

Caselton Mine Area Project Update May 2016



Agenda

- Introductions
- Caselton Mine Area Environmental Site Investigation
 - What did we do?
 - What were the results?
 - How do the results affect the Residents, Town of Pioche and Lincoln County
- Path Forward
- Action Items



Introductions

- **NDEP**
 - Jeryl Gardner, AML Program Manager
 - Ben Wilkinson, Project Manager
- **Multistate Trust**
 - Marc Weinreich, Managing Principal
 - Tasha Lewis, Project Manager
 - Dean Brockbank, Sr. Strategist
 - Bob Rollins, Field Manager
 - Chuck Zimmerman, Brown and Caldwell
Project Manager



What did we do?
What were the results?



Caselton Mine Area Site Investigation (2015)

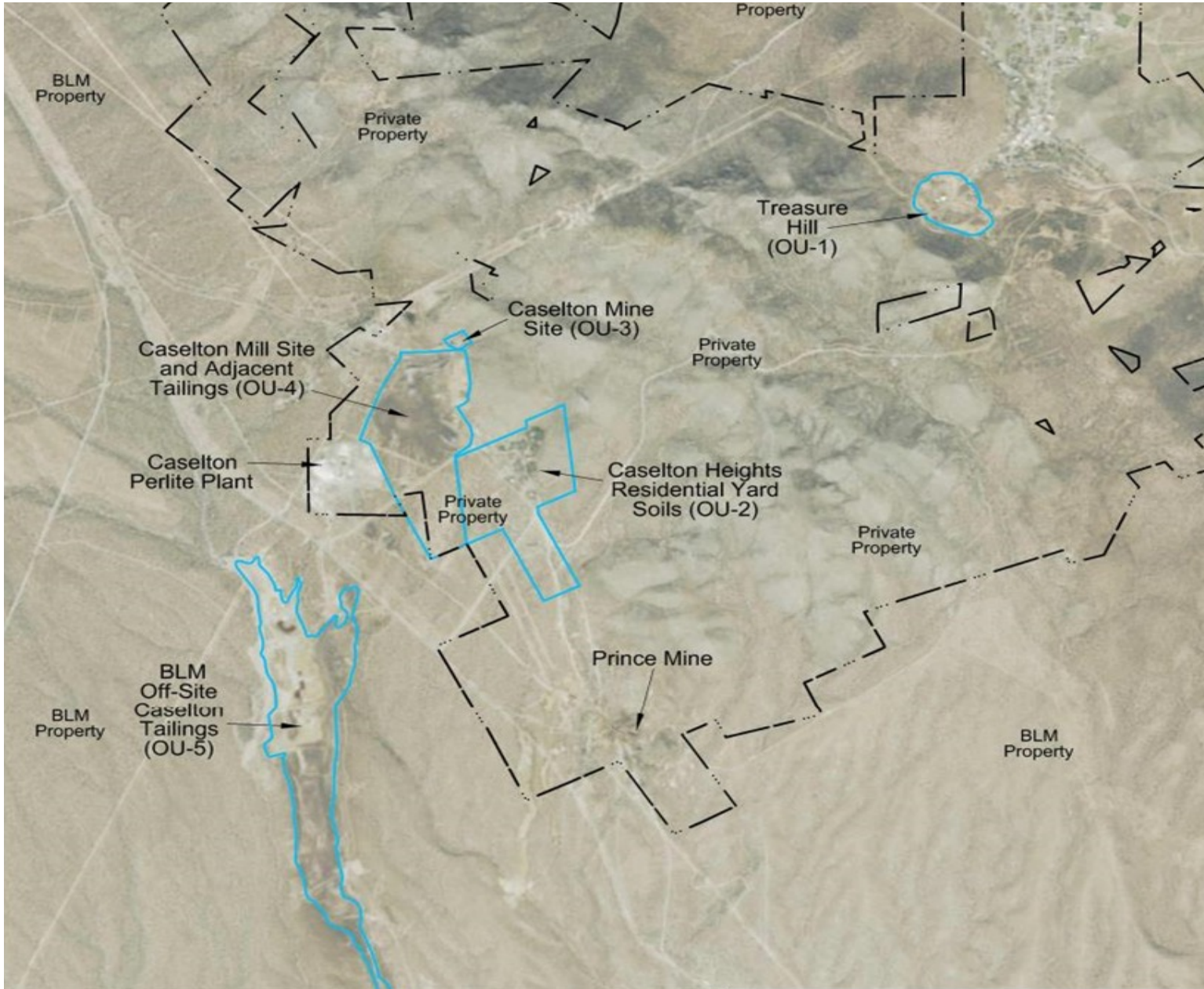
- **Project site visit**
- **Identification of five operable units (OUs)**
 - **OU-1** **Treasure Hill**
 - **OU-2** **Caselton Heights Residential Yards**
 - **OU-3** **Caselton Mine**
 - **OU-4** **Caselton Mill and Tailings**
 - **OU-5** **BLM Tailings**
- **Primary focus in 2015 was OU1 and OU2**
- **Developed Conceptual Site Models (CSM) for each OU**



