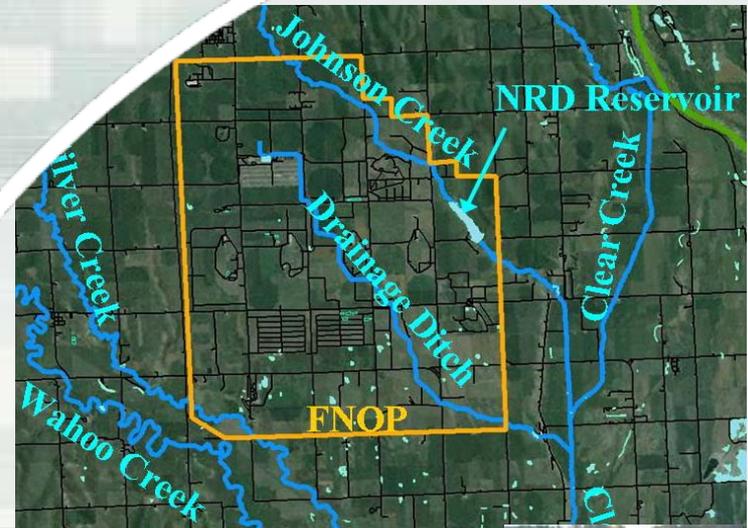


Operable Unit-3 History and Updates

Kirk Boese – USACE

January 19, 2011



Former Nebraska Ordnance Plant Operable Units

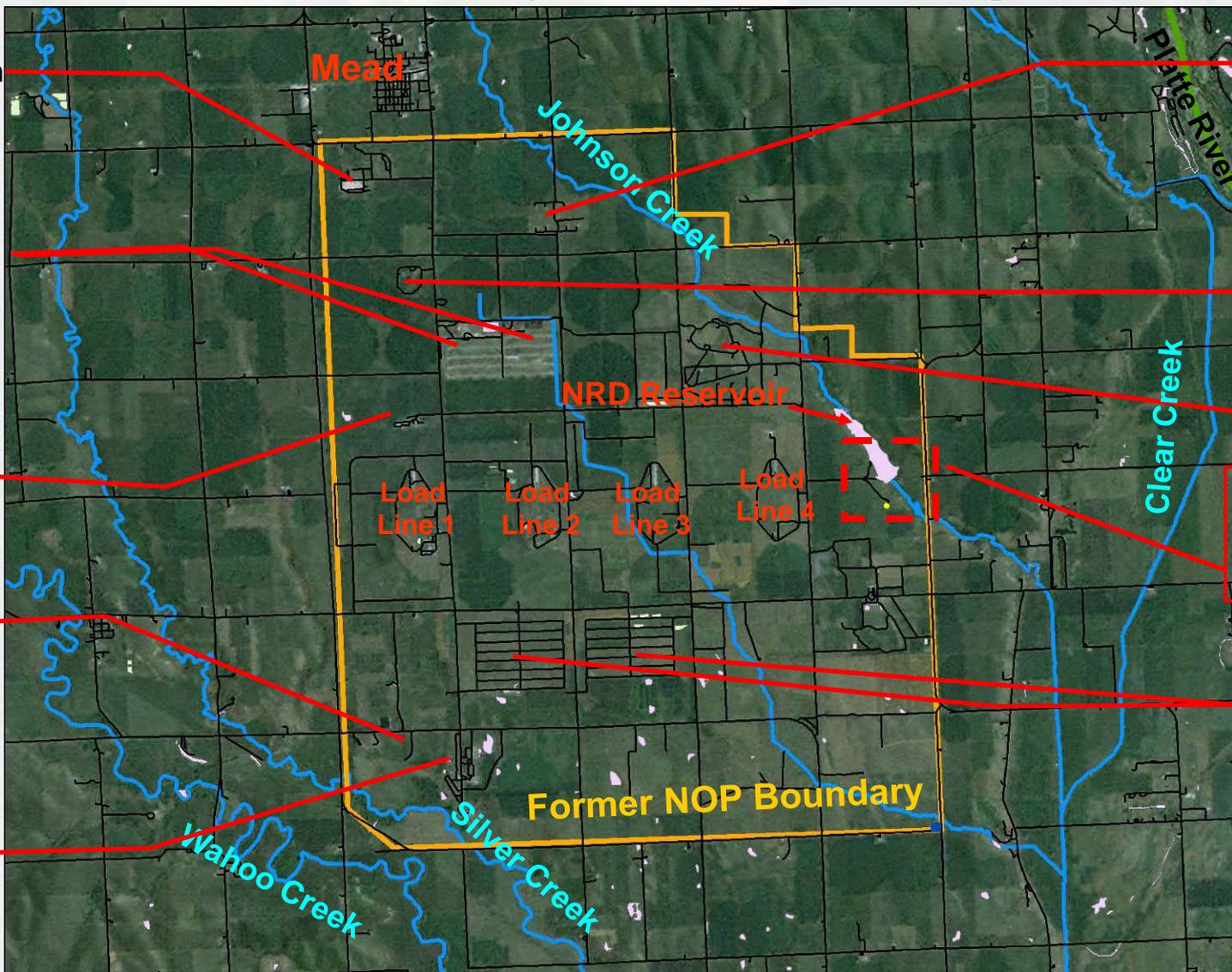
- Operable Unit 1: (OU-1) covers all soils contaminated by explosives at the former NOP (Remediation completed 1999)
- Operable Unit 2: (OU-2) covers all remaining indentified contaminated media not addressed in OU-1 or OU-3 and will include, but is not limited to, trichloroethene-contaminated areas, if not addressed as part of OU-1, and contaminated groundwater
- Operable Unit 3: (OU-3) covers the landfill located near the former sewage treatment plant at the former NOP, as well as any other currently unidentified waste disposal areas

