



2026 Trout Unlimited Southwest AML Program Overview

Thursday April 23rd, 2026
17th Annual Native and Wild Trout Conference

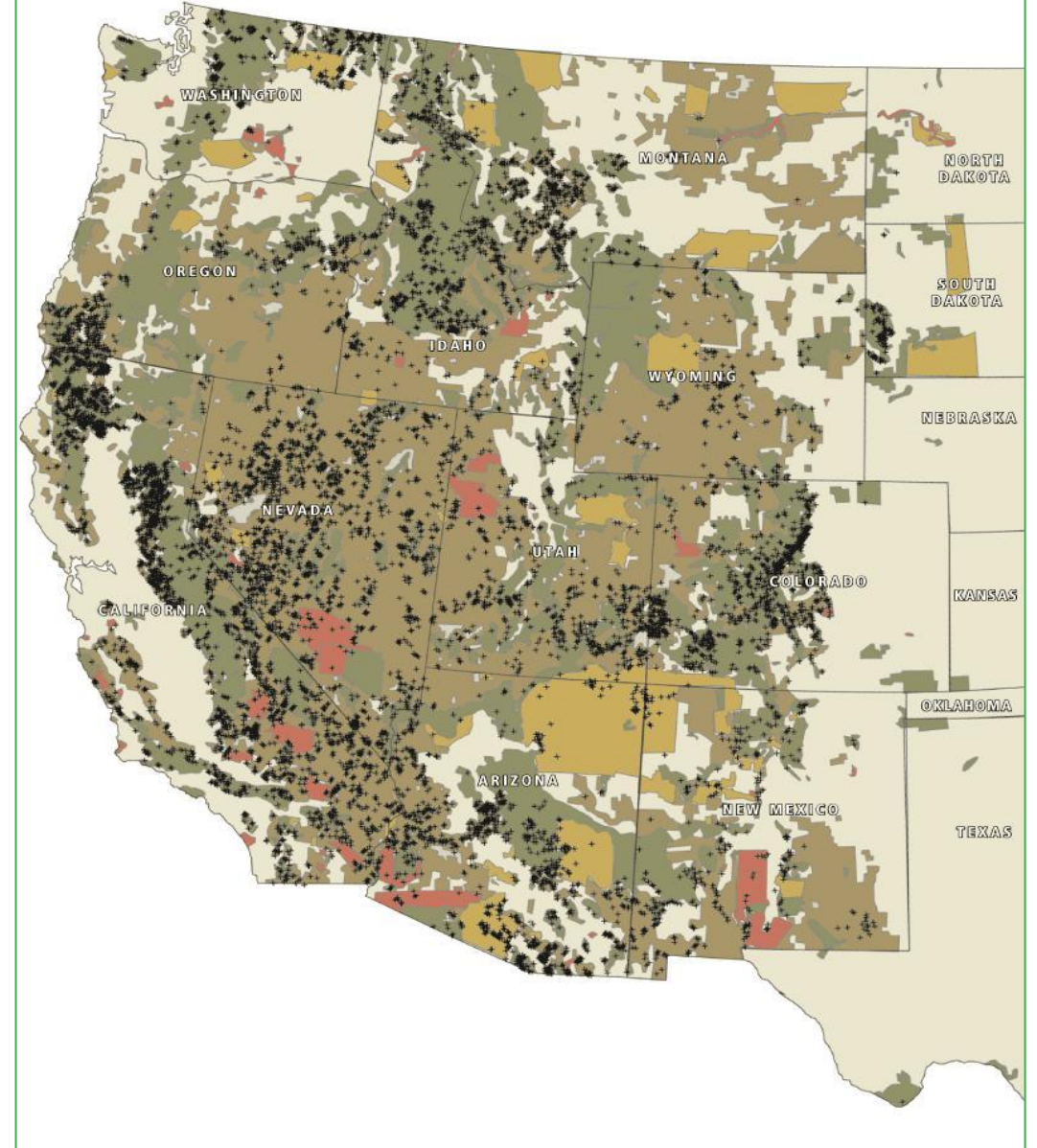
Jason Willis, P.E. – Western AML Program Director
&
Chase Gruber – Southwest AML Project
Manager/Engineer