2015 Activities & Accomplishments

- **Prepared a Remedial Investigation (RI) Work Plan for OU-1 (Treasure Hill) and OU-2 (Caselton Heights Residential Yards)**
- **Performed RI field activities**
- **Prepared the RI Report, including screening level human health risk assessments (HHRAs) and CSM updates for OU-1 and OU-2**
- **Developed a 1-foot topographic contour map for OU-1 to support remedial design and remedial action (RD/RA) activities**





Explanation

- Operable Unit Boundary
- - - BLM/Private Boundary

BLM Tailings OU Boundary Approximated from URS (2014; Figure 3)
 Basemap Source: ESRI World Imagery

OU-1 RI Work Plan

- **Develop 1-foot contour topo map**
- **Collect 30 waste rock samples for chemical analysis of metal content**
- **Subject 10 samples to meteoric water mobility test (MWMP) for leachate metal content**
- **Based on analytical data, perform screening level HHRA**



OU-1 Sample Locations



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OU-1 Sampling Photos



OU-1 RI Results

- Updated CSM
- Metal (arsenic, zinc, manganese, lead) values in mineralized waste rock were highly variable and some samples significantly exceeded background
- Only arsenic and lead exceed EPA recreational screening levels

Take Away Message

Conclusion: No health risk (dermal contact or inhalation) to tourists, recreational users or construction workers

