

2022 YEAR IN REVIEW

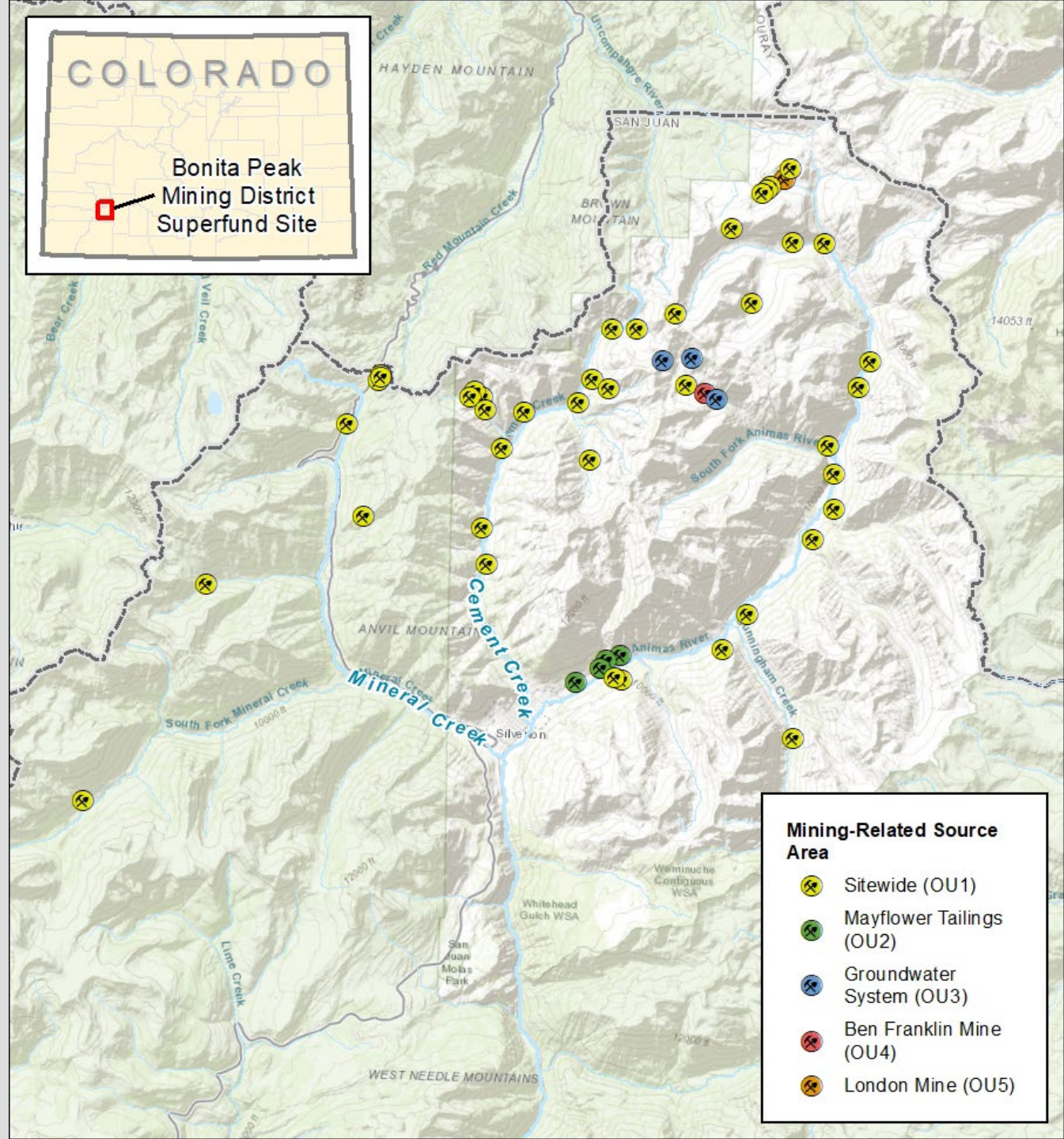
Bonita Peak Mining District Superfund Site