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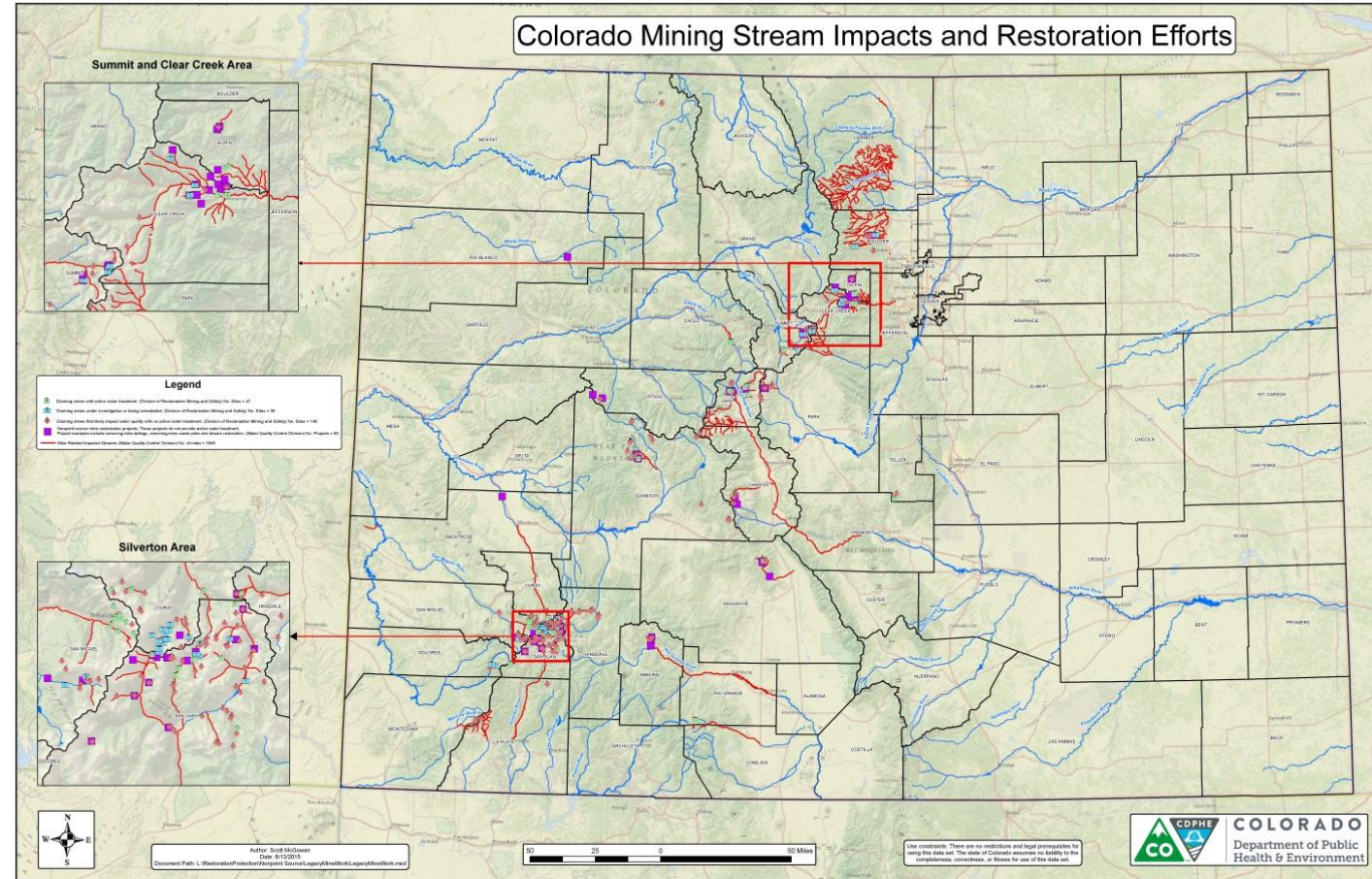
Mining Legacy in the Western United States

- Over 533,000 abandoned mines in the Western U.S.
- 40% of western watershed headwaters are polluted with mine wastes
- Approximately 100,000 abandoned mines exist on public lands today in 13 western states
 - **What would you guess those reclamation costs range between?**
 - **Estimated clean-up costs in excess of \$50 billion dollars**



Mining Legacy in CO and AZ

- Colorado Department of Natural Resources estimates approximately 23,000 abandoned mines
- > 80% of Colorado's most impaired waterways are the result of mining operations.
- According to a CO Division of Reclamation Mining and Safety (DRMS) study:
 - **230 mines draining contaminated AMD**
 - **47 addressed w/active treatments**
 - **35 under investigation and/or being treated**
 - **148 likely impacting WQ**
- Recent data from the AZ Mine Inspector states that there are likely ~100k abandoned mine features across the state.
- Also, recent work between universities and ADEQ have put that number at around 44,000 where measurable work could take place

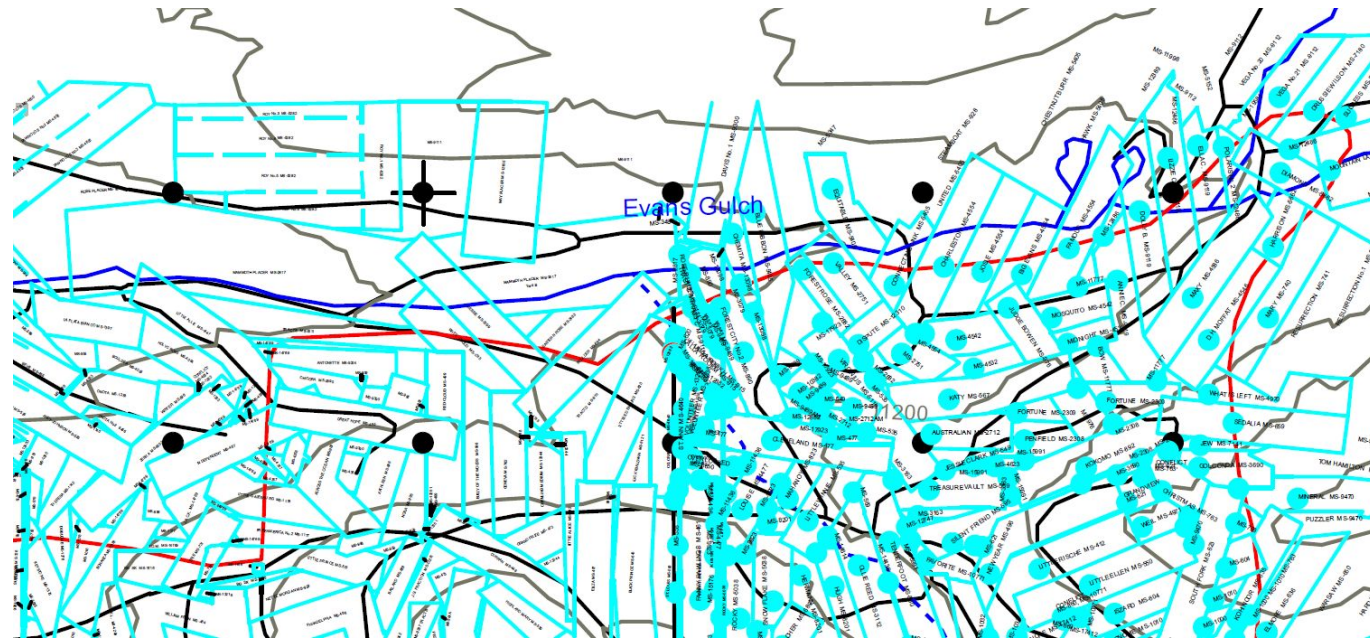


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What is TU's Role in Mine Reclamation Work?

