

**Former Tronox/Kerr-McGee  
Caselton Mine Area, Pioche, NV**

**Community Meeting  
August 31, 2022  
6:00-7:30 PM**

**Nevada Division of Environmental Protection  
Greenfield Environmental Multistate Trust LLC,  
Trustee of the Multistate Environmental Response Trust**



**Greenfield Environmental Multistate Trust LLC  
Trustee of the Multistate Environmental Response Trust**



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# Meeting Agenda

- ✓ Introductions and Multistate Trust Overview
- ✓ Overview of Investigations, Results, and Proposed Additional Investigations
- ✓ Funding Considerations and Cleanup Options
- ✓ Potential Future Uses and Discussion
- ✓ Opportunity for Community Input



# Introductions and Multistate Trust Overview

Paul Eckert, NDEP  
Tasha Lewis, Multistate Trust



Greenfield Environmental Multistate Trust LLC  
Trustee of the Multistate Environmental Response Trust



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# Introductions

- ✓ Multistate Trust
- ✓ Nevada Division of Environmental Protection (NDEP)
- ✓ Bureau of Land Management (BLM)
- ✓ Lincoln County



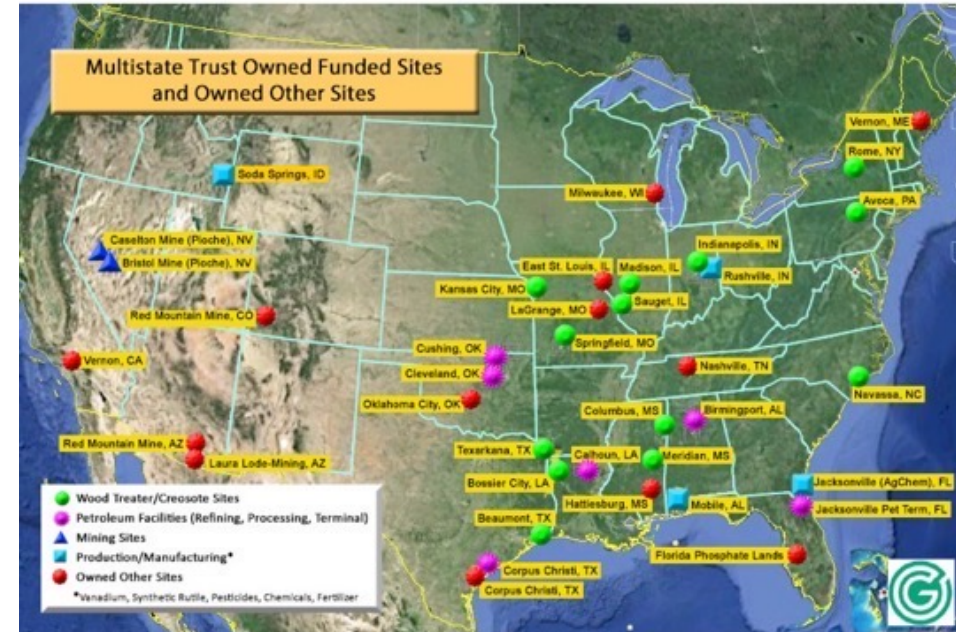
# Introduction to the Multistate Trust

## Multistate Trust is a Private Entity with a Public Purpose

- ✓ Protect human health and environment
- ✓ Proactively engage stakeholders on plans
- ✓ Contribute to community by striving for community-supported site reuses (jobs, taxes and community assets) and local contracting, where possible

## Multistate Trust Responsibilities

- ✓ Take title to many former Tronox/Kerr-McGee sites
- ✓ Hold/manage funds earmarked for cleanup of each site
- ✓ Cost effectively and efficiently clean up sites pursuant to Lead Agency-approved budgets and cleanup plans, and in compliance with all laws and regulations
- ✓ Fulfill fiduciary duties to Multistate Trust Beneficiaries – United States and States
- ✓ Subject to Beneficiary approval, transfer/sell sites



# NDEP is the Lead Agency for the Site

- ✓ Responsibilities include:
  - Approving and overseeing Environmental Actions at the Site, including investigations and cleanup plans
  - Approving Multistate Trust-proposed annual Environmental Cost Account (ECA) Budgets
  - Approving environmental contractors recommended by the Multistate Trust
  - Approving Multistate Trust-proposed property sales, transfers, and dispositions (e.g., Caselton Heights—see later slide)



# Overview of Investigations, Results, and Proposed Additional Investigations

**Paul Eckert, NDEP**

**Tasha Lewis, Multistate Trust**



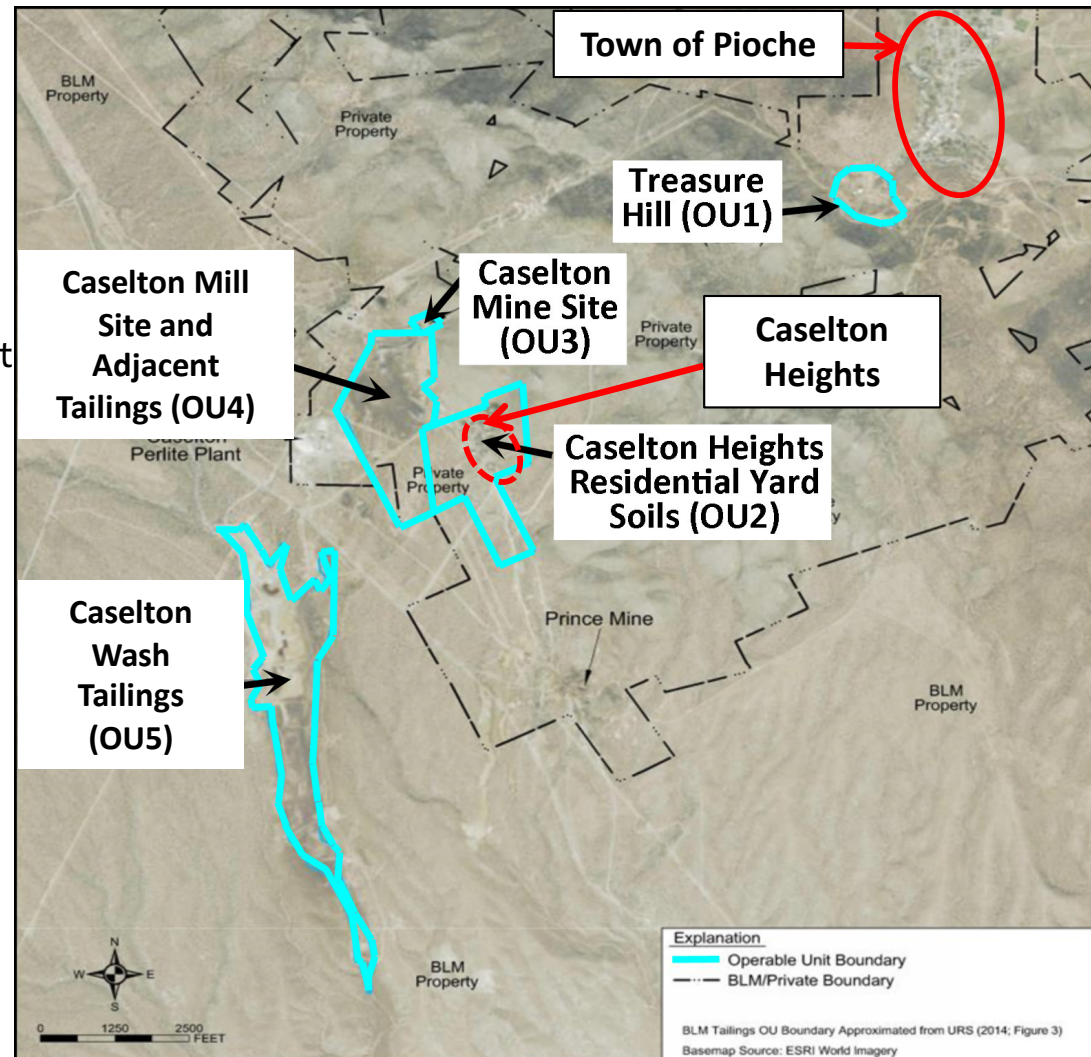
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# Site Overview