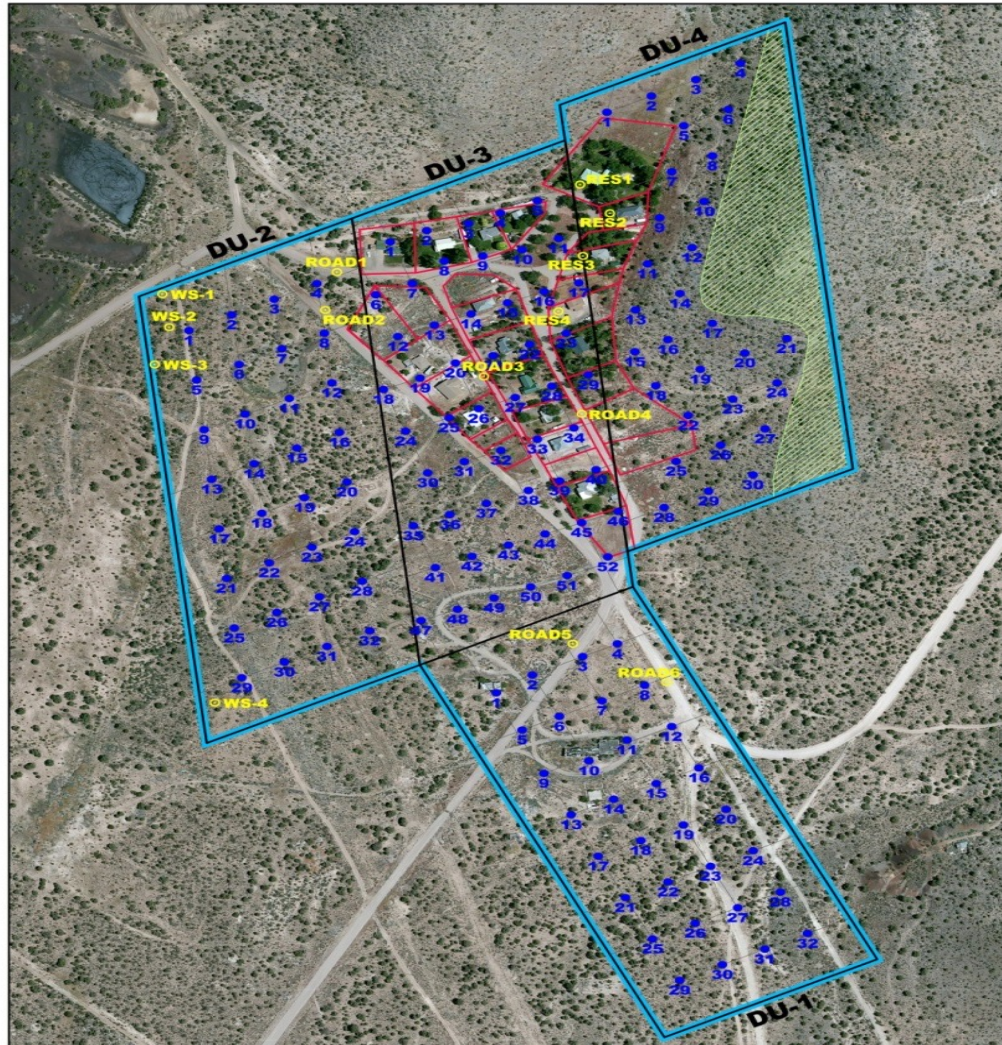


OU-2 RI Work Plan

- **Based on four Decision Units (DUs), develop a sampling plan for residential and unoccupied parcels**
- **Multi-Increment Samples (MIS): 32 from DU-1 and -2; 52 from DU-3; and 30 from DU-4 (see map)**
- **Grab samples (14) from yards, roadways and sediments to supplement MIS**
- **All MIS and grab samples analyzed for metals**
- **Based on analytical data, perform screening level HHRA**



OU-2 Sample Locations



OU-2 Sampling Photos



OU-2 RI Results

- Updated CSM
- Metal (arsenic, zinc, manganese, lead) values in yards and undeveloped parcels close to regional and local (DU-4) background values
- Only arsenic and manganese exceed EPA residential screening levels:
 - Development of OU-1 parcel and buried utility maps Arsenic levels below clean-up levels at other EPA/NDEP sites (residential yards) in Nevada (e.g., McDermitt, Eureka)
 - Manganese levels below dietary dose (Centrum multi-vitamin)

Take Away Message

Conclusions: Slightly higher concentrations in yards likely result from yard care (water with metals and/or fertilizer). No health risk (dermal contact, ingestion or inhalation) to residents



How do the results affect the Residents, Town of Pioche and Lincoln County?



How do the results affect the Residents, Town of Pioche and Lincoln County?

- OU-2: Caselton Heights and transfer of properties from the Multistate Trust to Lincoln County
- OU-1: Stormwater runoff and flow of tailings into the street