- I didn't know that TU did that??!....
- Focus on watersheds that exceed State water quality standards and have overlap with TU priority/focal waters
 - Grant funded projects (319 NPS, NFF, Water conservation boards, conservancy districts)
 - Federally and State funded projects (USFS, BLM, BoR, NRDa, (CDPHE/NDEP/etc))
 - Private funding for match and construction
 - Corporate mining companies, big tech, water providers, foundations, etc.
 - Becoming more important given federal funding uncertainties
- As a non-profit, non-governmental organization (NGO) role, TU has ability to work across property lines.
 - Brings alternative sources of funding to projects (private partnerships)
 - Flexibility in contracting & engineering experience to assist in project development
 - Collaborative relationships with Federal, State, Private, and Local agencies



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Expanding AML to Southwest Region

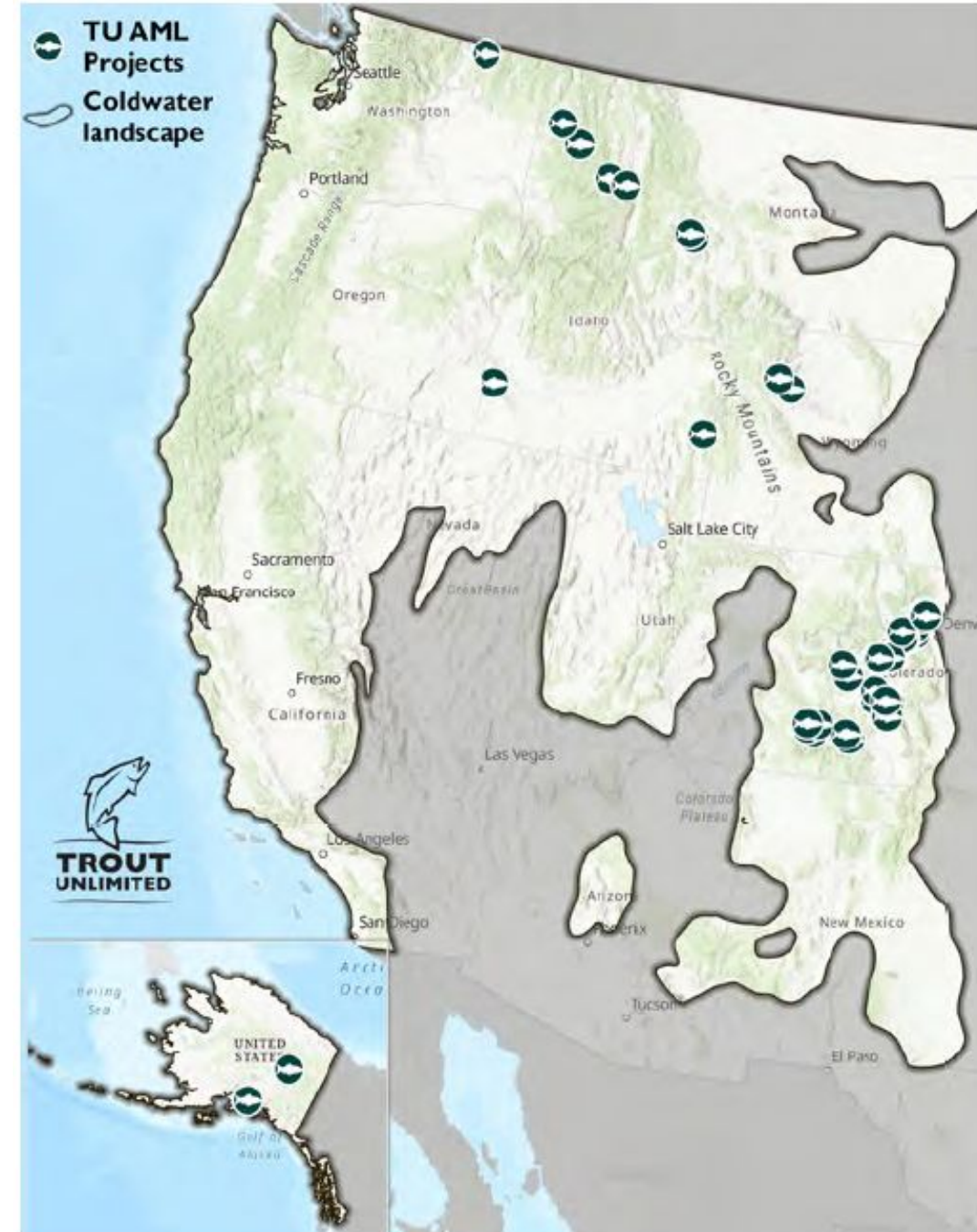
- Since 2004 TU has completed 60+ phases of cleanup at mine sites in the western US on federal, state, and private land.
- Most projects completed in CO, MT, and ID leaving a gap in the SW with no shortage of abandoned mines

How and Why?

- Cleaning up contamination to improve our nation's cold-water resources
- Leveraging industry partnerships through technical expertise and funding
 - Matching grants & agreements to get more work done on the ground
- Long standing partnerships with Freeport McMoRan, Resolution Copper, Newmont, Kinross, Nevada Gold Mines, Integra Resources, and SSR Mining/CC&V.

Collaboration is Paramount

- TU has been a part of the mixed ownership group in CO for 15 + years
 - Group of federal, state, local, and NGOs focused on identifying AML projects and working together
- TU AML program has always been heavy on Civil and Env engineering



Mining Law Of 1872 and Its Legacy



- Created to help develop and expand the western US by making it cheap and easy to stake mining claims.
- This, however left behind thousands of orphaned, or abandoned mine sites with no owner or entity to bear cleanup costs.
- Most of these former private and public claims are the responsibility of the Federal gov't to clean up.
 - Good Sam's can help with capacity!

Challenges to Cleaning Up Abandoned Mines



- No identifiable or potentially responsible parties (PRP)
- Lack of a dedicated funding sources and/or funding cuts (EPA 319 NPS program cuts and recent Federal funding freezes/shortages)
 - **319 Critical Funding source to CO AML program**
 - **Total of \$1,324,060**
- Liability concerns due to the Clean Water Act for Good Samaritan Organizations
 - **Now we have help with recent Good Samaritan Hardrock Remediation Act passed in Dec 2024.**
- Site specific design challenges -- No one-size fits all solution.