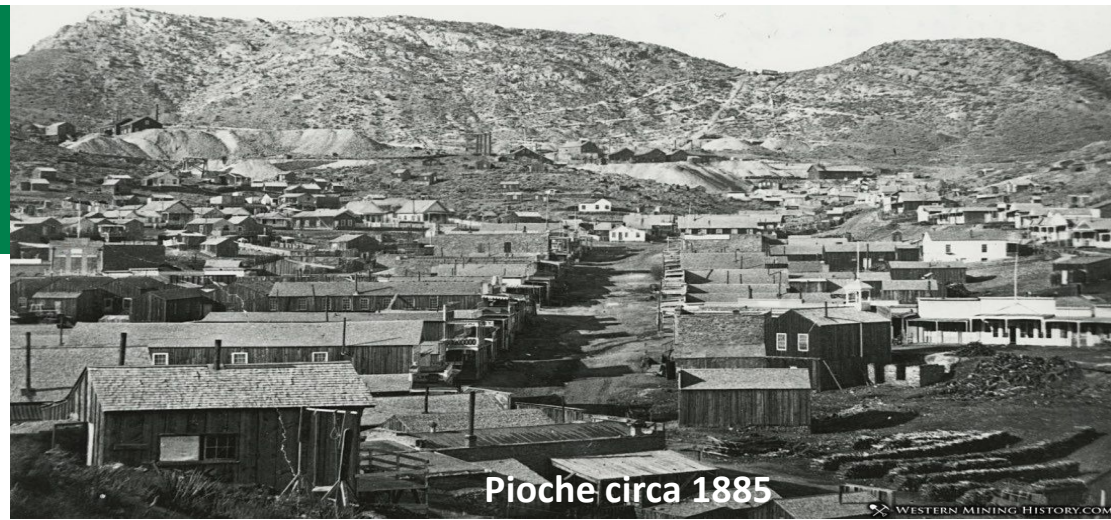
- ✓ In 2011, ±3,200 acres in Pioche Mining District were transferred to the Multistate Trust as part of the court-approved Tronox bankruptcy settlement
- ✓ In 2015 and after Anadarko litigation settlement funds were received, NDEP and the Multistate Trust began investigation activities in Pioche and Caselton Heights
- ✓ 5 operable units (OUs) based on mining activities and potential receptors (e.g., residents, trespassers, recreators, industrial workers, ecological) were established
- ✓ Caselton Mine Site (OU3) is not part of the current investigations. The Multistate Trust secures access to the mine shaft.





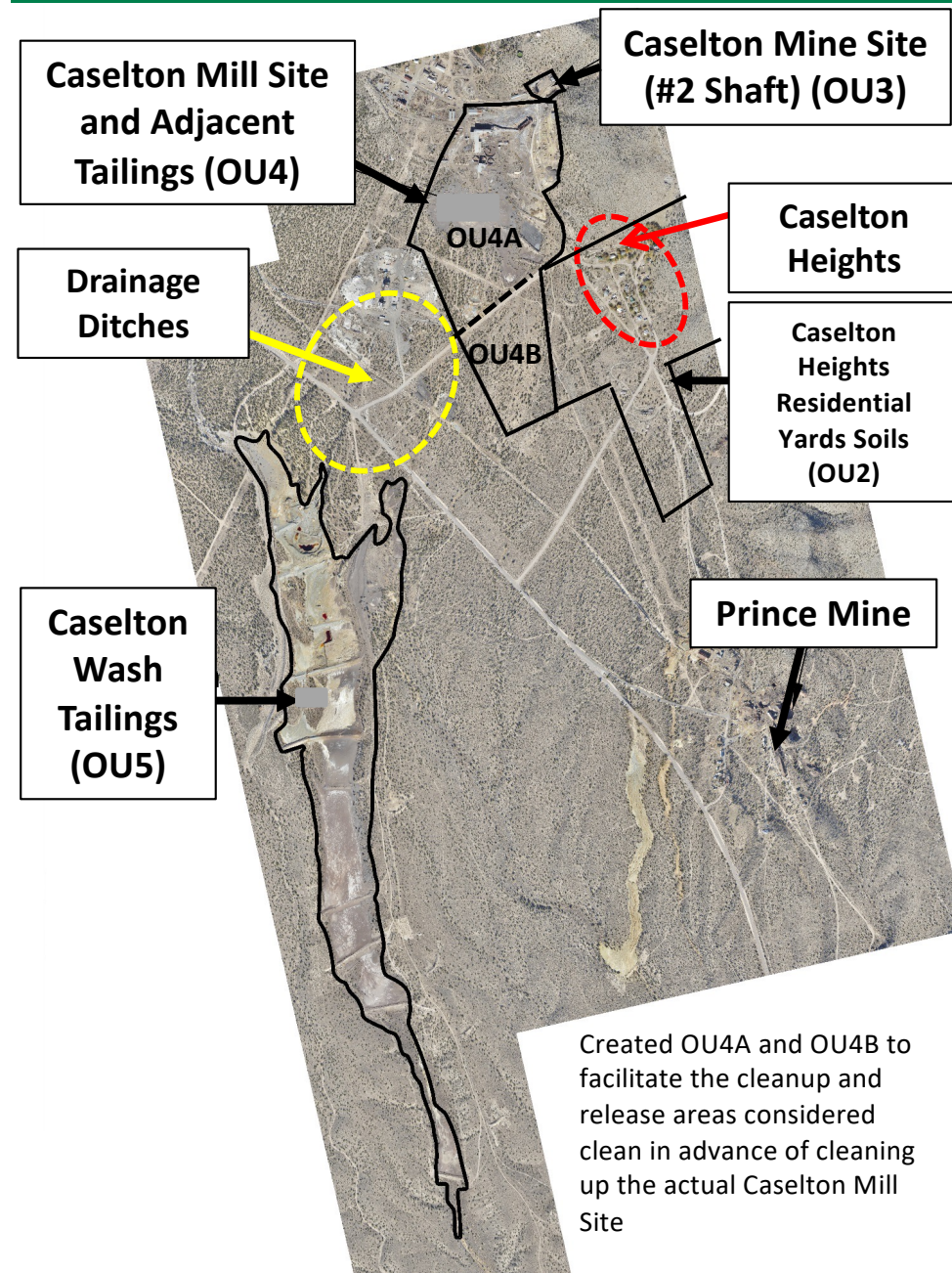
# Site History

- ✓ The Caselton area has a long history of mining operations for the production of metals, including silver, gold, lead, zinc, and copper
- ✓ Ore was discovered in 1863 and by 1873, Pioche was the largest silver producer west of the Rocky Mountains
- ✓ Combined Metals Reduction (CMR) owned and operated the Caselton Mine Area ( $\pm 3,200$  acres) from at least 1924 to 1976
- ✓ In 1941 CMR built the Caselton Mill to process sulfide and manganese ore



- ✓ Historically tailings from ore processing were discharged from the Caselton Mill through drainage ditches to the Caselton Wash
- ✓ Housing at Caselton Heights was formerly “Company Housing”
- ✓ 1976 CMR filed for bankruptcy and Kerr-McGee purchased the patented and unpatented mining claims
- ✓ 1993 the Kerr-McGee Corp. (Kerr-McGee) unpatented mining claims were allowed to lapse, and ownership of those claims reverted back to BLM
- ✓ Kerr-McGee did not conduct milling operations or active mining; only exploration activities
- ✓ In mid-2000s, Kerr-McGee sold its valuable oil and gas assets to Anadarko Petroleum Company and placed its environmental liabilities into a company called Tronox Incorporated
- ✓ In 2009, unable to pay for its environmental liabilities, Tronox filed for bankruptcy