Note: Definitions of Operable Units from the Interagency Agreement, also known as the Federal Facilities Agreement from 1991

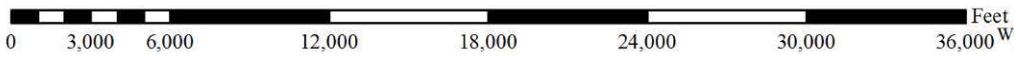


Former NOP Site Layout/OU-3 Investigation Areas

Administration
Igloo storage
Nike Missile Maintenance
Detonation Crater
Demolition Ground



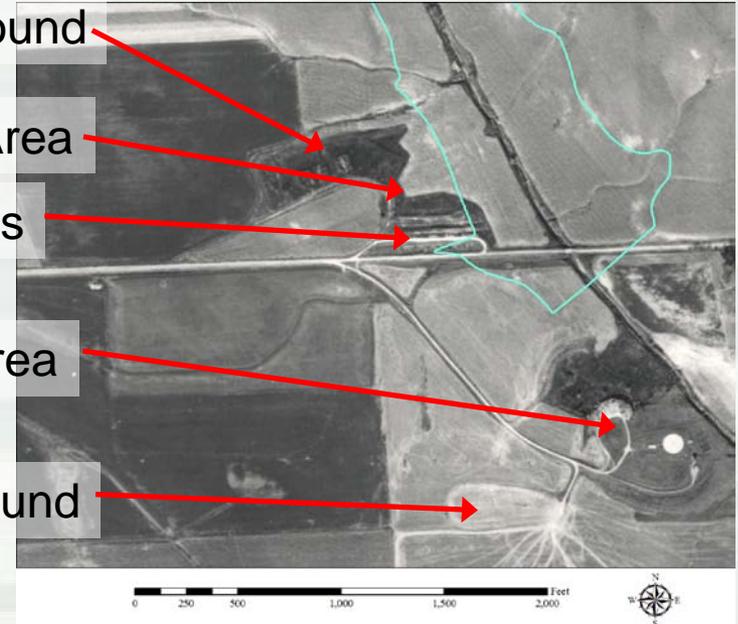
Ammonium Nitrate Plant
Tetryl Pelleting/Bomb Booster Assembly
Atlas Missile Area
Detail of areas shown on next slide
Igloo storage



Former NOP Site Layout/OU-3 Investigation Areas (Near Natural Resources District Reservoir)



2009 ESRI (Environmental Systems Research Institute, Inc)



1965 (obtained from University of Nebraska - Lincoln collection and georeferenced against recent aerial)



