



Community Meeting Cottonwood, AZ

February 27, 2025

Online Tools

Use the Question Tool



The screenshot displays a GoToWebinar interface with two main panels. The top panel, titled 'Audio', includes a 'Sound Check' indicator with a green bar and a question mark. It offers two audio options: 'Computer audio' (selected with a blue radio button) and 'Phone call' (unselected). A red 'MUTED' indicator is present above a dropdown menu for 'Microphone (HD Webcam C510)'. Below this is a volume slider and another dropdown menu for 'Speakers (High Definition Aud...)'. The bottom panel, titled 'Questions', contains a text input field with the placeholder '[Enter a question for staff]', a 'Send' button, and a footer section with the text 'Multi sessions different registrants', 'Webinar ID: 980-960-603', and the 'GoToWebinar' logo.



Meeting Information

- Presentation is being recorded
 - Will be posted to ADEQ's YouTube page
 - Spanish translation on YouTube transcription
- Informal community meeting, not formal public hearing

Purpose

To provide information and updates about ADEQ's Preliminary Investigation (PI) Report for the 6th Street and Birch Street Site performed under the Water Quality Assurance Revolving Fund (WQARF) in the Cottonwood, Arizona area.



bit.ly/CottonwoodPIReport

Agenda

6:00-8:00 PM

1. **6:00-6:15** Opening & Introductions
2. **6:15-6:30** Overview of ADEQ Activities in Cottonwood
3. **6:30-7:00** Review PI report for the 6th Street and Birch Street Site
4. **7:00-8:00** Open House Q & A

Housekeeping Items



bit.ly/CottonwoodMeetingSignIn

- Sign in
- Meeting announcement
- Business cards
- Layout of open house
- Restrooms
- Emergency exits
- Water

Tips for a good meeting


- Share from your experience and perspective
- Please listen when others are speaking
- We want to allow space for all to participate
- Be generous
- We ask that all present be respectful and kind and we believe that this will lead to good outcomes
- Off-topic comments and questions will be “parked” and followed up on at a later time, if appropriate
- Please silence any electronic devices

- **Virtual:** Please avoid sending any questions via the chat feature, but rather wait for the final slide and route them to the appropriate staff via email. However, please let us know if you are unable to hear or see us



ADEQ Staff

- **Julie Riemenschneider** - Waste Programs Director
- **Tina Le Page** - Manager of Remedial Projects / Site Remediation
- **Hazel Cox, PhD** - Senior Hydrogeologist
- **Dan Sola, P.G.** - Principal Hydrogeologist
- **Lauren Hildebrand** - Community Liaison



Overview of ADEQ Activities in Cottonwood

Facility of Interest Web Page

Please visit ADEQ's Facility of Interest web page for the latest information and documents:

azdeq.gov/aqd/mri

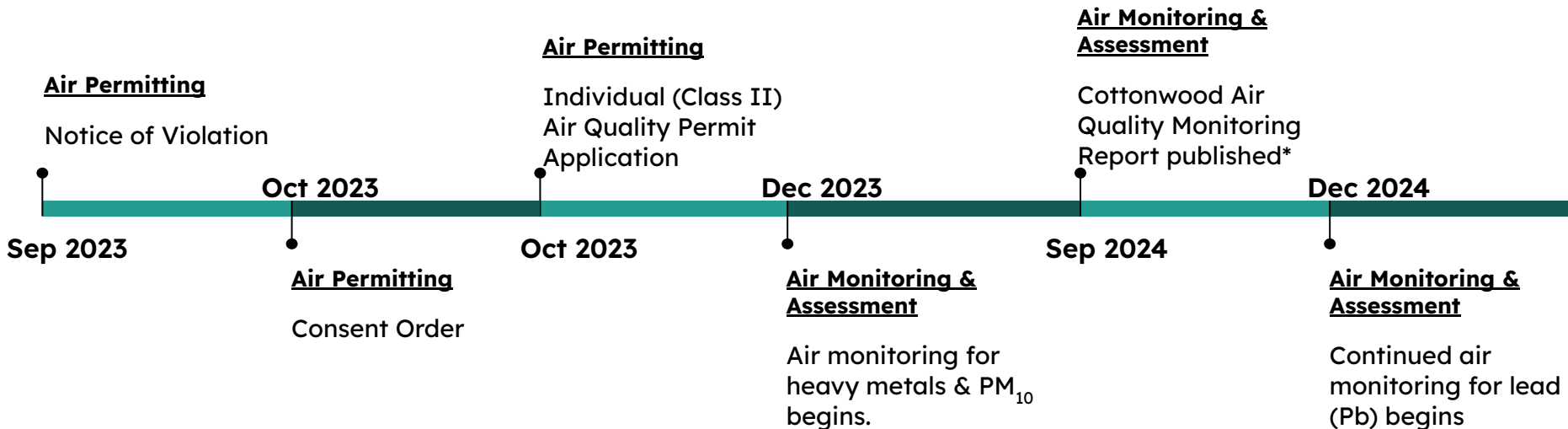
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Environmental Studies/Minerals
Research, Inc. | [Subscribe >](#)

Background - Air Quality Permitting & Monitoring



*Initial air monitoring data provided to ADHS

Air Quality Monitoring



Non-ADEQ led activities



- Arizona Department of Health Services
 - Public Health Assessment
- University of Arizona
 - Gardenroots: Cottonwood, the Heart of the Verde Valley, AZ



6th Street and Birch Street Preliminary Investigation Site

February 27, 2025

Hazel Cox, PhD. Senior Hydrogeologist
Daniel Sola, R.G. Principal Hydrogeologist

Opening Remarks and History



Goals for February 27, 2025 Community Meeting

- Bring public up-to-date with Preliminary Investigation (PI)
- Review ADEQ's regulatory authority
- Share the soil data results to date and discuss next phase of study
- Acknowledge questions received
- Emphasize that final decisions have not been made

What is WQARF and a PI?