# Site History

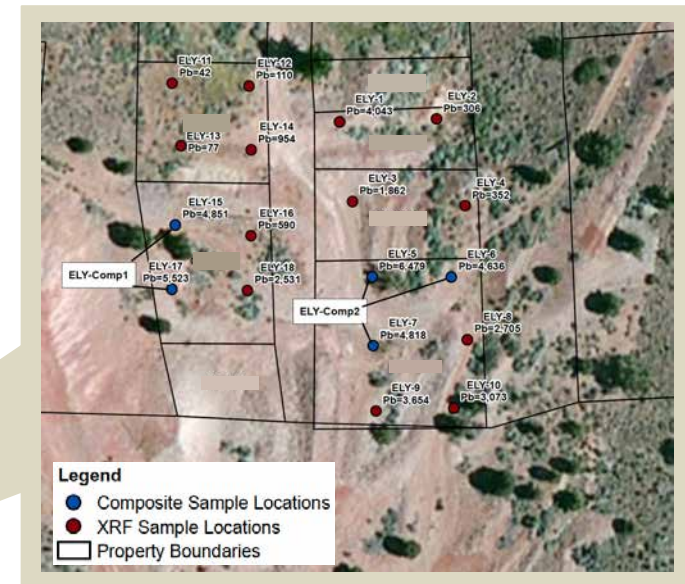
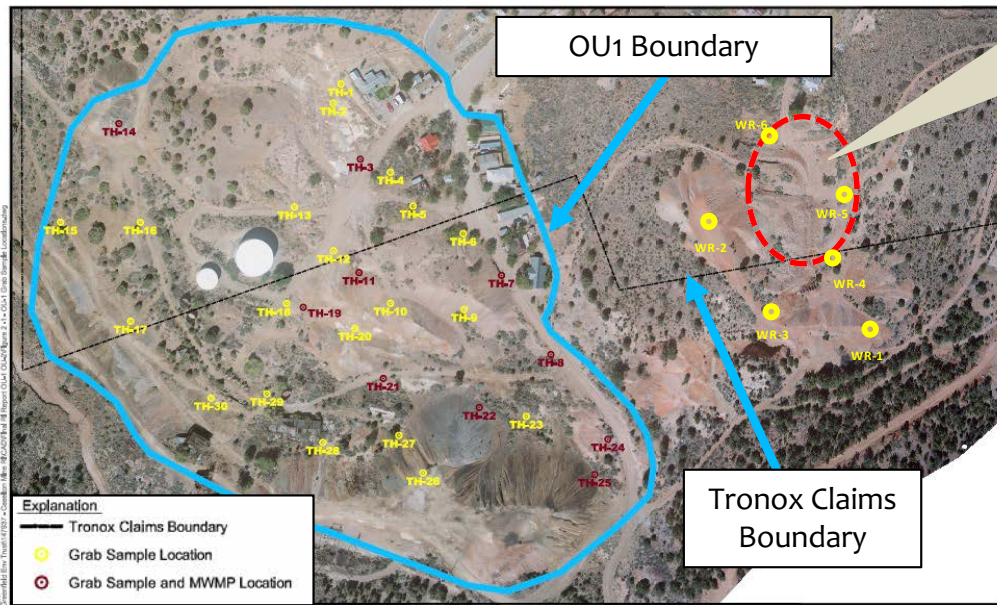


# Treasure Hill (OU1) Stormwater and Sediment Transport Issues (Treasure Hill into the Town of Pioche)



# Treasure Hill (OU1) Investigations

- ✓ Background Soil Samples
  - Collected 15 soil samples
  - Lead = 14 mg/kg to 392 mg/kg
  - Arsenic = <2.43 mg/kg to 7.3 mg/kg
- ✓ Waste Rock Piles
  - Collected 56 waste rock samples
  - Lead = 240 mg/kg to 57,000 mg/kg
  - Arsenic = 25 mg/kg to 530 mg/kg



- ✓ Waste rock sample results are above risk-based cleanup levels for the trespasser and recreators for this area
- ✓ Thus, there is a potential risk of unacceptable exposure to contaminants above risk-based levels by trespassers and recreators if accessing the area



# Treasure Hill (OU1) Investigations

- ✓ Collected 45 roadway sediment samples along Newark Street and Tank Road to evaluate the potential risk to the roadway worker of exposure to lead and arsenic contaminated sediment when cleaning the roadways after flooding events
  - Lead = 38 mg/kg to 6,700 mg/kg
  - Arsenic = 10 mg/kg to 240 mg/kg
- ✓ The Multistate Trust's third-party contractor evaluated the risk to the roadway worker and determined that the potential risk of unacceptable exposure to contaminants by a roadway worker was low because of the frequency and duration of roadway sediment removal was minimal

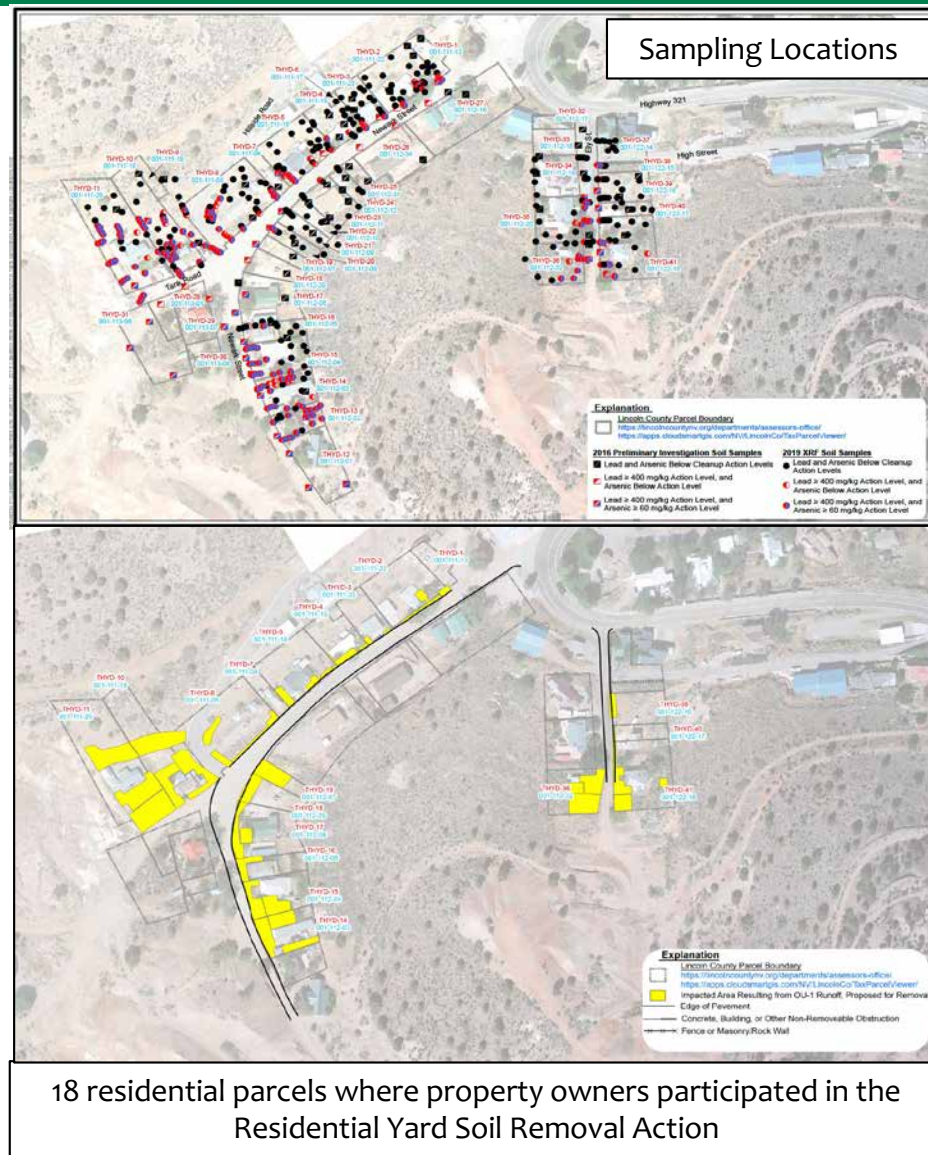


# Treasure Hill (OU1) Investigations

## Residential Yard Sampling

(Town of Pioche residential properties closest to Treasure Hill)

- ✓ A total of 567 samples were collected and analyzed for lead and arsenic
- ✓ 29 residential parcels had concentrations that exceeded the risk-based cleanup action levels for lead and arsenic
  - Lead = 8.1 mg/kg to 6,700 mg/kg
  - Arsenic = 5.2 mg/kg to 330 mg/kg
- ✓ The NDEP and Multistate Trust prioritized removal of lead and arsenic contaminated soils in residential yards along Tank Road, Newark Street and Ely Street as an interim action
- ✓ Property owners of 18 residential parcels participated in the Residential Yard Soil Removal Action



# Treasure Hill (OU1)

## Residential Yard Soil Removal Action

(Town of Pioche residential properties closest to Treasure Hill)

- ✓ Work began in March 2020 but was ultimately postponed due to the COVID-19 pandemic
- ✓ Work was commenced in September 2021 and was completed in July 2022
- ✓ ±2300 cubic yards of contaminated soils were removed from the residential parcels
- ✓ Over 5,800 field hours were incurred without a health and safety incident