Former NOP OU-3 Timeline

- 1995-1996: Phase I and Phase II Remedial Investigation
- 1999: Phase III Remedial Investigation
- 2000: OU-3 Baseline Risk Assessment Draft Final Report, Antimony-impacted soils identified
- 2005: Regular monitoring of surface water began
- 2007: USEPA Vapor Intrusion Study
- 2008: OU-3 Removal Action (excavation of antimony-impacted soils at Load Line 2, Load Line 4, and the Potential Landfill Area)
- 2008: OU-5 Removal Action (discovery of “burn layer” in test pit)



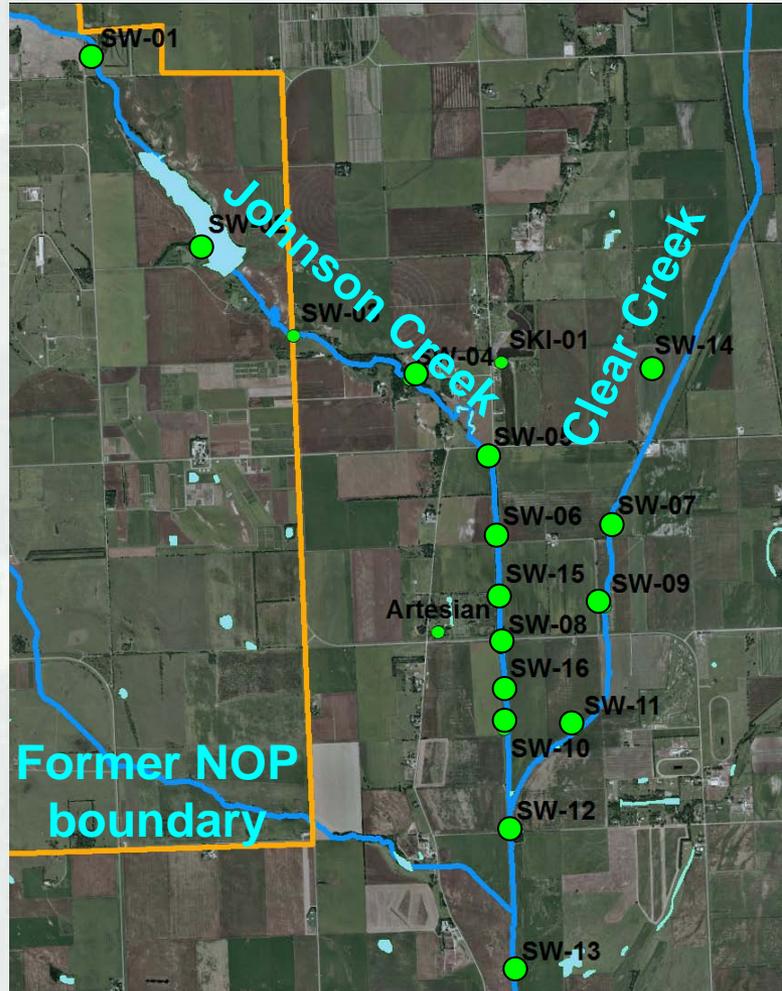
OU-3 RI Investigations, Baseline Risk Assessment, & Removal Action

- Baseline Risk Assessment (URS 2000):
 - ▶ All carcinogenic risks within or below USEPA risk range.
 - ▶ All hazard indices below risk range except: child resident from exposure to soil (0 to 2 ft depth) at Load Lines 2 and 4 Paint Buildings and the Potential Landfill Area → Primary risk contributor: Antimony

- Removal Action (Kingston 2008):
 - ▶ Antimony-impacted soil was excavated from Load Lines 2 and 4 Paint Buildings and the Potential Landfill Area