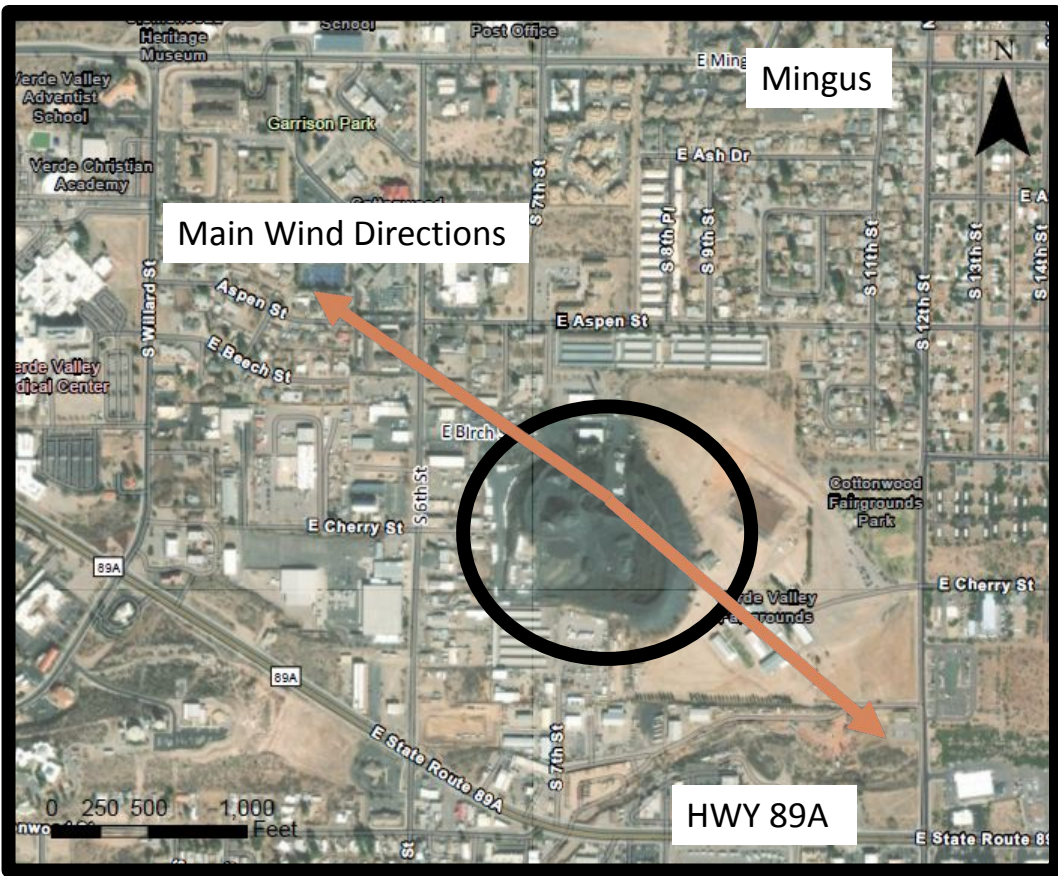
- WQARF = Water Quality Assurance Revolving Fund
 - Also called State Superfund program
- WQARF uses state funds to investigate and clean up soil and groundwater contamination in Arizona
- Also oversees privately funded efforts
- The PI is a screening-level investigation to confirm presence of a release

<http://www.azdeq.gov/programs/waste/WQARF>

WQARF Regulatory Authority

- Preliminary Investigation results are separate from Air Quality permit requirements
- WQARF has regulatory standards for soil, groundwater, and surface water
- AZ Department of Health Services (ADHS) has guidance to reduce exposure to dust

Site Location



6th St and Birch St - Preliminary Investigation (PI)

- Site referred to WQARF for a possible release to soil and groundwater late December 2023
- ADEQ gathered Site historical information, access acquired Jan-Feb 2024