Before Excavation



After Excavation, Backfill and Restoration



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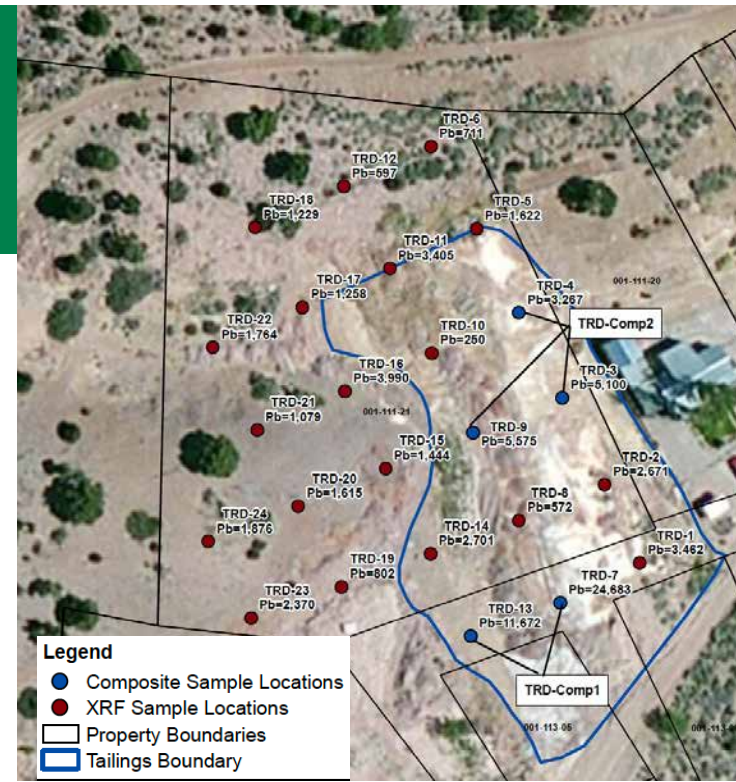


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# Treasure Hill (OU1)

## Assessor Parcel Number (APN) 001-111-21

- ✓ Collected 40 samples
  - Lead = 250 mg/kg to 38,000 mg/kg
  - Arsenic = <46 mg/kg to <508 mg/kg
- ✓ Tailings identified on this property
- ✓ Multistate Trust with approval from NDEP, supported the acquisition of this property by Lincoln County
- ✓ Property may be suitable for long-term stormwater management



View of tailings looking south towards the water tank



View of tailings looking east towards Tank Road





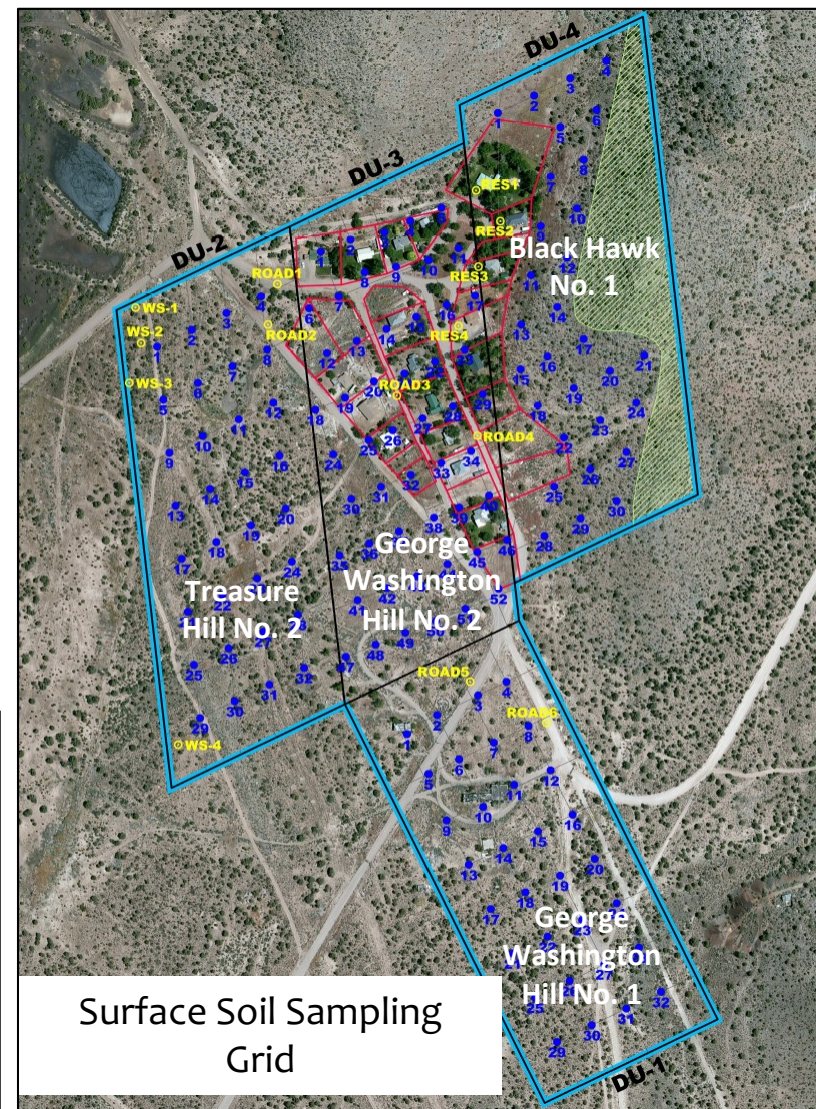
# Proposed Additional Investigations and Cleanup Activities (OU1)

- ✓ Multistate Trust to conduct pre-design investigation at APN 001-111-12 to determine:
  - Total volume of tailings present, density of tailings, depth and extent of impacted native soil beneath the tailings, native surface slope and configuration beneath the tailings
  - Estimate of stormwater flows through the parcel using hydrologic analysis
- ✓ Multistate Trust and Lincoln County will use the pre-design investigation information to evaluate cleanup and stormwater options, including development of corresponding costs to implement
- ✓ Assess effectiveness of the Residential Yard Soil Removal Action in 2027 following a 5-year remedy review process



# Caselton Heights Investigation and Property Transfer (OU2)

- ✓ Developed a sampling plan for residential and unoccupied parcels
- ✓ Collected 128 samples and analyzed for metals
- ✓ Samples results were below the risk-based cleanup levels and considered safe for residential uses, thus no further cleanup action was warranted
- ✓ Land beneath the homes was transferred to the individual property owners in 2018
- ✓ Remaining land was transferred to Lincoln County



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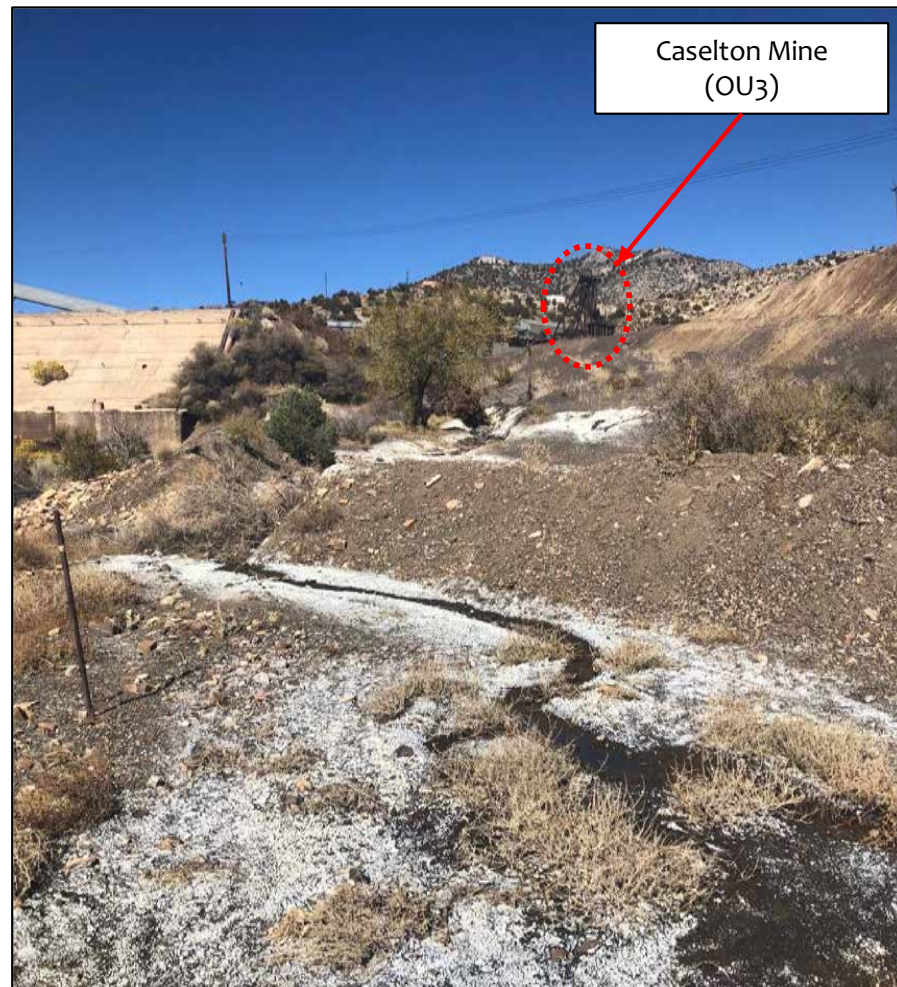


