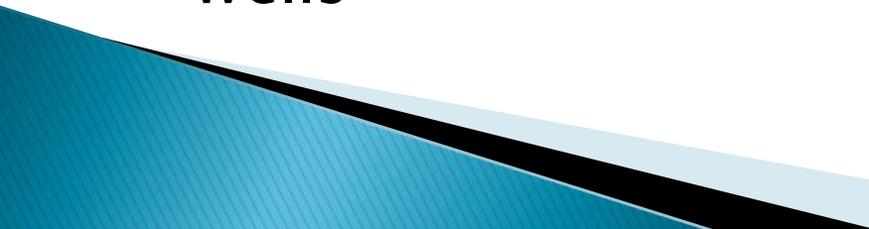
PROJECT NUMBER: 61.24884.0009	DATE: 09-07-2012	FIGURE
APPROVED BY: JS	DRAWN BY: MF	6
Cardno ATC 917 1st Avenue North Billings, Montana 59101-2048 Ph: (406) 259-1033 *** Fax: (406) 259-1099		

OPERABLE UNIT 2 – SOCO WEST PLANS FOR 2013

REMEDIAL DESIGN ASSESSMENT

- ▶ Installation of monitoring wells and collection of groundwater and soil samples for laboratory analysis
 - ▶ Samples will also be used for bench scale treatability studies, evaluating the effectiveness of different cleanup technologies on the site conditions
 - ▶ Data from the Remedial Design Assessment will be used to aid in the Remedial Design
- 

SITE – WIDE PLANS FOR 2013

- ▶ Support continuation of the Lockwood Water and Sewer District sewer line installation project
 - ▶ Implement Institutional Controls
 - Controlled Ground Water Area through the Department of Natural Resources and Conservation with support of Yellowstone County
 - Deed notices for Soco West and Beall properties
 - Continued educational outreach
 - ▶ Participate in Optimization review through EPA Headquarters
 - ▶ Continue semi-annual sampling of ground water wells
- 

FOR MORE INFORMATION

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 - (406) 841-5040
 - jpodolinsky@mt.gov
- ▶ MSU – Billings Reference Library
- ▶ Website
www.epa.gov/region8/superfund/mt/lockwood_solvents