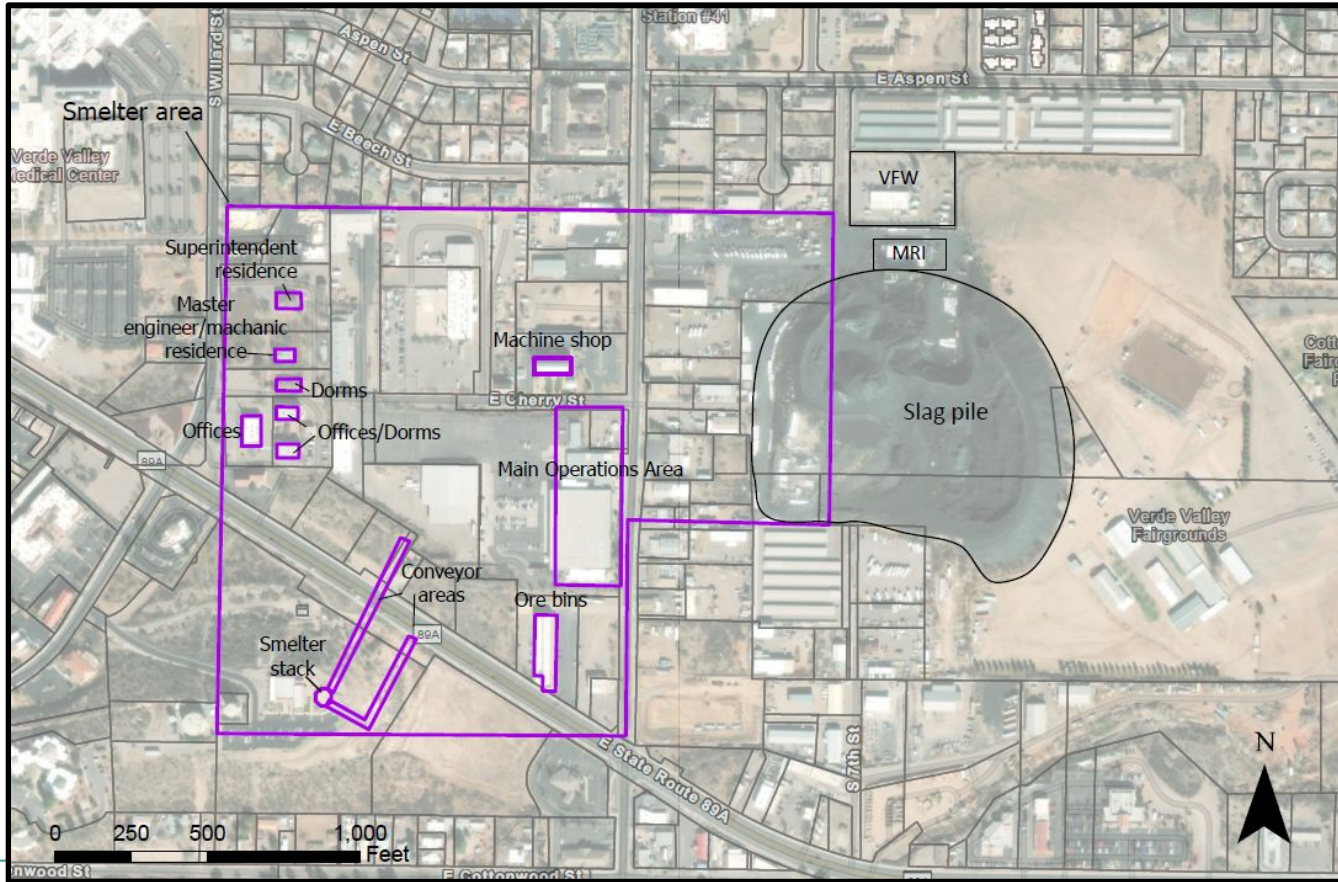


Former Clemenceau smelter



Minerals Research Inc (MRI)