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# Caselton Mill Site Area (OU4)



Caselton Mill Site (looking south)



Caselton Mine  
(OU3)

Caselton Mill Site (looking north  
towards the Caselton Mine [OU3])



Sulfide Tailings

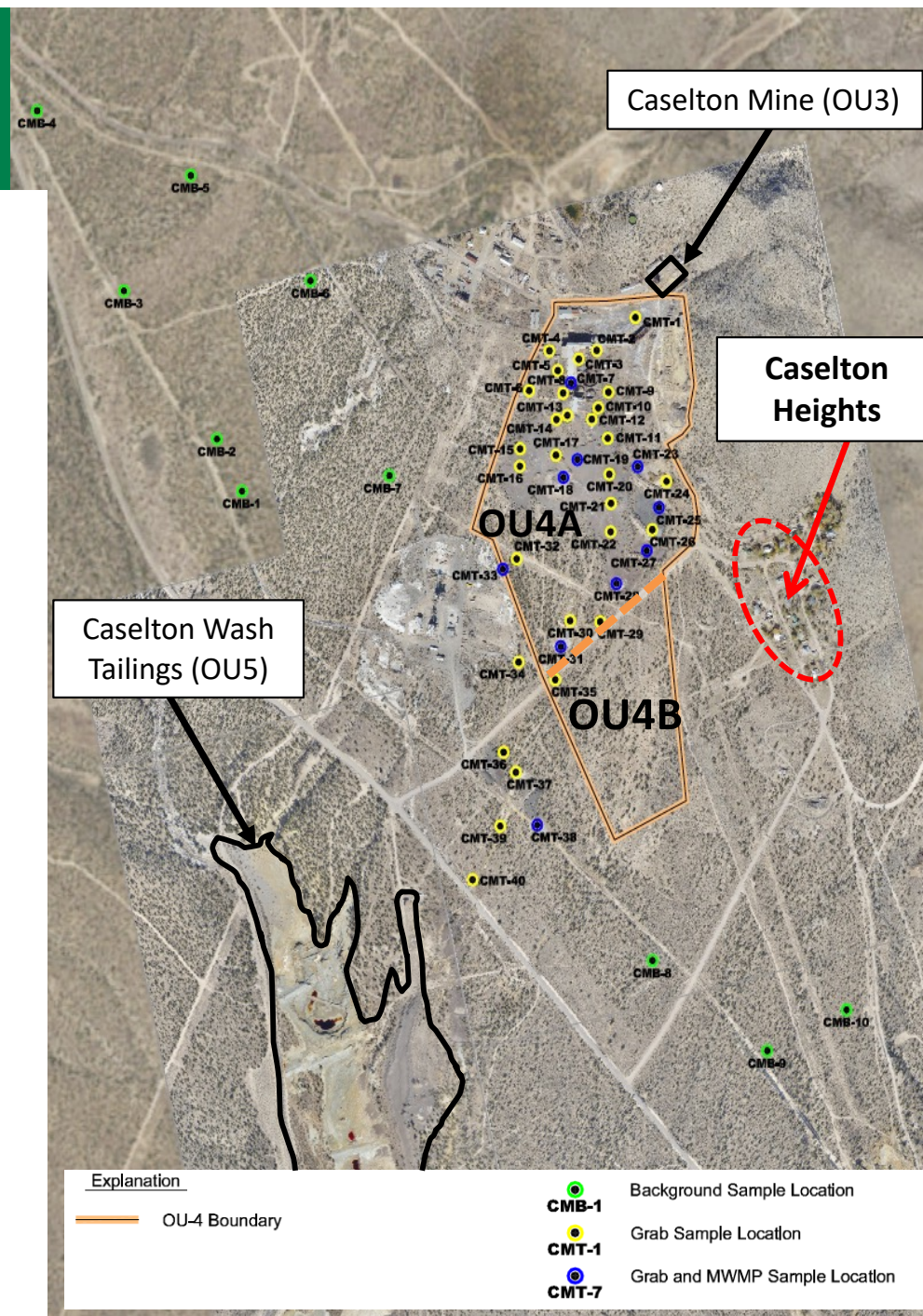


Sulfide Tailings



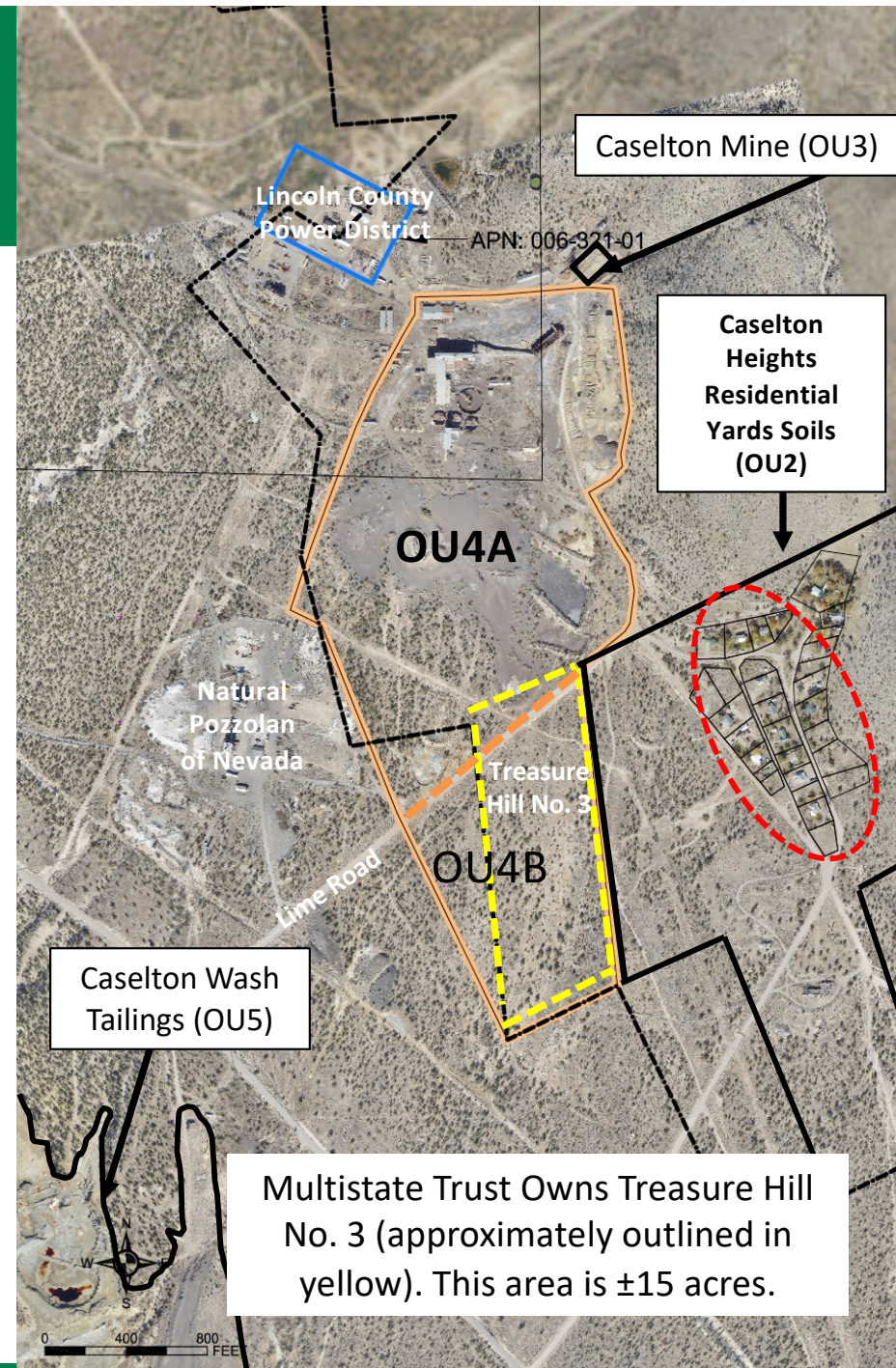
# Caselton Mill Site Area Investigation (OU4A)