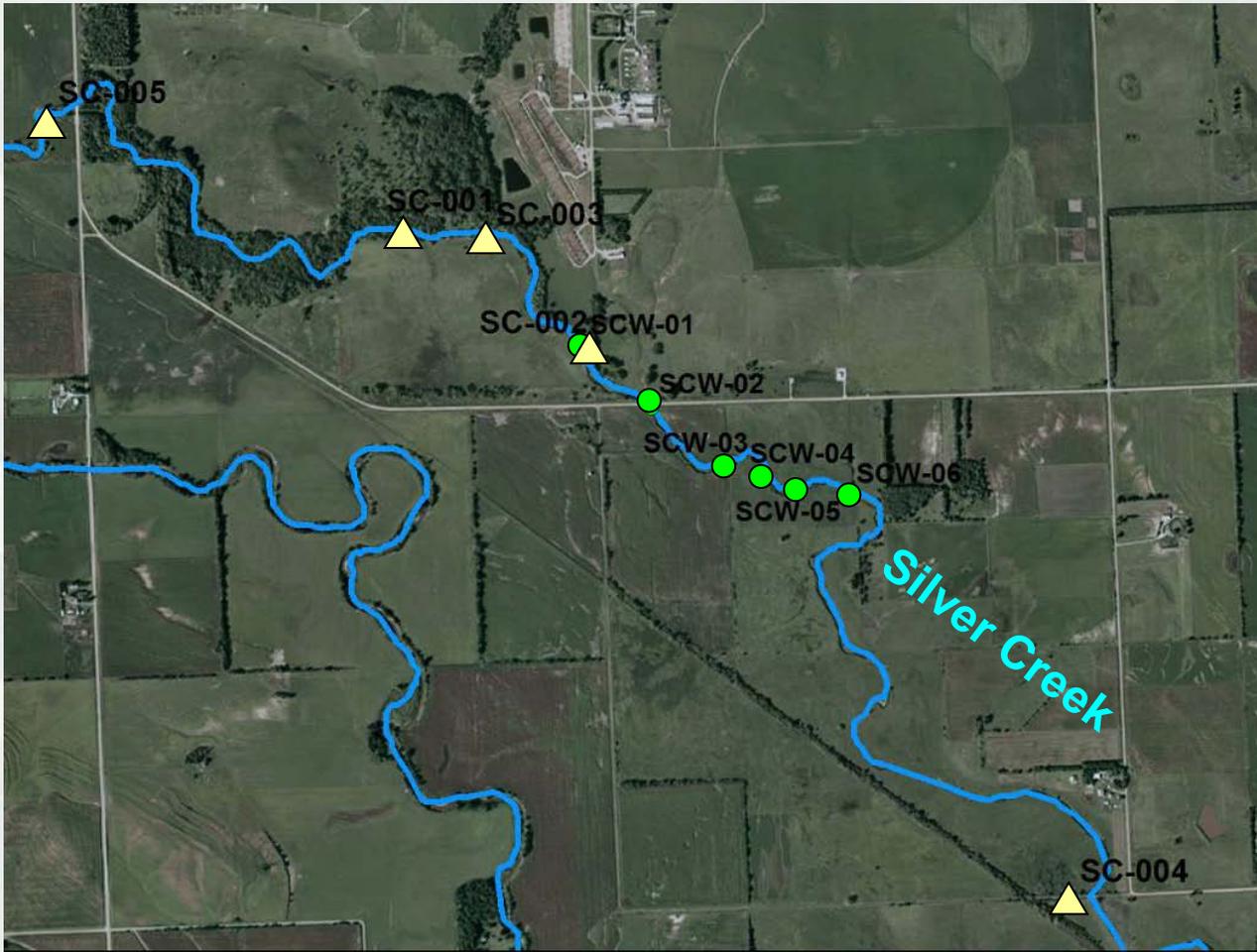
Johnson Creek and Clear Creek Sampling Locations



● Surface Water
Sampling Locations



Silver Creek Sampling Locations



- ▲ Surface Water Sampling Locations (March 1995 through May 1999)
- Surface Water Sampling Locations (March 2005 to current)

0 0.25 0.5 1 1.5 2 Miles



Previous OU-3 Investigation Areas

No Further Action

- Load Lines 1-4 Bomb Production Buildings
- Load Lines 1-4 Paint Operations Area
- Former Raw Products Igloo Storage Areas
- Former Tetryl Pelleting Area
- Potential Waste Disposal Areas north of former Nike Maintenance Area, former Bomb Booster Area, former Ammonium Nitrate Plant, and former Atlas Missile Area
- USTs at the former Administration, Bomb Booster, and Atlas Missile Areas and the former Air Force Communications Center
- Geophysical Anomaly at Load Line 3
- North Burning Ground
- Potential Landfill Area
- South Burning Ground
- Proving Grounds
- Former Landfill Area
- Demolition Ground
- Detonation Craters
- Bermed Area SW of Load Line 1
- Northeast Boundary Area
- Former Ammonium Nitrate Plant
- Vapor Intrusion Buildings of Potential Concern on Load Line 4