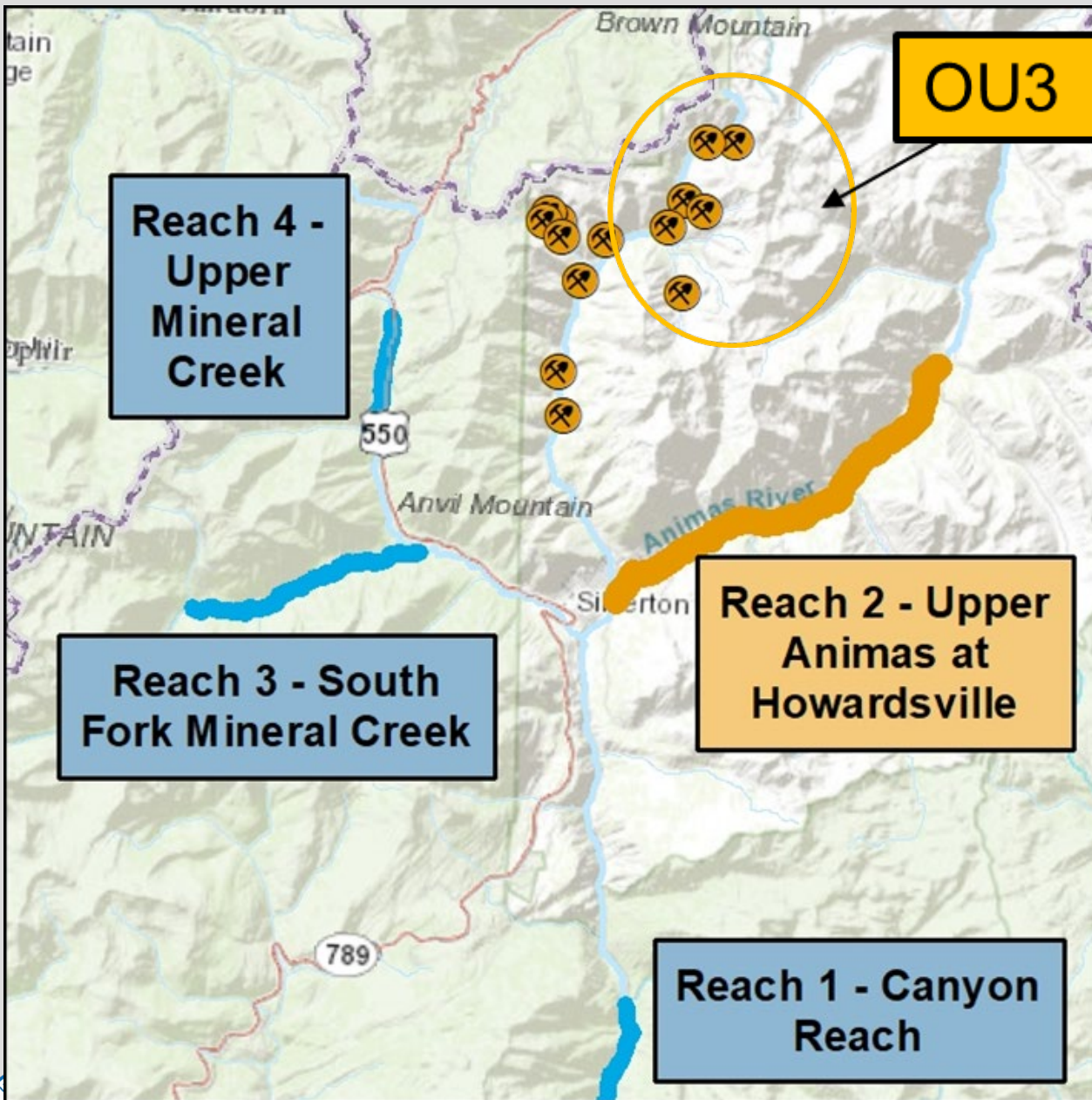


U.S. Environmental Protection Agency
January 2023

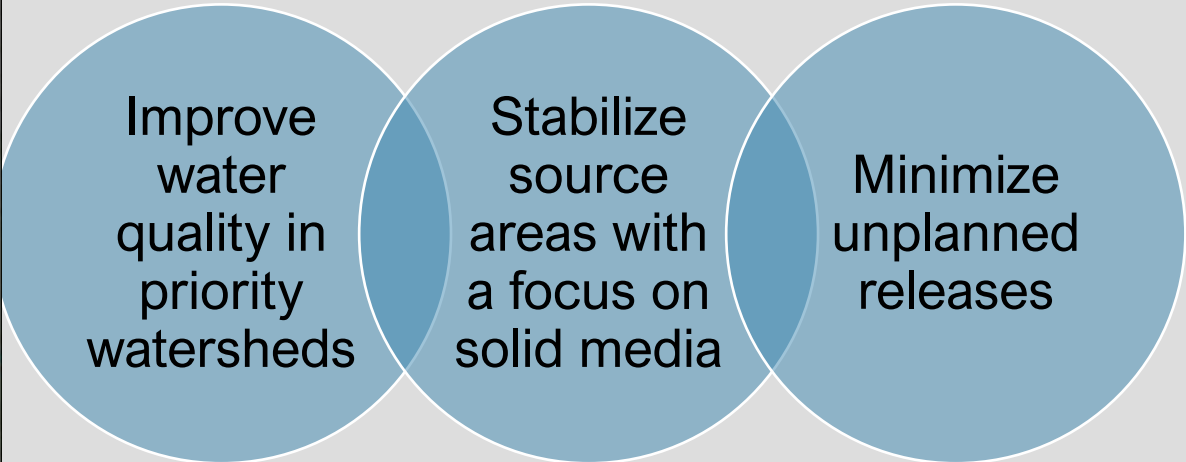
Bonita Peak Mining District Superfund Site

- BPMD Superfund site was listed on the NPL in September 2016
- 48 mining/milling source areas
- 3 main drainages
- 5 Operable Units (OU)