Path Forward



Path Forward: 2016 Activities

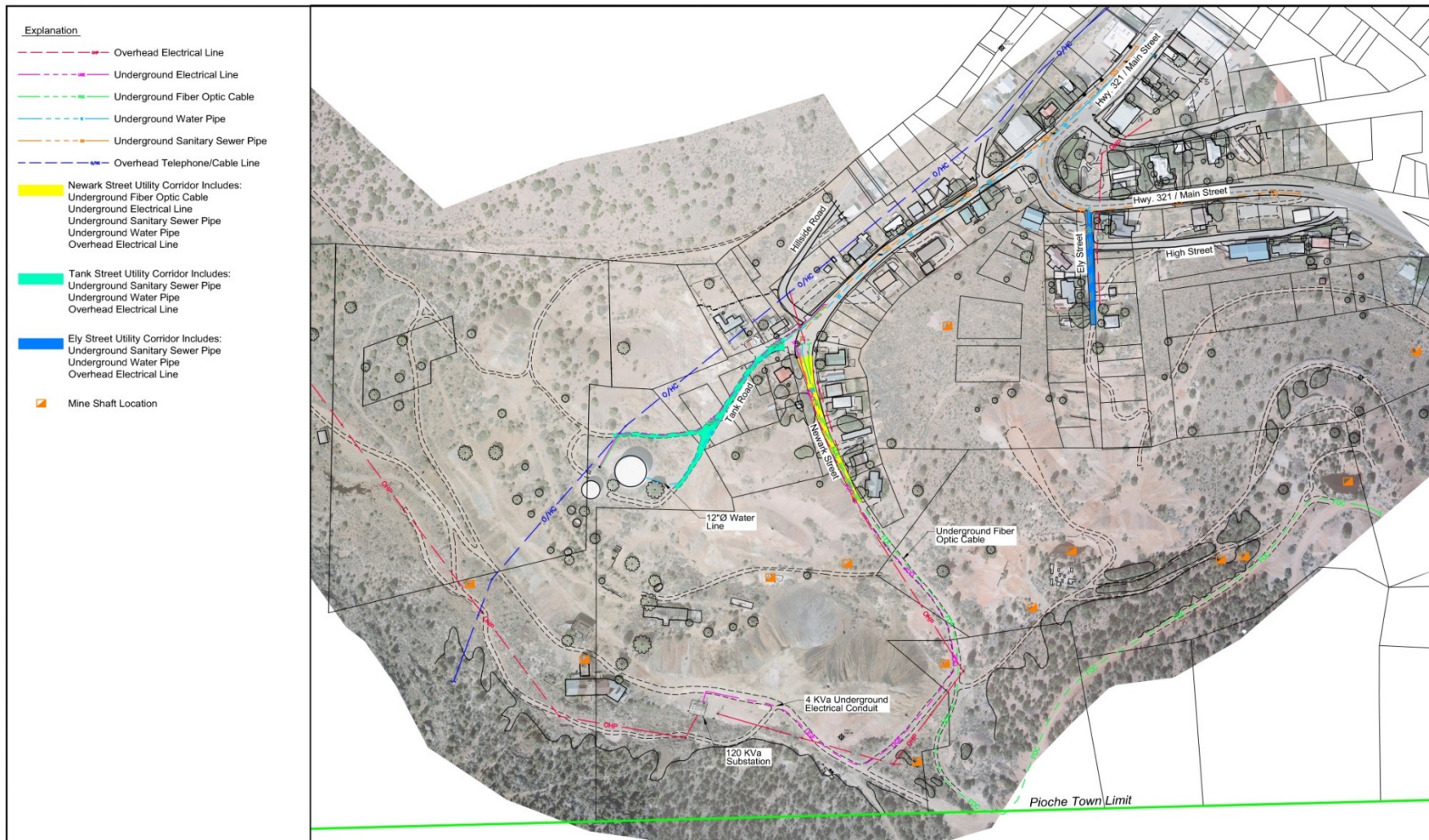
- **OU-2:**
 - Caselton Heights Property Transfer
- **OU-1:**
 - Development of OU-1 parcel and buried utility maps
 - Preparation of OU-1 access agreements
 - Development of OU-1 stormwater runoff model and simulation of a range of precipitation events
 - OU-1 Feasibility Study (FS) and Development of Stormwater retention basin conceptual designs