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The Good Samaritan Role in Mine Reclamation Work

- **Per recent and past guidance:**
- **A Good Samaritan is a person/entity is voluntarily agreeing to clean up contamination at an Orphan Mine Site under CERCLA and;**
 - **Is not a past or current owner or operator of any portion of the site impacted by releases of hazardous substances.**
 - **Had no role in causing the release of hazardous substances or existing contamination at the site or affiliation with someone who did; and**
 - **Is not potentially liable under any Federal, State, Tribal or local law for the remediation, treatment, or control of existing contamination.**



Types of Good Samaritan Projects

- Point vs. Non-point projects
 - **Point – Draining adits, treatment discharges, single identifiable discharges requiring a NPDES permit under the CWA.**
 - Now have ability with new Good Sam Law.
 - **Non-point – Mine waste piles or anything where one discernable drainage source can not be identified.**
 - Mostly what we can work on using existing CERCLA administrative tools.

Overview of Good Sam Law



- **Directs EPA to develop a new permit program to facilitate cleanups at abandoned legacy mines.**
- **Authorizes a pilot program for 15 projects anywhere in the country.**
- **Program sunsets after 7 years.**
 - **We must report back to Congress on the program's success and challenges.**
- **The idea to 'prove-up' the concept, demonstrate Good Sams can perform safe and effective cleanups, and then permanently authorize the program down the road.**



Good SAM in 2026 - 2028

TU role as a collaborator and practitioner

- Working closely with EPA on developing environmental process, guidance documents, and application process for future Good Sams
- Focusing on Bodie Mine Project in Washington State as first Good Sam project – Scheduled for September 2026
 - **790 tons of fluvial tailings mitigation**
 - **400 LF of stream bank stabilization**
 - **Several acres of revegetation**
 - **Reduce migration of contaminated sediment into Toroda Creek and the Kettle River.**
- Working with NM and AZ to identify projects for pilot program with TU as potential lead
- Collaborating with DRMS for potential sites in CO – DRMS-led or TU-led project at Solomon Mine for water treatment
- Partnering with industry in ID on an investigative sampling permit



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AML Program Recent Case Studies

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Telluride Valley Floor

San Miguel River

- 23 acres of riparian restoration following 2021-22 USEPA Time Critical Removal Action
- 3,900 linear feet of restored channel on NFS lands
- 1,400 linear feet restored on TOT property, with major funding contributions from TU
- 5,300 linear feet restored
- Expected to create 4 acres of wetlands
- Number of native plants installed:
 - **30,000 willow cuttings**

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Telluride Valley Floor

Realignment of the channel to create and enhance wetlands while protecting critical infrastructure

- Aspen, Subalpine Fir, Douglas-Fir repurposed for toe wood and chipped for soil amendment
- Reuse of woody material promotes carbon storage and long-term carbon sequestration





Valley Floor Continued

Fundraising Summary

Major Funders:

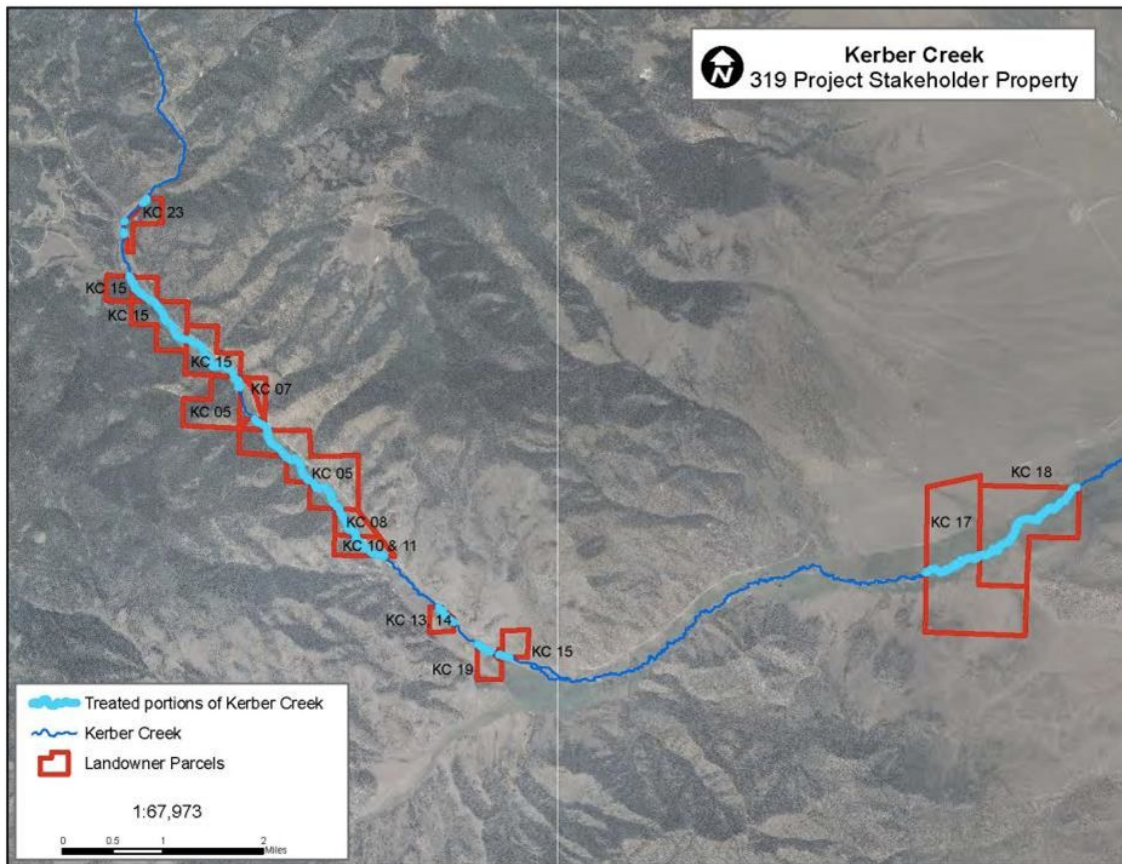
- Colorado Water Conservation Board
- U.S. Forest Service
- Freeport McMoRan
- Newmont Mining
- Colorado Trout Unlimited & TU Chapters
- Local Fundraising and Philanthropy