6th St and Birch St PI – Historical Operations

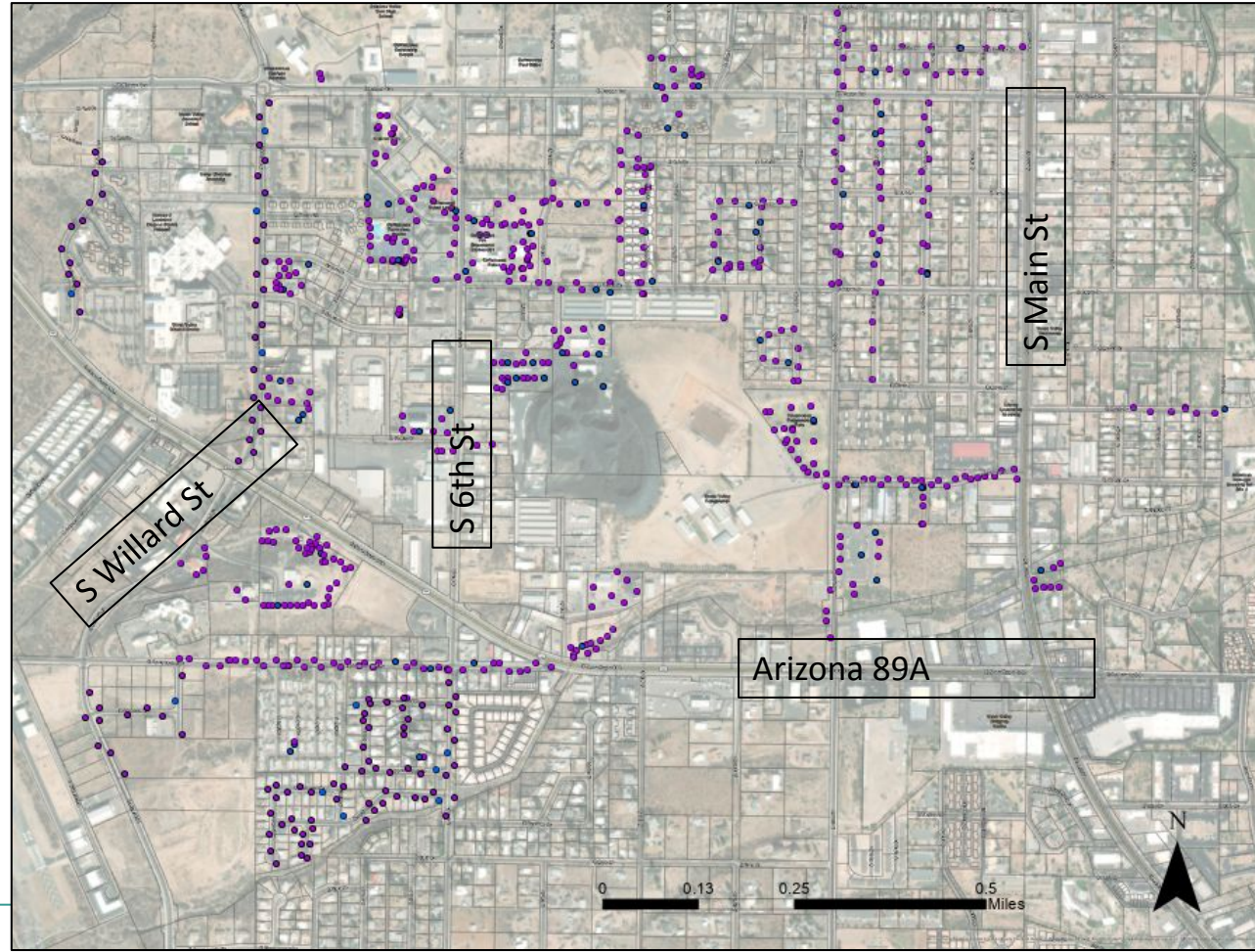


6th St and Birch St PI –Sample Methods and Use

- Two accepted methods
 - X-Ray Fluorescence (XRF)
 - EPA Method 6010D (Laboratory)
- XRF and laboratory analytical methods are fundamentally different:
- XRF instrument scans the surface of a sample and estimates the whole composition
- The laboratory “digests” the whole sample and yielding a complete composition
- Laboratory samples include extensive quality control and independent validation.

6th St and Birch St PI - Samples

- XRF instrument for screening large area
March – June 2024
 - Over 750 XRF samples collected
 - ~10% also sent to lab
- Statistical analysis to look for fingerprints –
Completed Dec 2024



6th St and Birch St PI –Sample Methods and Use

- XRF helps characterize large number of samples in **real time** for lab follow up. Accuracy varies by site and material
- ADEQ does not use XRF data for compliance or final cleanup determinations internally or by outside parties
- **State certified laboratory data** are used for substantial decisions including background determinations
- XRF is not appropriate for calculating quantitative background levels per the **Soil Rule R18-7-204**

6th St and Birch St PI – Typical XRF Instrument

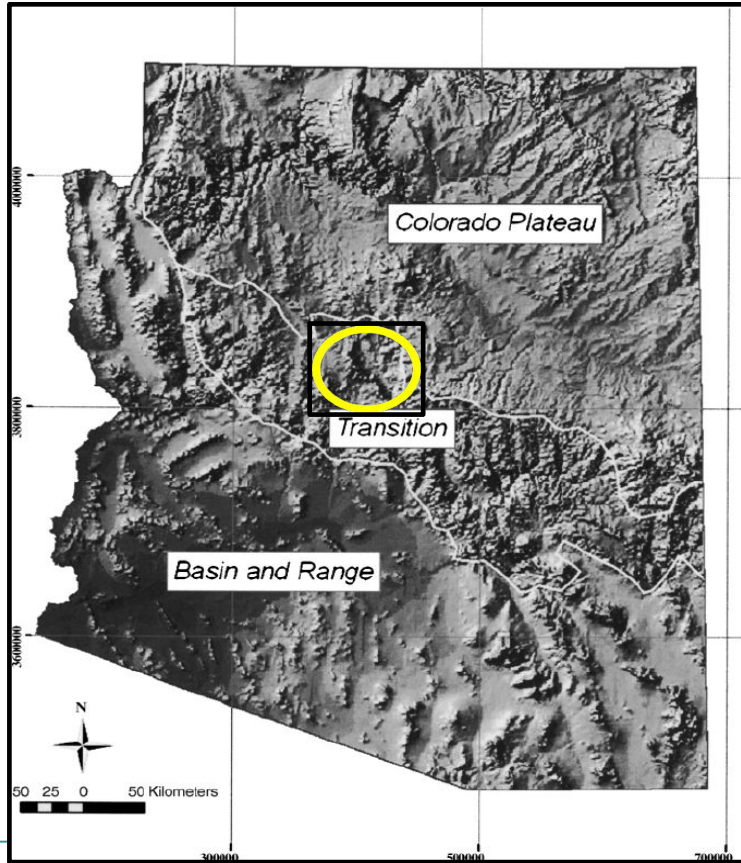
DELTA Handheld XRF Configuration



Background Arsenic in Arizona



Arsenic in Arizona, Major Geologic Provinces



Transition Zone is home to much of the historical copper mining (and other metals) in Central Arizona

Arsenic, copper, zinc and gold often occur together in these mining areas due to the type of minerals