Site Goals



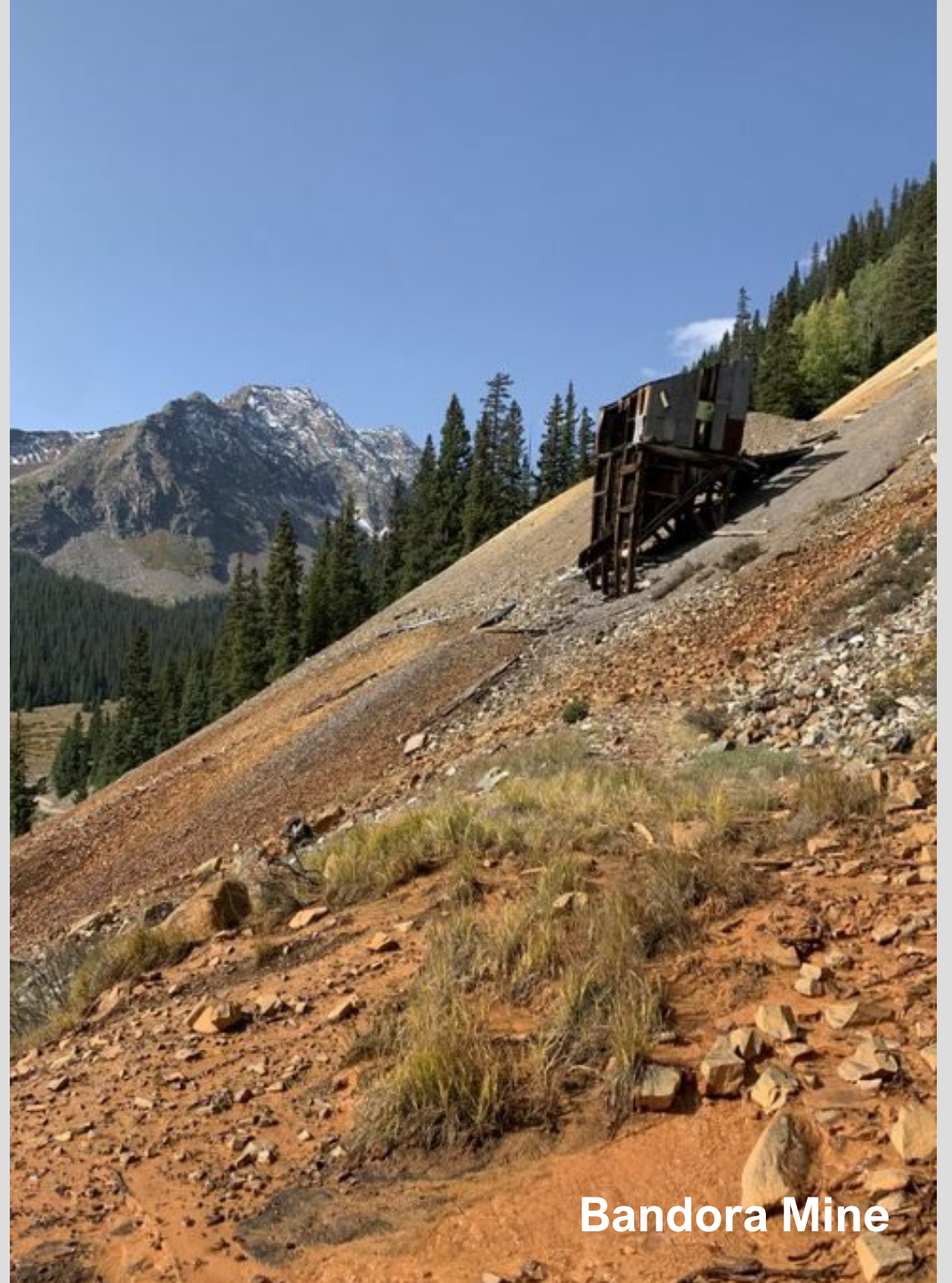
Site Strategy

Selected Site Management Plan (SMP) strategy focuses on:

- Upper Animas mine drainages
- Bonita Peak Groundwater System (OU3)

Ongoing site work:

- Gladstone IWTP
- Work pursuant to 2019 IROD
- Sitewide repository (Bonita Peak Repository)



Bandora Mine

2022 WORK COMPLETED