OU-1 Parcel Map



OU-1 Preliminary Utility Map



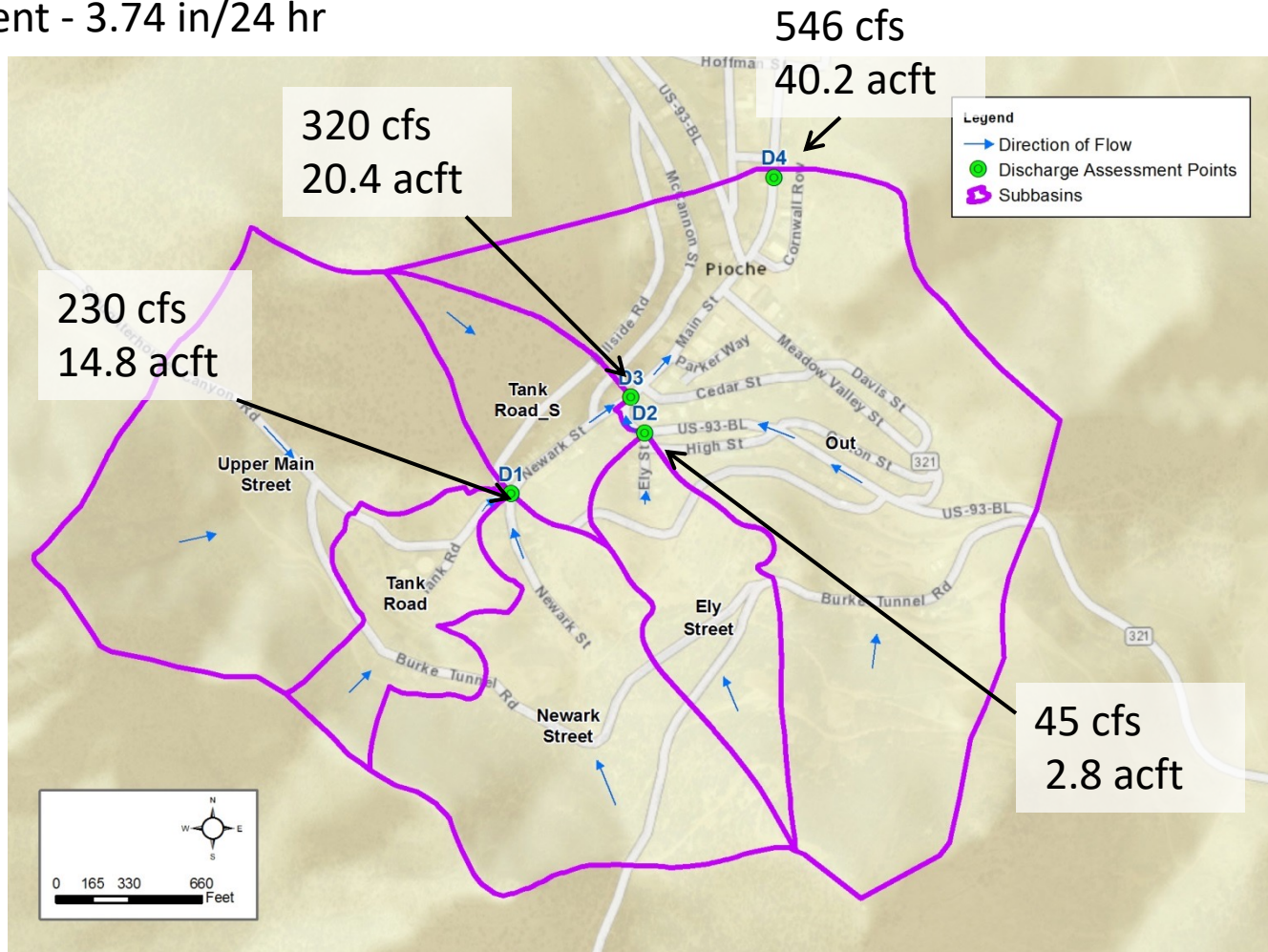
OU-1 Stormwater Modeling

- **First step in conceptual design development**
- **Stormwater CIP identified conceptual design elements- detention basins and BMPs**
- **Estimate peak discharges and runoff volumes**
- **Estimate safety factors to account for sediment bulking for detention basins**



Peak Discharges and Runoff

100-yr Event - 3.74 in/24 hr



OU-1 FS



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FS Scope of Work

- **Conceptual basin designs and sediment transport analyses based on runoff model results**
- **Sub-surface material characterization and laboratory (geotechnical) analyses – Test Pits and Soil Borings**
- **FS Report and draft remedial design (RD)**
- **Remedy Selection Workshop w/Town of Pioche, NDEP, and Multistate Trust**
- **Final design and remedy implementation plan**