- ✓ Collected 10 background soil samples
- ✓ Collected 40 grab soil samples, 34 within OU4A
- ✓ Background concentrations (green dots)
  - Lead = 54 mg/kg to 230 mg/kg
  - Arsenic = less than 10 mg/kg to 23 mg/kg
- ✓ Caselton Mill Site Area
  - Soil (yellow dots)
    - Max Lead concentration: 57,000 mg/kg
    - Max Arsenic concentration: 2,500 mg/kg
  - Leachate (blue dots)
    - Max Leachate Lead concentration: 4.4 mg/L
    - Max Total Arsenic concentration: 120 mg/L
- ✓ Compare Results to Industrial RSLs
  - Lead = 800 mg/kg
  - Arsenic = 7.2 mg/kg
- ✓ Potential unacceptable exposures
  - Future Industrial Worker
  - Recreator
  - Ecological via stormwater transport
- ✓ Only 1 sample has been collected in OU4B



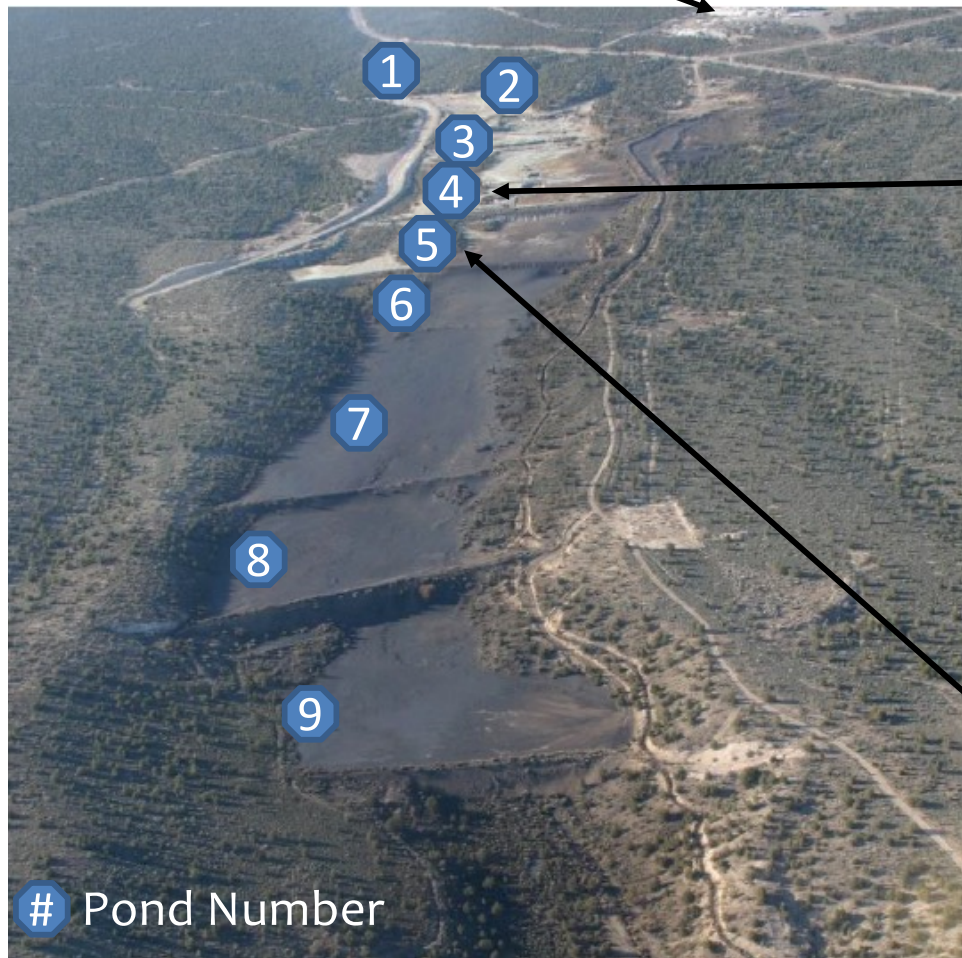
# Proposed Additional Investigations (OU4)

- ✓ U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy's National Renewable Energy Laboratory (NREL) evaluation of the full Caselton Mill Site Area for future beneficial use
- ✓ NDEP and EPA Targeted Brownfield Assessment to determine extent of cleanup required in OU4B
- ✓ Potential Community Project grant for full geotechnical investigation of the Caselton Mill Site Area to establish scope and design requirements for the required remediation
- ✓ Once results are below NDEP-approved cleanup levels or a remedy has been implemented, property can be transferred to a future landowner



# Caselton Wash Tailings (OU5)

Caselton Mill Site



# Pond Number

View of Tailings Looking North



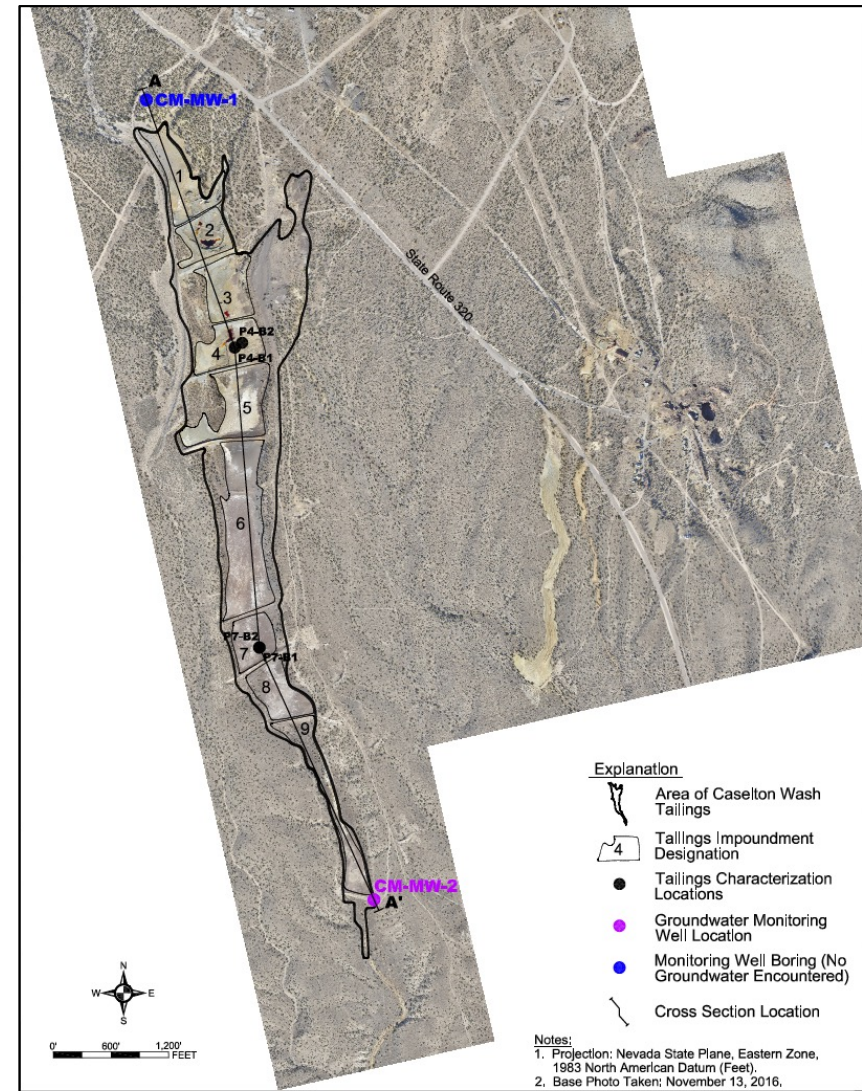
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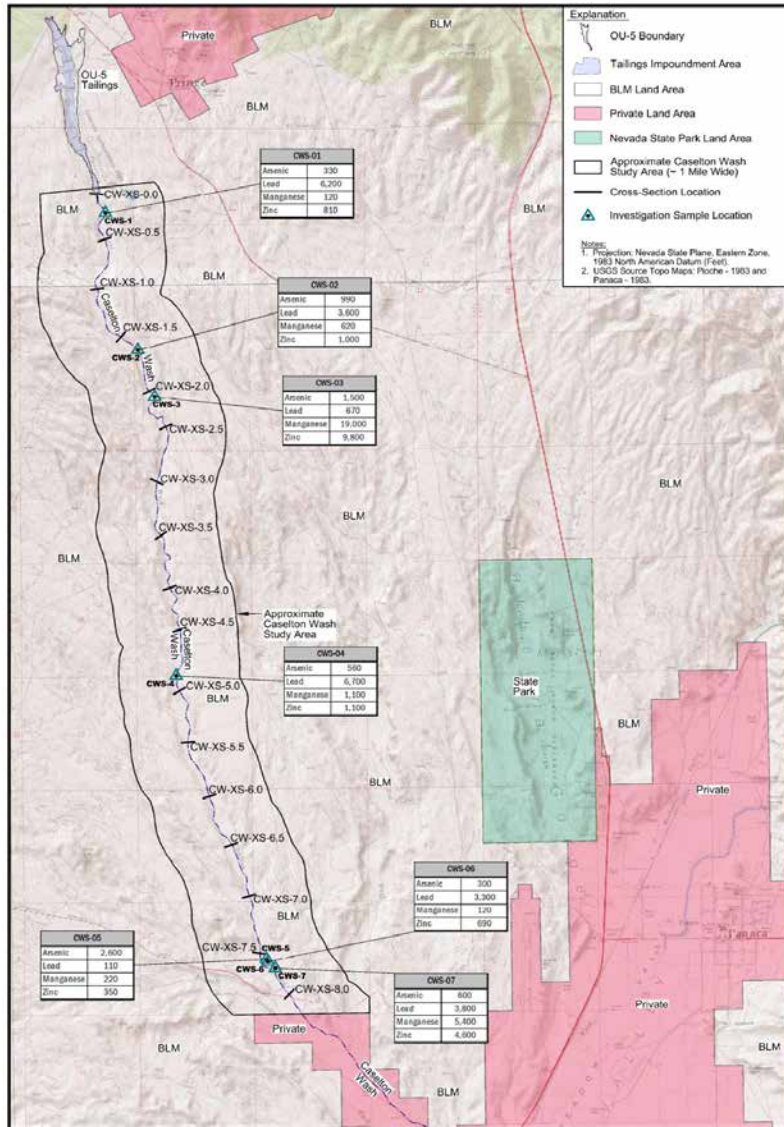
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# Caselton Wash Tailings Assessments and Investigations (OU5)