Funding Breakdown:

- Design, Planning, Permitting
 - **\$165,000**
- Earthwork/Excavation
 - **\$1,235,000**
- Revegetation – Plant Propagation and Install, Seeding
 - **\$385,000**
- **TOTAL = \$1.785 million**

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Kerber Creek - Upper Rio Closed Basin

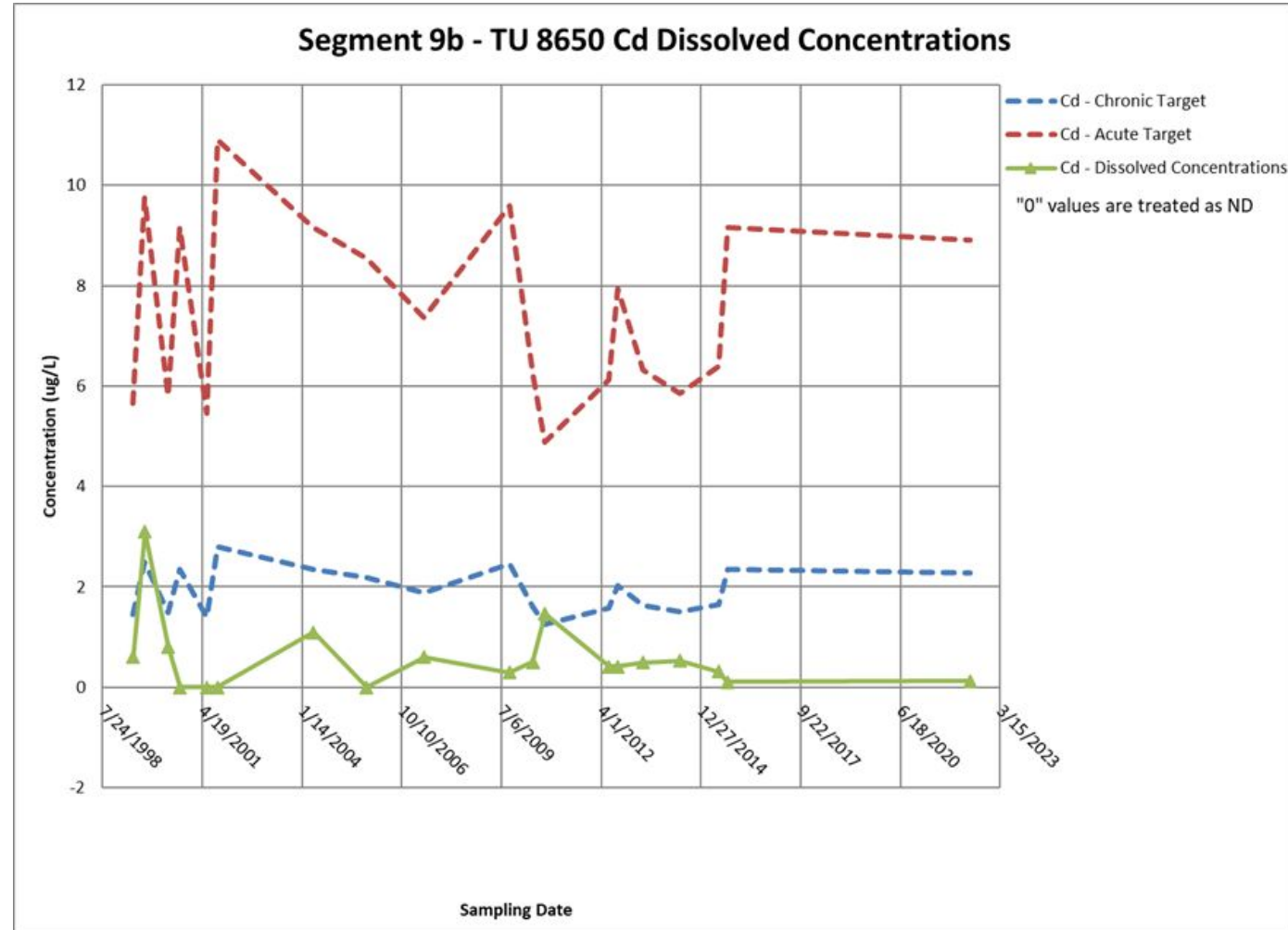
- TU's work followed 15 years of Agency-led CERCLA work in headwaters to kick off reclamation.
- TU AML related 319 work 2008 to 2016
- Goals to pyhtostabilize 34 acres, stabilize streambanks at 30 sites, install 100 habitat structures, and monitor.
- 10 WQ sites of dataset began in early 1990s by CDPHE, EPA, USFS, BLM
 - **Segment 9a - pH, T-Cd, Pb, Ag**
 - **Segment 9b - D Cd, Cu, Zn**
- Large suite of monitoring parameters
 - **Every River Needs A Champion**
 - **Sinuosity W/D Ratio % cover**



Kerber Creek – Effectiveness Monitoring

319 Grant Continual WQ Monitoring

- Through continual WQ monitoring support by CO MRP program, post-project monitoring was conducted in 21/22 seasons.
- Segment 9B was recently recommended for removal of D Cd, Cu, and Zn from Category 4a to 1 (attaining) making this one of the first projects TU has worked on with a delisting
- Load reductions over time
- KC06 2013 7.5 lbs/day Zn
 - 3.989 lbs/day Zn in 2015
 - 1.681 lbs/day Zn in 2022
- Also similar trends for Cd, Cu at other long term sites