Former NOP OU-3 Supplemental Remedial Investigation Focus Areas

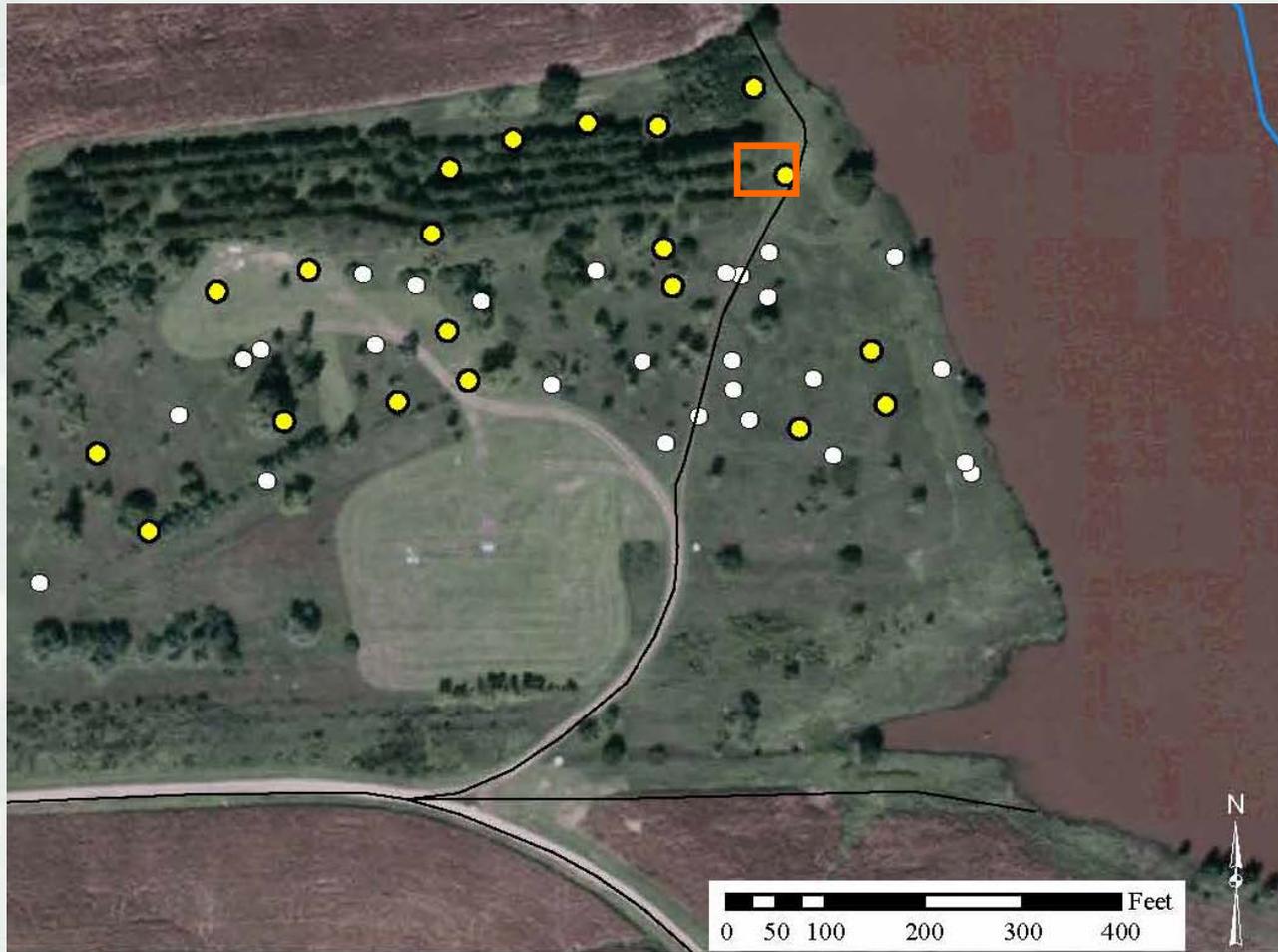
- Metals in the Potential Landfill Area and North Burning Ground to identify extent of “Burn Layer”
 - ▶ Additional soil samples collected

- Surface Water (incorporate more recent data into previous risk assessment)
 - ▶ Johnson Creek
 - ▶ Clear Creek
 - ▶ Silver Creek

- Vapor Intrusion at four buildings located above the Load Line 1 TCE plume
 - ▶ Air/soil gas samples collected