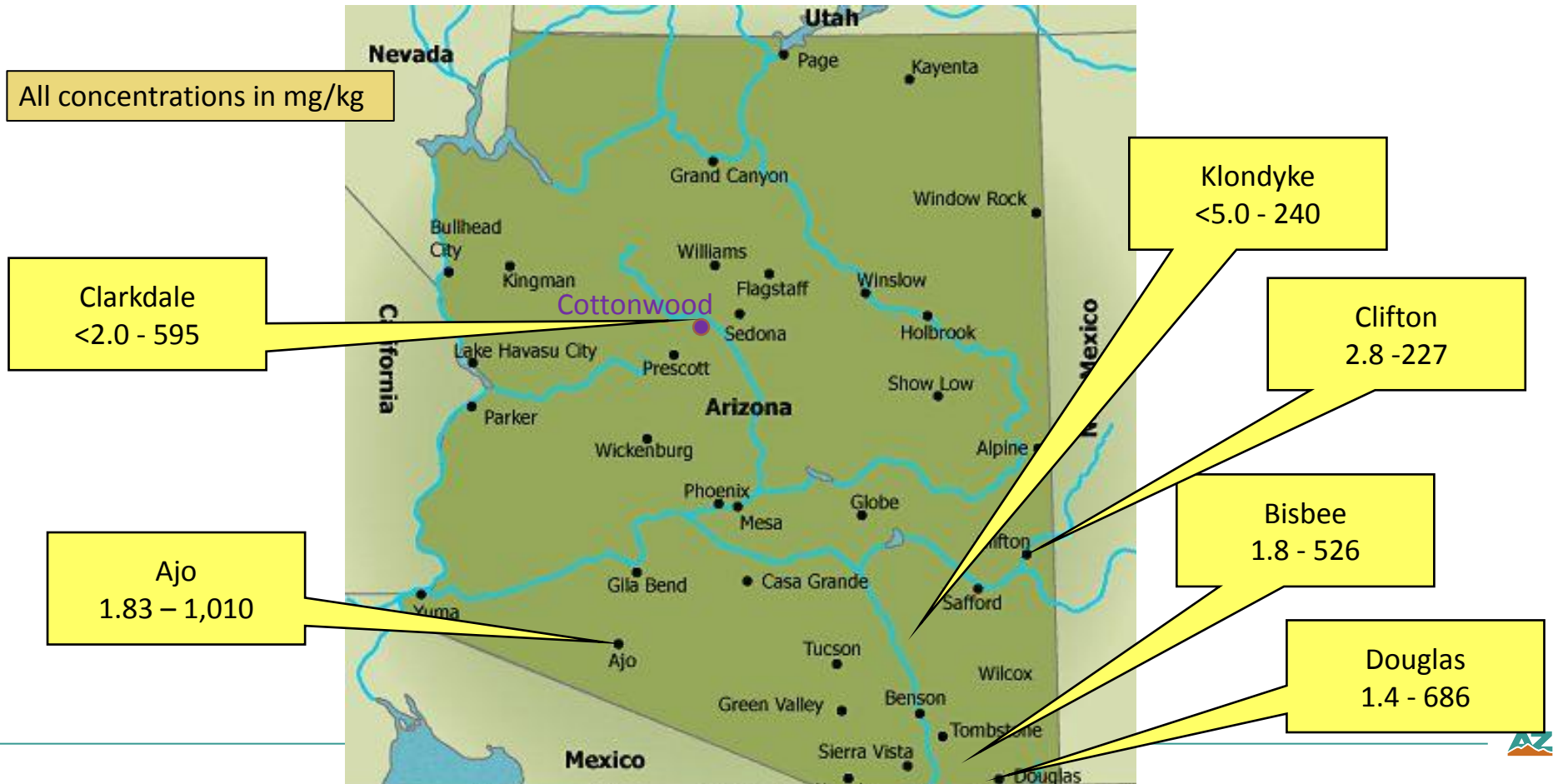
Often, towns were founded based on proximity to mineral resources

Arsenic Soil Remediation Levels Arizona History

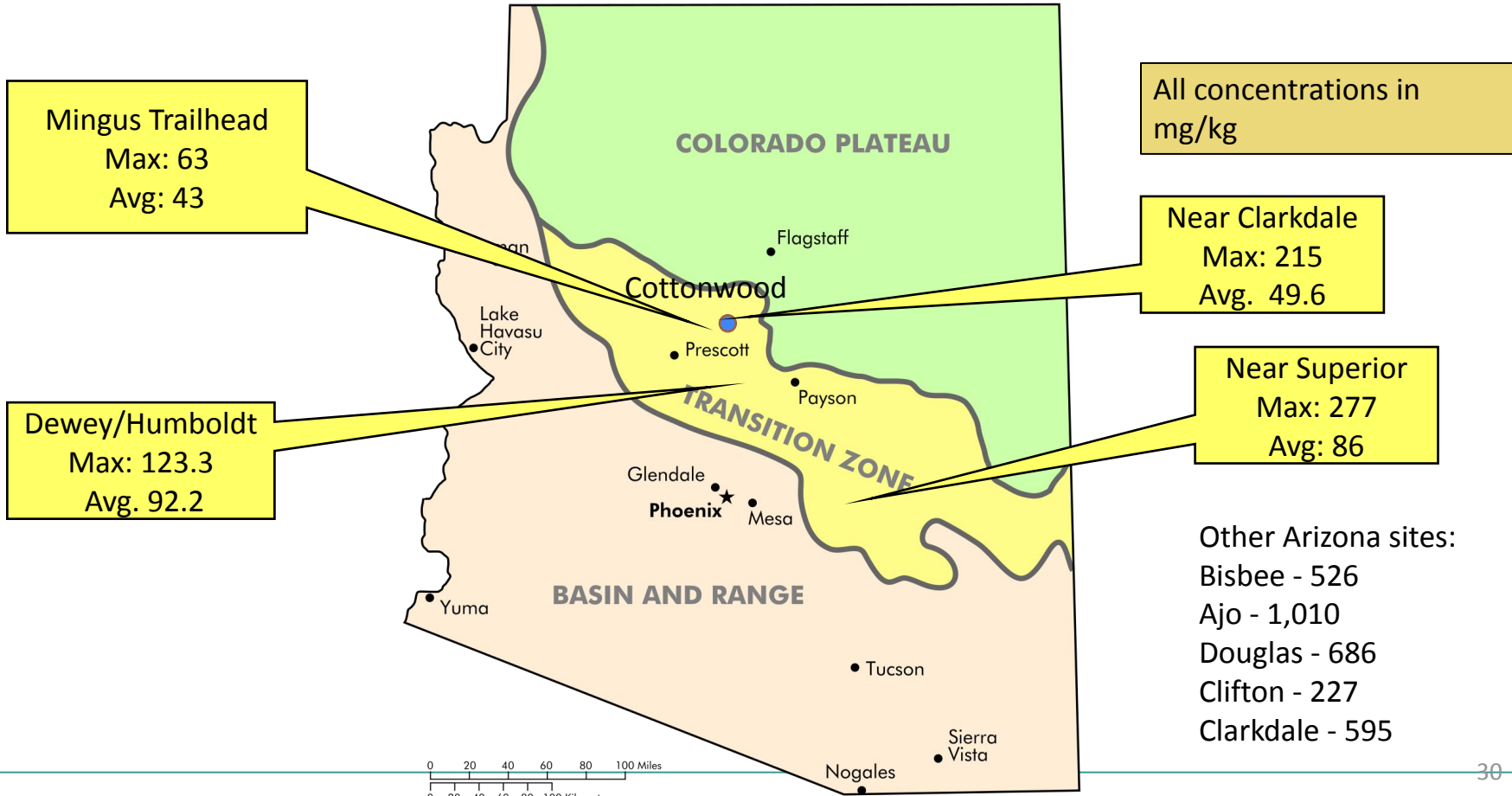
METAL	RANGE OF LEVELS IN NATURAL SOILS(a) (mg/kg)	1986 SUGGESTED SOIL CLEANUP LEVEL(b) (mg/kg)	DRAFT 1990 INGESTION HBGL(d) (mg/kg)	*WORST POSSIBLE CASE INGESTION HBGL(d) (PICA CONDITION) (mg/kg)
ALUMINUM	Not available	15	1,500	15
ANTIMONY	< 150 - 500	500	60	0.6
ARSENIC	<0.2 - 97	100	1,000	10