Southwest AML Program Development

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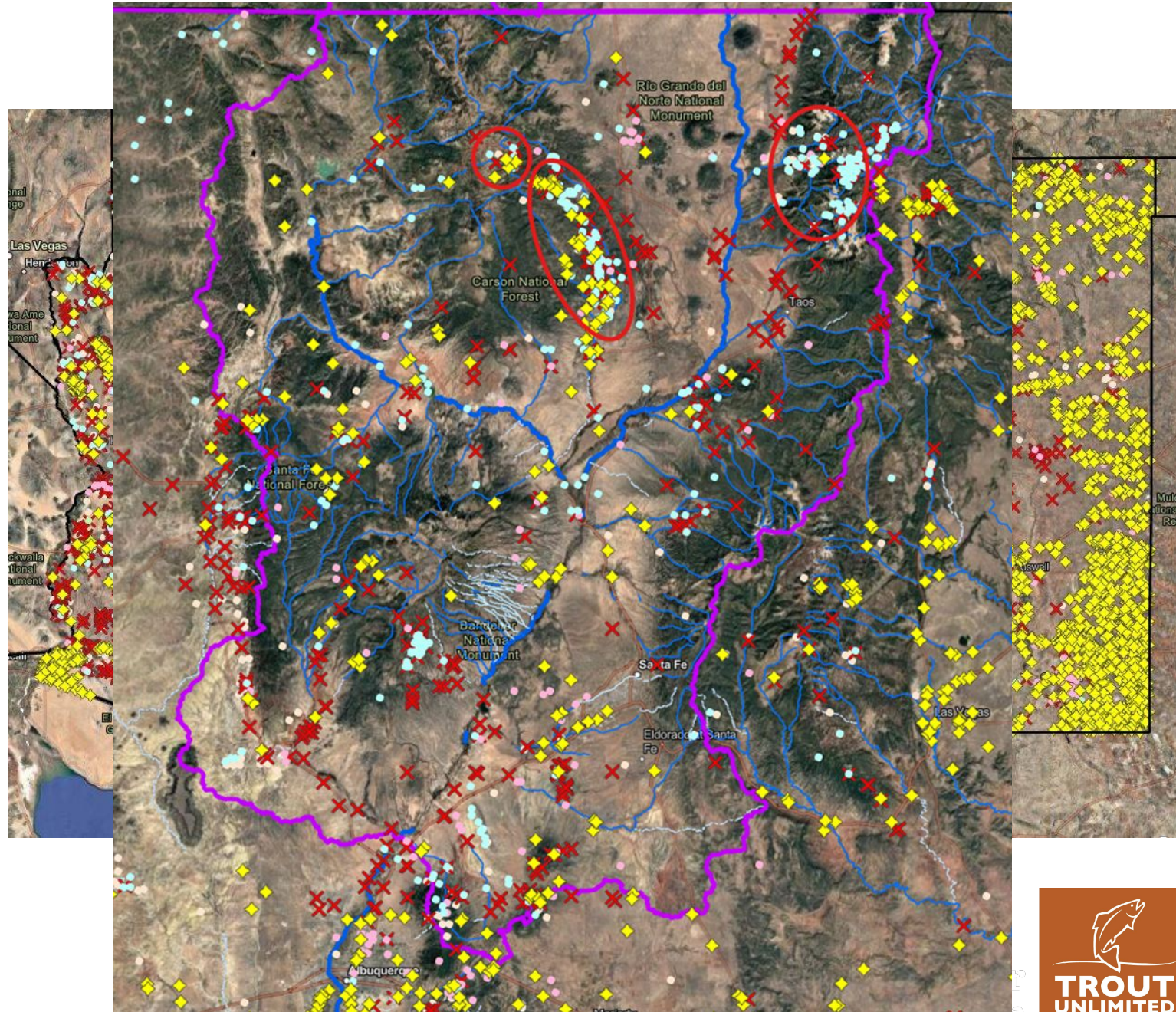
Southwest AML Prospecting

- Arizona: +12,000 Mine Sites*
- New Mexico: +8,000 Mine Sites *

Source: USGS - U.S. Mineral Deposits Database

Filtering Criteria:

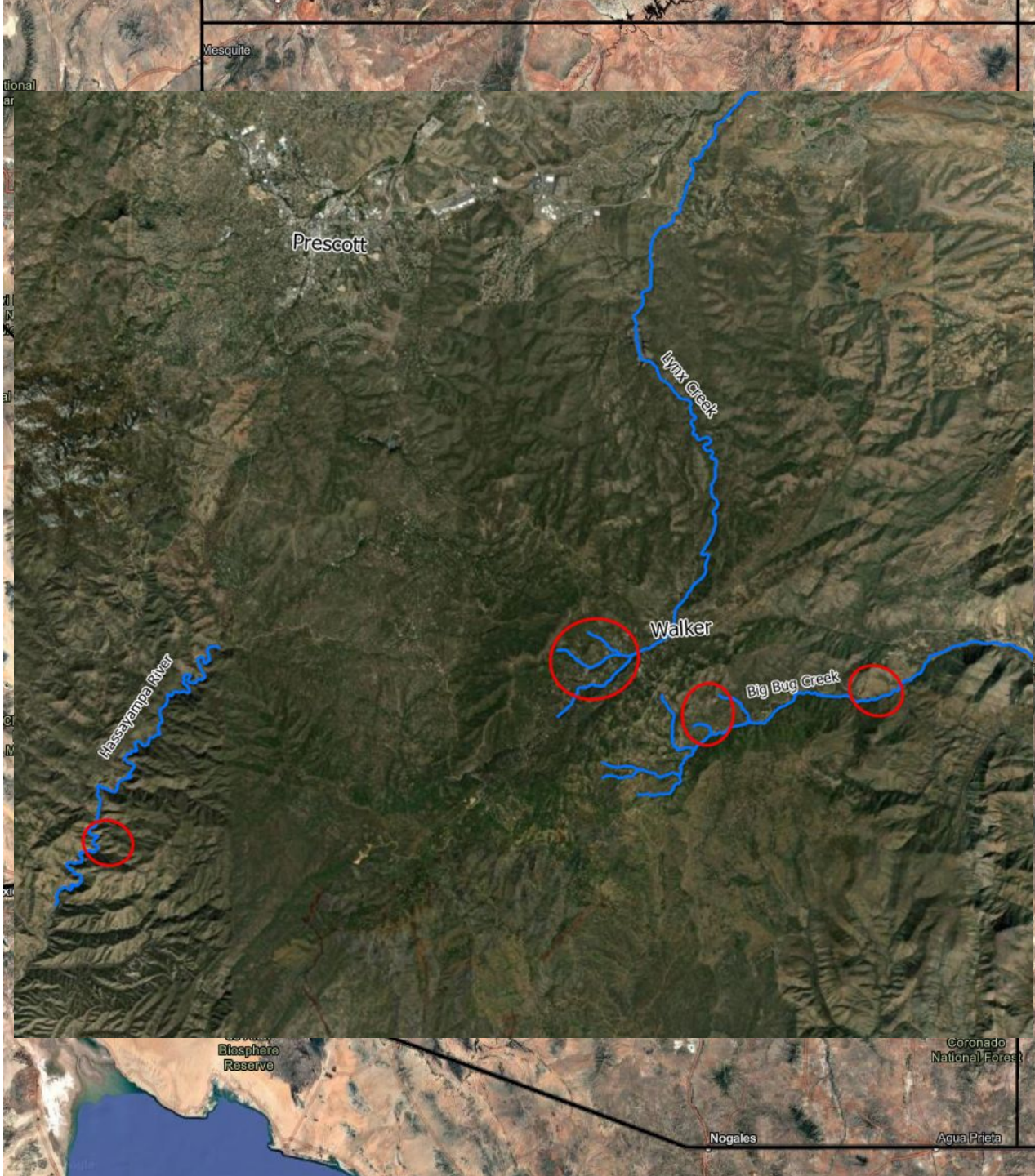
- TU priority waters
- Large clusters of mine features;
- Nexus to receiving waterbodies;
- Impaired waterways;
- ESA and/or native species range;
- Proximity to roads/trail;
- Priority locations from partners