- ✓ Between 1986 and 2010, a number of environmental site assessments, investigations and evaluations were performed by CMR, Kerr-McGee, BLM, and USACE
- ✓ In 2017, the Multistate Trust drilled two borings to determine the depth of groundwater beneath the tailings
- ✓ Groundwater was not encountered at CM-MW-1. Total depth of boring was 483 feet below ground surface (bgs)
- ✓ Groundwater was encountered at CM-MW-2 at a depth of 328 feet bgs. A well was installed and sampled for 2 years. Metals concentrations were low to non-detect below the reporting limits.
- ✓ CM-MW-2 was abandoned in September 2020
- ✓ Modeling of contaminant leaching to groundwater is currently in progress by University of Nevada, Reno



# Caselton Wash Tailings Assessments and Investigations (OU5) (Cont'd)



- ✓ In 2019 the Multistate Trust collected 160 soil samples over an 8-mile length downstream of the Caselton Wash Tailings Ponds
- ✓ Risk assessment evaluation determined that wash soils are not expected to result in unacceptable risk to humans
- ✓ While there is potential risk to ecological receptors, the actual risk is likely overestimated and is not likely to adversely affect the ecological receptors
- ✓ Risk of continued deposition of tailings into the Caselton Wash from the tailings ponds is low





# Caselton Wash Tailing (OU5)



Large Flood Area at Mile 7.5 (CW-XS-7.5)



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# Proposed Additional Activities (OU5)

- ✓ Complete preliminary remedial investigation report once University of Nevada – Reno completes modeling of contaminant leaching to groundwater
- ✓ BLM will focus on activities to evaluate the portion of the watershed impacted by the Caselton Mine and Mill Site



# Funding Considerations and Cleanup Options

Paul Eckert, NDEP

Tasha Lewis, Multistate Trust



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# Funding Considerations

- ✓ A major challenge to cleanup activities is the limited amount of Site-specific funding
- ✓ The Multistate Trust, NDEP, BLM, Lincoln County, and other stakeholders are collaborating to identify and leverage other sources of funding for investigation, cleanup activities, and stormwater management
- ✓ FY2023 Community Project Funding Request
  - Project Purpose: NDEP's Caselton Mill Remediation project request would fund site investigations, engineering, and cost estimating for the work required to remediate the site for future reuse and development
  - Amount Requested: \$500,000
  - Match by the Multistate Trust: \$500,000



# Funding Considerations (cont'd)

- ✓ Bipartisan Infrastructure Law – Ecosystem Restoration, Revegetation, and Hazard Mitigation on Mined Lands
  - Project Purpose: BLM will focus on activities to evaluate the portion of the watershed impacted by the Caselton Mine & Mill Site
  - Amount Awarded: \$1,700,000
- ✓ NDEP and EPA Targeted Brownfields Program
  - Initial Amount Sought: \$100,000
- ✓ EPA and NREL Assessment
- ✓ Lincoln County applied for stormwater management funds of \$1,300,000 but was not awarded those funds



# Potential Cleanup Options for Treasure Hill (OU1)

Alternatives Evaluated	Preliminary Cost Estimates and Subject to Change	
	Rough Order of Magnitude Capital Costs (± \$)	Rough Order of Magnitude Annual O&M Costs (± \$)
No action	\$0	\$0
Curb & Gutter, Residential Yard Soil Removal, Low-Elevation Stormwater Best Management Practices (BMPs)	\$4,000,000	\$28,000
On-Site Waste Rock Repository (WRR) and Low-Elevation BMPs	\$4,100,000	\$28,000
On-Site WRR with Toe Grout Stabilization and Low-Elevation BMPs	\$4,300,000	\$28,000
On-Site WRR with Cover and Low-Elevation BMPs	\$4,300,000	\$28,000
On-Site WRR with Low- and High-Elevation BMPs	\$6,300,000	\$38,000
Off-Site WRR and Low-Elevation BMPs	\$4,900,000	\$28,000
Off-Site WRR and Low- and High-Elevation BMPs	\$7,600,000	\$38,000
Off-Site WRR with Stormwater Retention Basin (SRBs)	\$6,100,000	\$47,000
Off-Site WRR with SRBs and High-Elevation BMPs	\$8,800,000	\$47,000
Off-Site WRR with SRBs and Storm Sewer Pipeline (SSP)	\$10,000,000	\$38,000
Consolidate and cap the waste rock piles, implement stormwater BMPs (maintain viewshed)	\$10,000,000	\$50,000