- (a) Source: Conner and Shacklette, 1975. This publication was also used by California regulators to develop cleanup standards
- (b) Source: ADHS, 1986
- (c) HBGL = Health-based guidance level, Source: ADHS, 1990
- (d) Soil ingestion health based guidance level for the "worst possible case" involving an individual prone to eating soil, such as a child with Pica.

Arsenic Concentrations - Mining Areas



Background Arsenic Concentrations - Transition Zone



Background Screening Level (XRF based)

- Background samples cross-wind and uphill of the site indicate a Background Screening Level of 57 mg/kg based on XRF results
- This is a screening tool only for sorting and understanding the metals and arsenic distribution
- The XRF Background Screening Level is appropriate to identify areas of concern for lab sampling
- While not final, XRF data show there is natural arsenic present
- More reliable lab samples will be used to determine a statistically valid background concentration range
- XRF data not appropriate for background determination per R18-7-204 (Soil Rule)

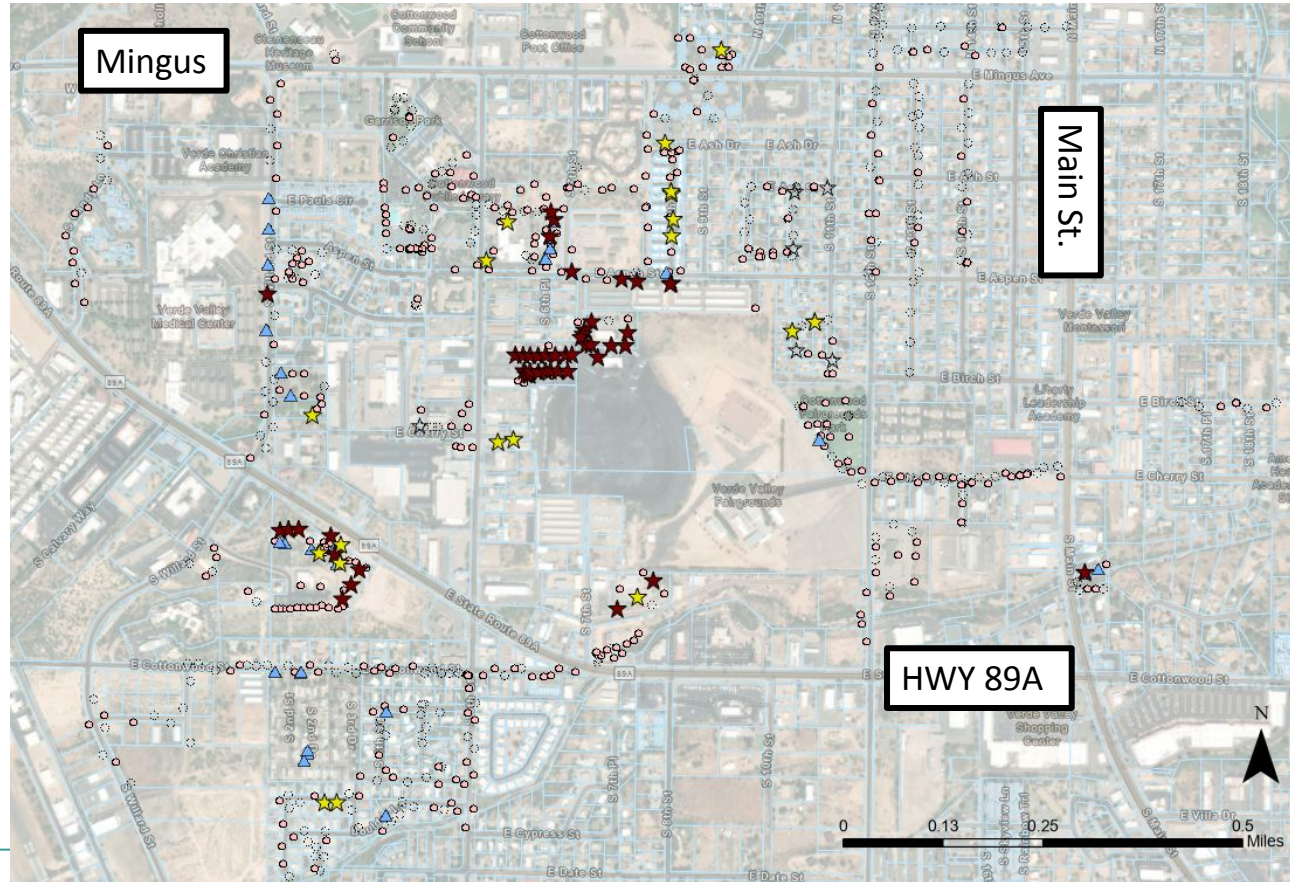
Preliminary Investigation Findings



6th St and Birch St PI - Results

- Arsenic most extensive metal detected
 - Copper, cadmium, manganese, and zinc also detected over soil standards
 - One sample on former smelter stack hillside also had lead, selenium and mercury
- The subset of laboratory samples found complex correlations between lab and XRF highlighting the need for more laboratory sampling
- Typically the XRF over-predicted the laboratory results indicating is useful for screening
- Fingerprinting showed samples fell into three “signals”: background, slag, and other
- Groundwater is not impacted by the Site

6th St and Birch St PI - Results



Legend

- ★ Slag signal, over arsenic screening level
- ☆ Slag signal, under arsenic screening level
- ☆ Slag signal, under arsenic SRLs
- ▲ Other signal, over arsenic screening level
- No signal, under arsenic screening level
- No signal, under arsenic SRLs

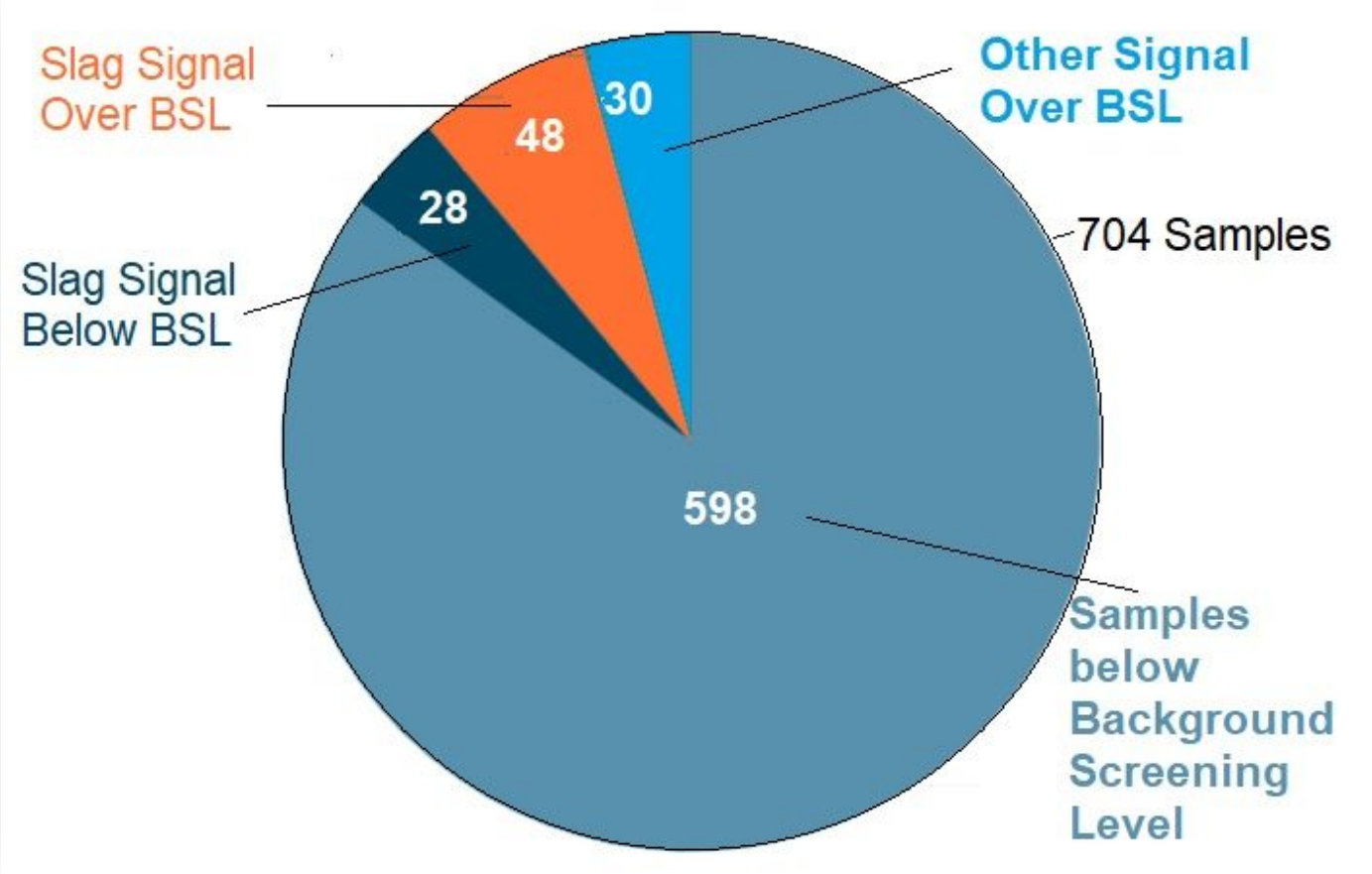
SRL = Soil Remediation Level, or soil standard