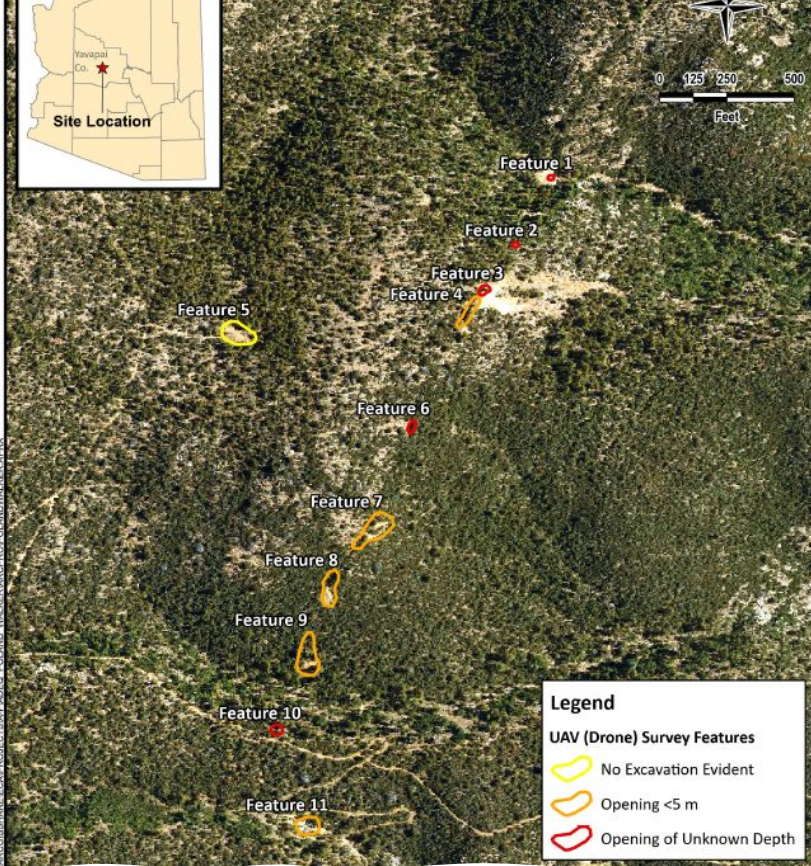
AZ Projects

- Big Bug Mining District
 - Walker Mining District
 - Hassayampa Mining District
- Receiving drainages included in State's Impaired waters list for heavy metals.
 - 30 potential AML sites identified
 - Working with AZDEQ to identify priority sites
 - Site visits to Big Bug, Walker, and Hassayampa Mining Districts



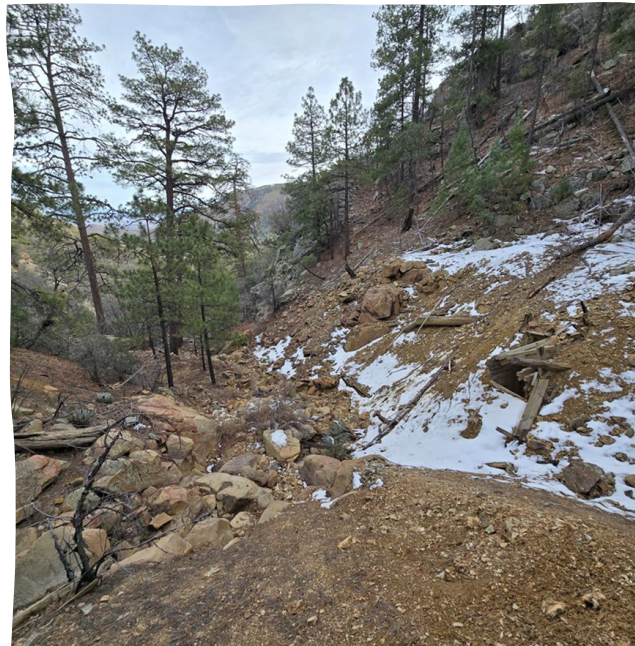
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Rink Mine

- Big Bug Creek
 - Identified as potential location for reintroduction of ESA-listed Gila Trout
- Included in State's Impaired waters list for heavy metals.
 - Zinc, Arsenic, Copper, Lead
- Will be working with ADEQ and landowner to identify cleanup solutions.