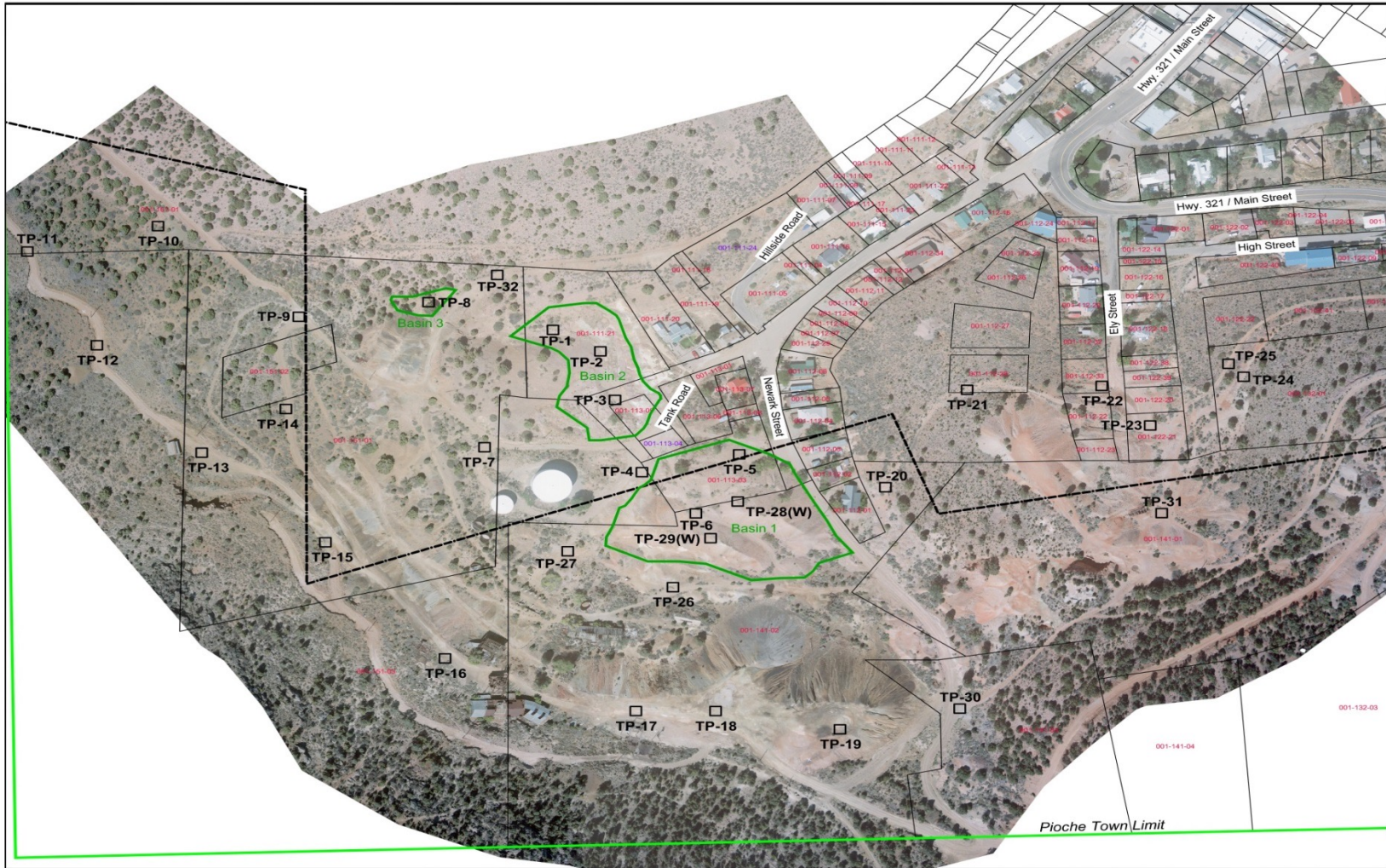


Conceptual Design Elements

- **Best management practices (BMPs) will likely be similar for all designs**
- **Stormwater retention basins will be optimized for available sites, underground utilities and existing Pioche stormwater infrastructure (facilities need to be verified)**
- **Waste rock (below a select elevation) removal and disposal to limit sediment transport**



Proposed Test Pit Locations



Proposed Boring Locations



OU-4 RI Work Plan and Investigation

- Investigate the tailings located within and downgradient of OU-4
- Perform a human health risk screening
- Perform an assessment of the physical hazards that may need to be mitigated if the area is to be used for visitor/recreational purposes
- Perform an aerial survey of OU-3, OU-4 and OU-5 (tailings on BLM property), which will also include the Prince Mine and associated waste and tailings materials
- Produce a 1-foot contour topographic map of OU-3 and OU-4. OU-5 pending based on further discussion with BLM.