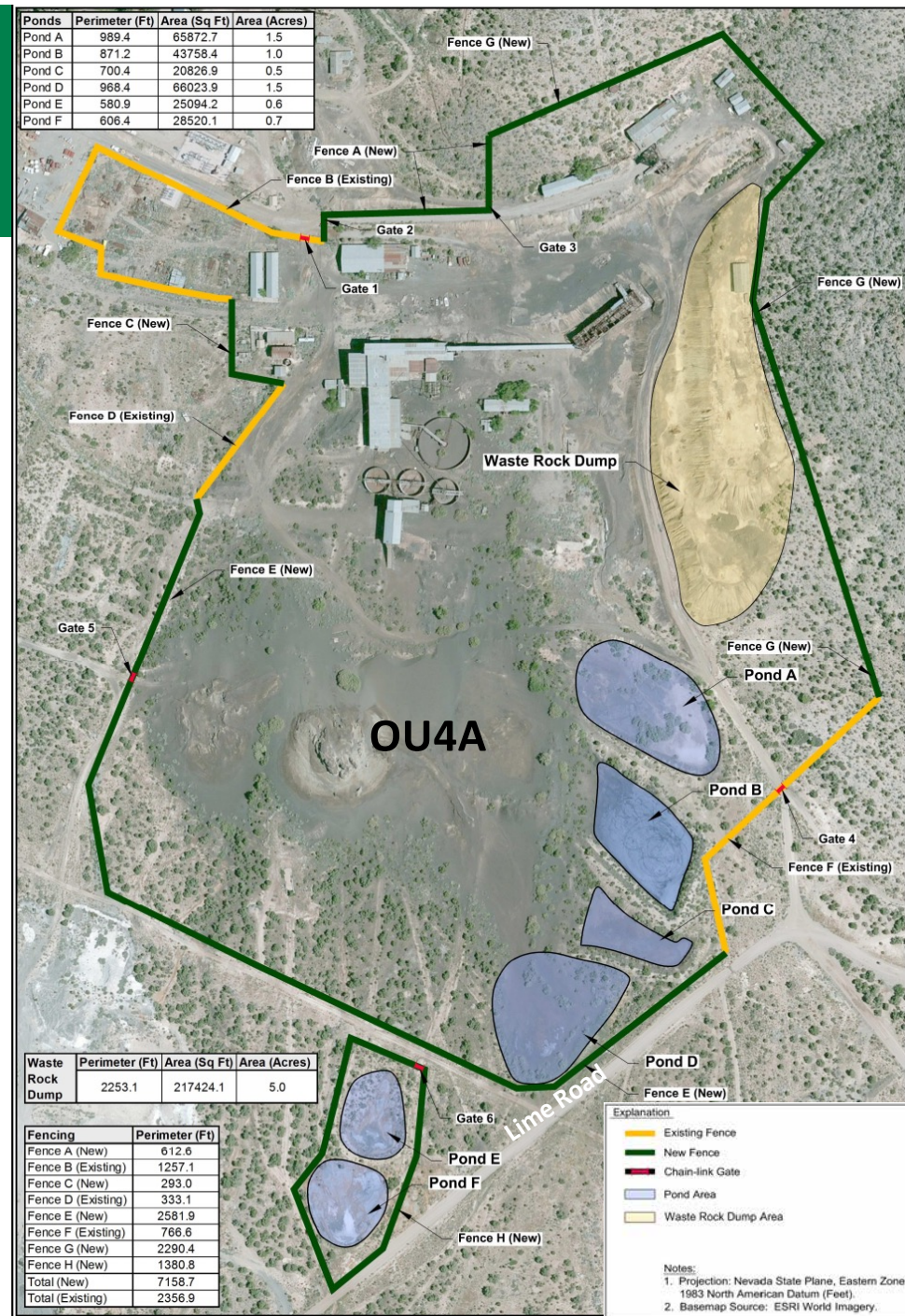
**Notes:**

1. The costs presented above were developed by the Multistate Trust's third-party contractor in 2018 and have been adjusted to account for inflation.
2. Costs are based on the information available at that time and are subject to change.
3. Costs for implementing a remedial action and stormwater BMPs on Ely Street are not included. These costs are difficult to estimate due to the significant design challenges (e.g., topography, geotechnical attributes, slope stability, and overall space considerations).



# Potential Cleanup Options for the Caselton Mill Site Area – OU4A

- ✓ Cleanup Options Evaluated to Date
  - No Action
  - Perimeter Fence
  - Cap Select Tailings
  - Stormwater best management practices (BMPs)
  - Building demolition with:
    - on-site repository
    - on-site repository and cap
    - off-site repository
    - Recontour, consolidate into an on-site repository, and cap with stormwater BMPs
  
- ✓ Interim cleanup option selected (due to funding constraints)
  - Perimeter fence around tailings and improve gates to limit access
  - Post “No Trespassing” signs
  - Implement Stormwater BMPs



# Potential Cleanup Options for Caselton Mill Site (OU4A)

Alternatives Evaluated	Preliminary Cost Estimates and Subject to Change	
	Rough Order of Magnitude Capital Costs (± \$)	Rough Order of Magnitude Annual O&M Costs (± \$)
No Action	\$0	\$0
Perimeter Fence	\$250,000	Not Calculated
Cap Select Tailings	\$110,000	
Stormwater Best Management Practices (BMPs)	\$2,100,000	
Building Demolition With:		
On-site repository (does not include stormwater BMPs)	\$3,200,000	
On-site repository and cap (does not include stormwater BMPs)	\$3,300,000	
Off-site repository (does not include stormwater BMPs)	\$7,000,000	
Recontour, consolidate into an on-site repository, and cap with stormwater BMPs	\$15,300,000	

- Notes:
1. The costs presented above were developed by the Multistate Trust's third-party contractor in 2018 and have been adjusted to account for inflation.
  2. Costs are based on the information available at that time and are subject to change.





# Potential Cleanup Options for Caselton Wash (OU5)

Alternatives Evaluated	Preliminary Cost Estimates and Subject to Change	
	Rough Order of Magnitude Capital Costs (± \$)	Rough Order of Magnitude Annual O&M Costs (±\$)
No Action	\$0	\$0
Institutional controls and surface water diversion	\$300,000	\$29,000
Recontour tailings, add lime, and re-vegetate	\$4,000,000	\$33,000
Recontour tailings, add lime, cap and re-vegetate	\$15,200,000	\$29,000
Remove tailings and place in an on-site repository	\$42,500,000	\$29,000

*Source: Costs presented are in today's dollars (i.e., accounts for inflation) and are based on Dynamac Corporation's Draft/Final Engineering Evaluation/Cost Analysis dated June 10, 2010.*

Note: In 2017, the Multistate Trust's third-party contractor estimated a total cost of ±\$15,300,000 (or ±\$20,800,000 in today's dollars) to install surface water diversions around the 9 tailings ponds and use excavated diversion channel materials to cover select portions of the tailings and improve pond embankment stability. Costs are based on the information available at that time and are subject to change.



# Potential Future Use Options and Discussion

Paul Eckert, NDEP

Tasha Lewis, Multistate Trust



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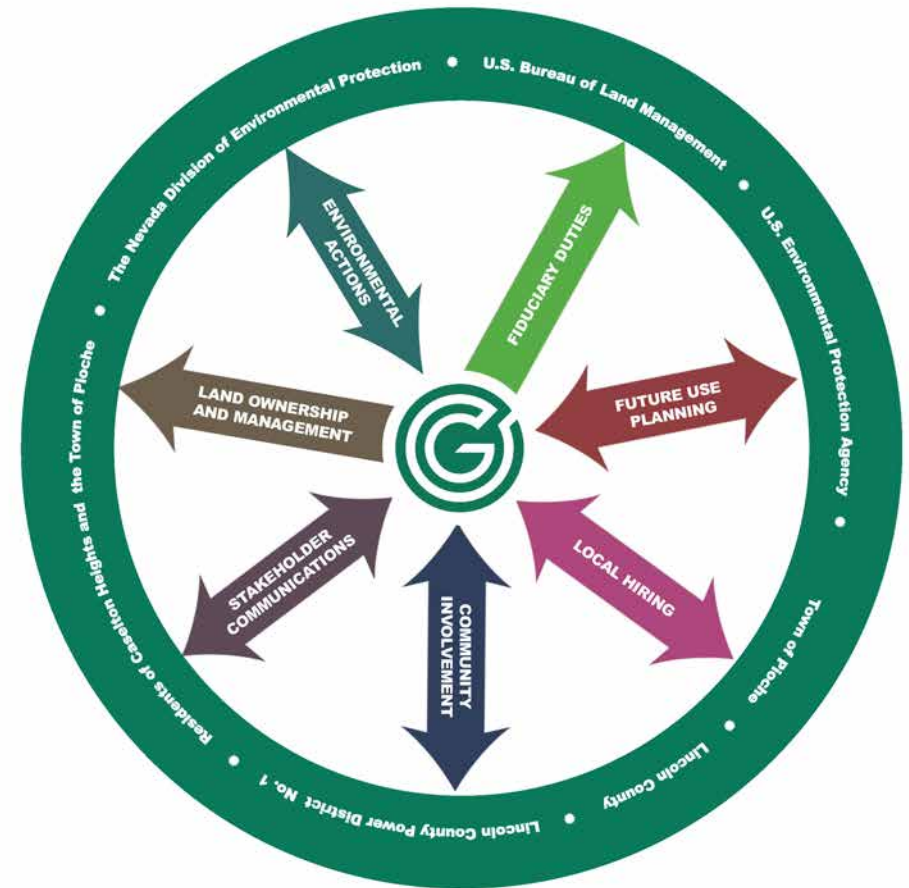
# Potential Future Use Options and Discussion

- ✓ The NDEP and Multistate Trust are pursuing a planning strategy for future use of the Caselton Mine Area, including the Caselton Mill Site Area that is:
  - Clear and transparent
  - Aligned with community-supported future uses and community interests
  - Consistent with goals to address economic, social, and environmental challenges associated with past mining operations
- ✓ Future use of Treasure Hill (OU1), Caselton Mill Site Area (OU4), and Caselton Wash Tailings (OU5) will be based on cleanup activities and is not expected to occur for several years
- ✓ Some ideas include positioning those portions of the Site for stormwater management, renewable energy (solar), recreational uses (e.g., shared use path), preserving some of the buildings for historical significance and as a point of interest



# Potential Future Use Options and Discussion

- ✓ We want to hear your ideas and what is important to you
- ✓ Please complete our community survey to share your ideas for the Site's reuse



This illustration depicts how we work with our beneficiaries, neighbors, and other stakeholders.



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# Contact Information

- ✓ Paul Eckert, Engineering Supervisor, NDEP  
[peckert@ndep.nv.gov](mailto:peckert@ndep.nv.gov), (775) 687-9484
- ✓ Tasha Lewis, Program Director, Multistate Trust  
[TL@g-etg.com](mailto:TL@g-etg.com), (602) 312-6993
- ✓ John Callan, Physical Scientist, BLM  
[jcallan@blm.gov](mailto:jcallan@blm.gov), (775) 861-6571



# Questions?



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