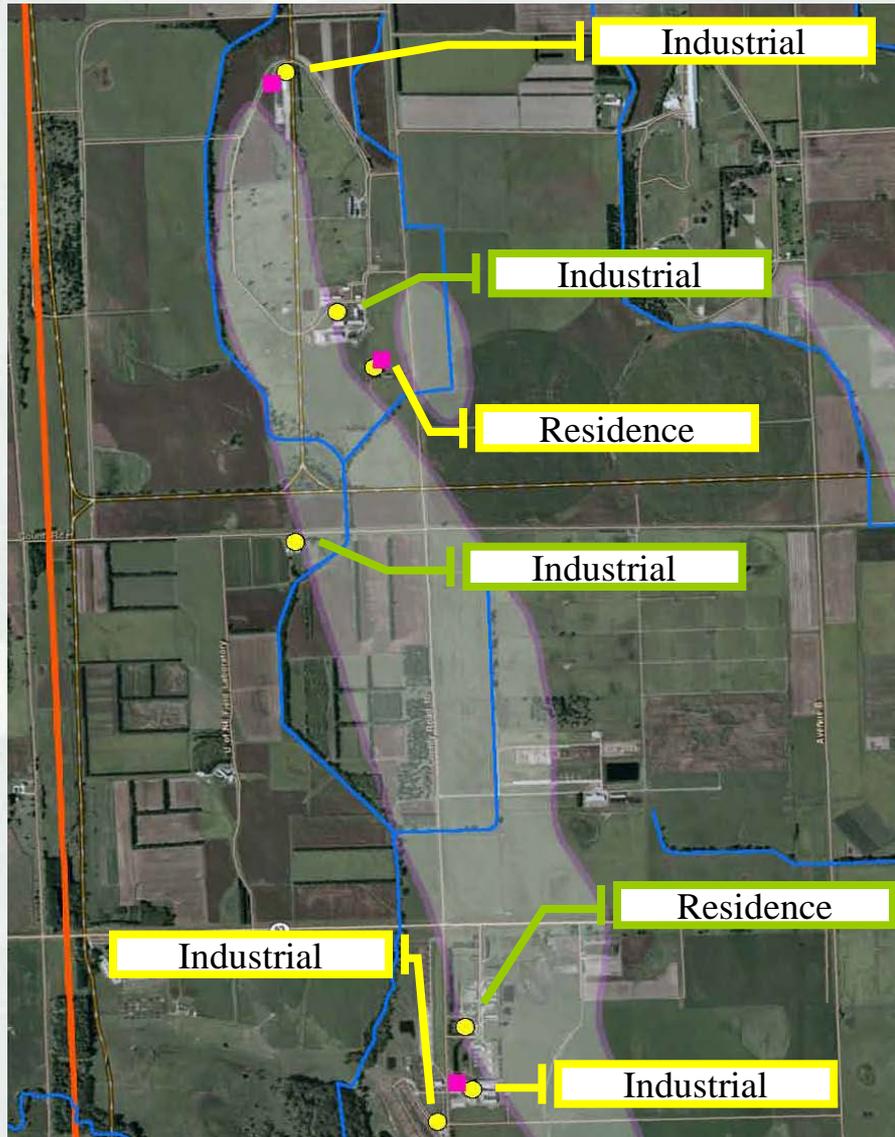
Previous Sampling Locations for Metals in the North Burning Ground and Potential Landfill Area



- 2010 Supplemental RI sample location
- Previous soil sample locations
- Soil excavated in previous Removal Action



Load Line 1 Buildings Sampled in Previous USEPA Vapor Intrusion Investigation and Current Investigation



- Outdoor sampling Location (OU-3 Supplemental Field Work)
- Load Line 1 Building of Potential Concern
- Building sampled
- Building previously sampled and screened out based on USEPA Regional Screening Levels



What's Next for OU-3?

- Update Baseline Human Health Risk Assessment for Surface Water, Vapor Intrusion, and Soil in the North Burning Grounds and Potential Landfill Area
- Supplemental OU-3 Remedial Investigation Report (2011)
- Supplemental OU-3 Feasibility Study (if necessary)
- OU-3 Proposed Plan (2012)
- OU-3 Record of Decision (2013)



Questions

WE THE PEOPLE
insure domestic Tranquillity, provide for the common
and our Posterity, do ordain
this Constitution