Sheldon Mine Dump

- Lynx Creek
- Included in State's Impaired waters list for heavy metals.
 - Zinc, Copper
- Drains into Lynx Lake (Trout fishery)
- Previously reclaimed site.
 - 1975, UofA and USFS
 - Regraded slope, 15 tons Lime/acre, 6" topsoil, hydromulched
- Will be working with ADEQ, Landowners, and Community to identify cleanup solutions



Climax Mine

- Hassayampa River
- Included in State's Impaired waters list for heavy metals.
 - Zinc and Copper
- Potential Good Sam?





NM AML Projects

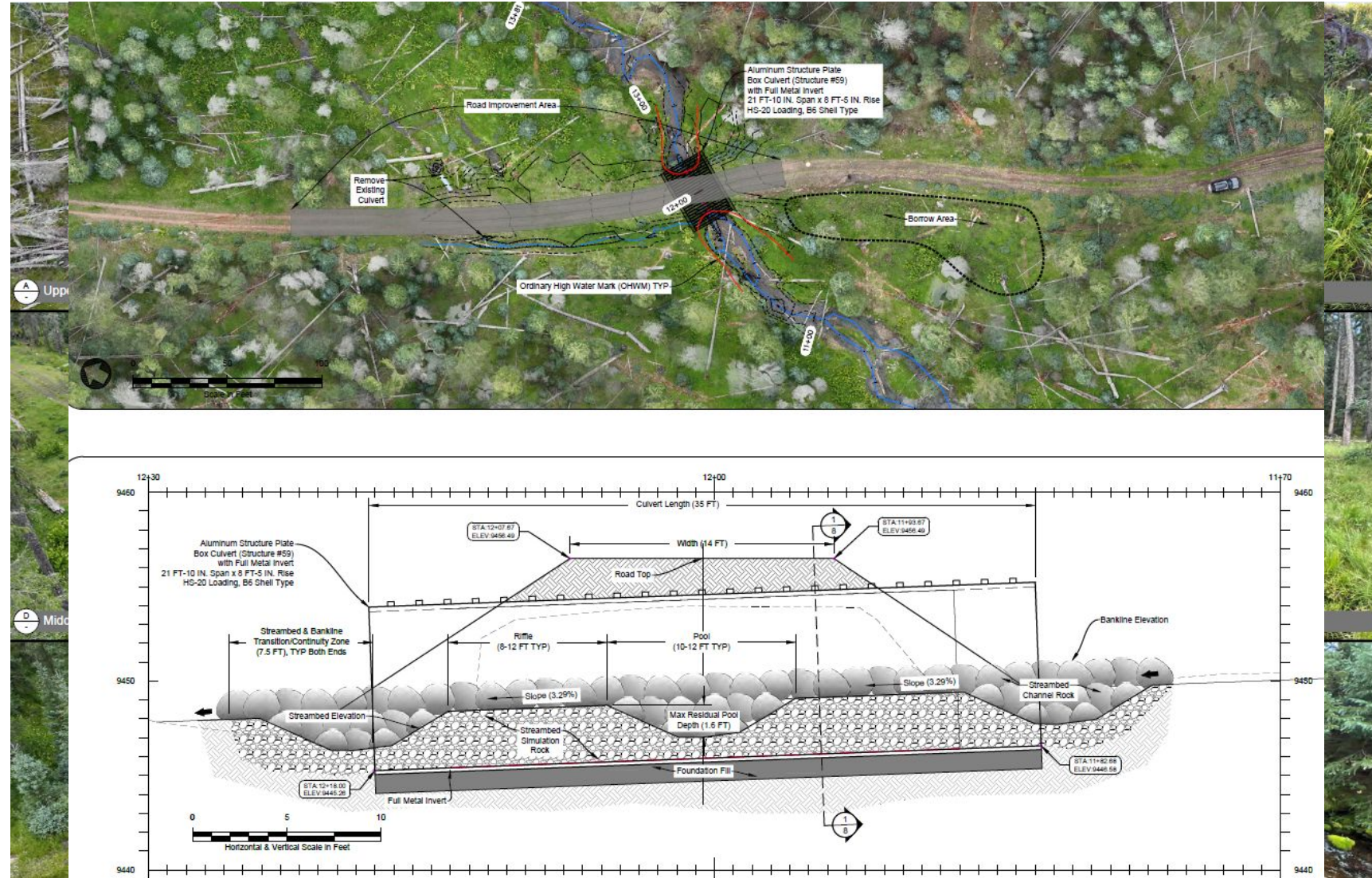
- Red River Mining District;
- Hopewell Lake Mining District;
- Tusas Mountains Mining District;
- Nogal-Bonito Mining Districts;
- Dawson Ranch (Vermejo);
- Mogollon Mining District
 - TU currently revising/updating EE/CA initially completed by Weston Solutions, Inc. and USFS (2002-2017)
 - Recent focus on sites with proximity to Mineral Creek and Silver Creek
 - § Mineral Creek is critical Gila Trout habitat
 - 2024/25 – TU conducted initial site visits, soil sampling and EE/CA revisions based on soil data.
 - 2026 - Complete water sampling associated with Sampling and Analysis Plan and final EE/CA edits
 - Intent of identifying projects or future removal actions that could benefit fishery and local ecosystem

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Paradise Creek – White Mountain Apache Tribal lands

- Removing and replacing 3 existing road crossings with 21'-10" span x 8'-5" rise aluminum structural plate box culverts
- WMAT lands in Unit 2 of Apache County, AZ
- 100% design in place with permits and contractor lined up for summer/fall 2026
- 3 Contech culverts delivered in June 2026 with construction afterwards.
- 405 linear feet of roadway embankment excavation and 110 LF of culvert length installed having several miles of connection impacts.
 - **Important conservation population of Apache trout in Paradise Creek**
- Project estimated at ~\$1M with \$102K earmarked from Freeport for work with a potential \$25k additional depending on other AZ projects



Closing

- Thanks for having us!
- Questions/Comments?
- Chase.gruber@tu.org and jason.willis@tu.org



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