Note background samples collected south west of site

Summary of PI Findings

- Slag “signal” identified in 76 XRF Samples - three main areas of distinct slag
- XRF indicates background screening level for arsenic of **approximately 57 mg/kg** - additional lab-based sampling needed
- 48 Slag Signal samples exhibited arsenic above the background screening level
- 30 samples without a slag signal had arsenic above the background screening level

Summary of PI Sample Results

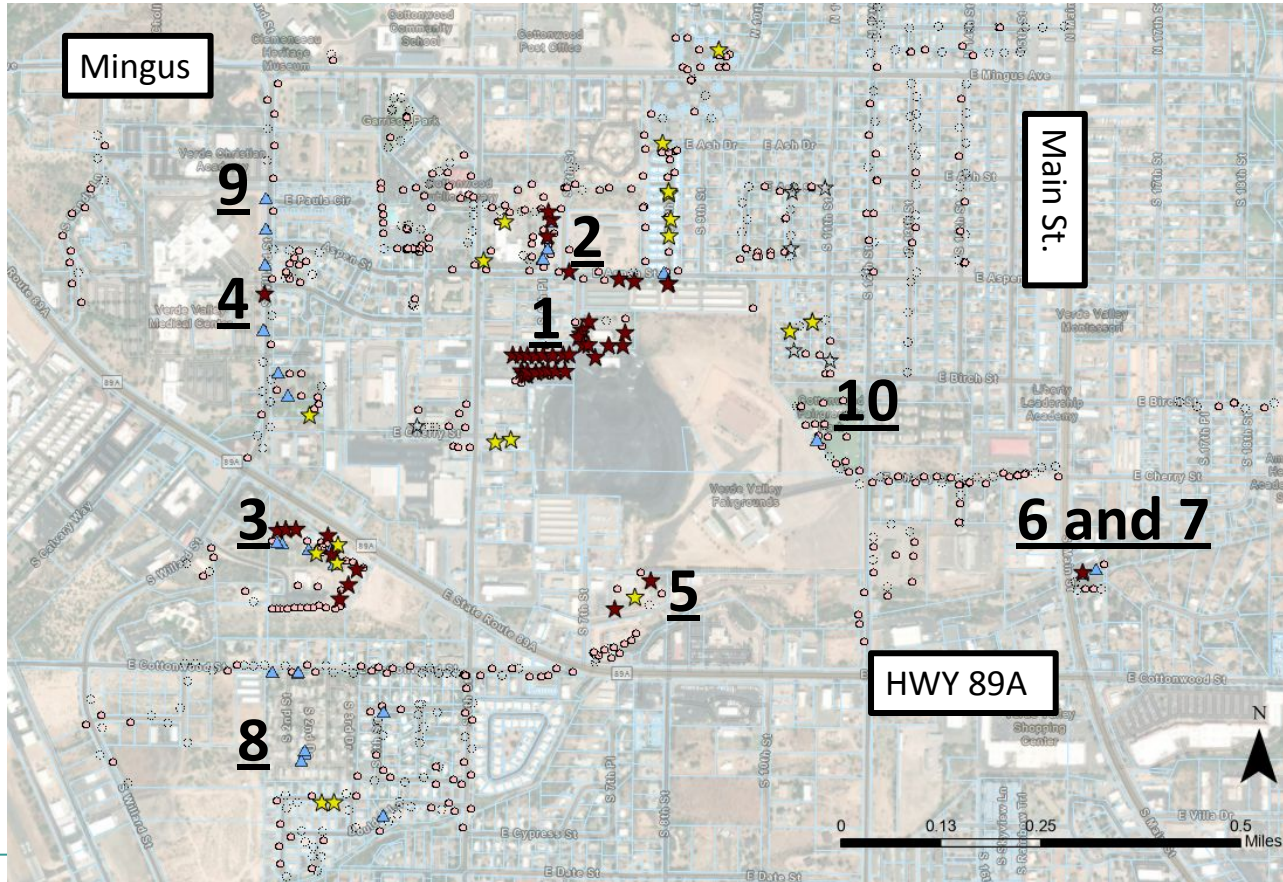


6th St and Birch St PI - Path forward

Scope of Next Phase:

- Sampling with laboratory analyses in 10 areas outlined by XRF screening
 - Aluminum will be included
- Sampling with laboratory analyses for background arsenic value
- PI Report Addendum – including suggested actions as data indicates

6th St and Birch St PI – Path Forward



Legend

- ★ Slag signal, over arsenic screening level
- ★ Slag signal, under arsenic screening level
- ☆ Slag signal, under arsenic SRLs
- ▲ Other signal, over arsenic screening level
- No signal, under arsenic screening level
- No signal, under arsenic SRLs

10 areas focus of next phase

Note background samples south west of site



- Questions
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- Media Inquiries
 - pio@azdeq.gov

- Questions
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Meeting will conclude at 8 PM. Email with presentation and meeting recording will be sent to subscribers next week.