OU3 Groundwater Sampling

- June, August, and October sampling of North Fork and American Tunnel piezometers (NFPZ and ATPZ)
- Sampled at depths of 300 and 640 feet
- Continuous water level logging



Stream Bed Evaluation



Purpose: To identify any significant stream losses to groundwater.

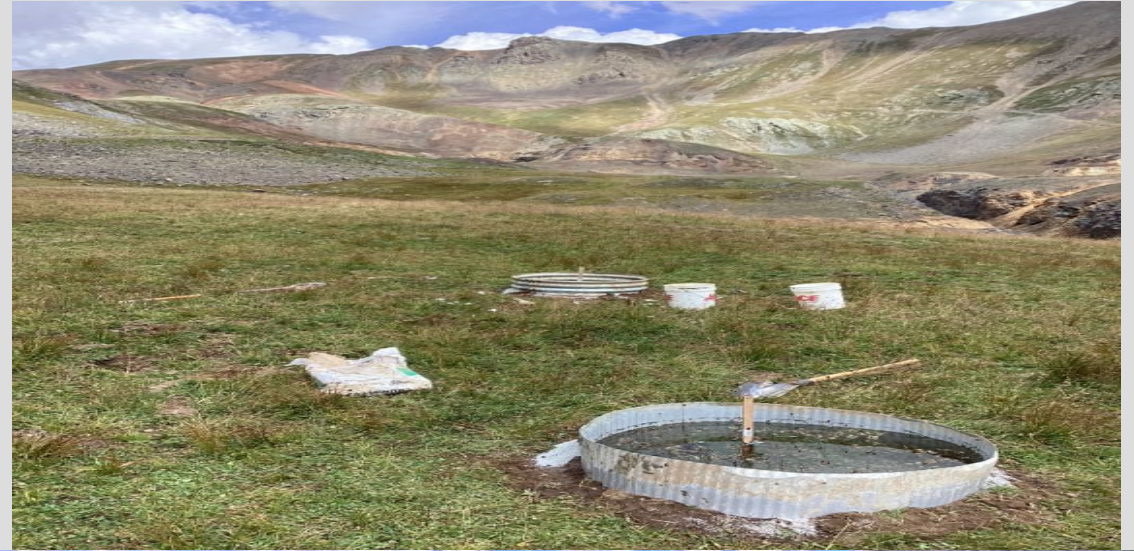
- Evaluated stream losses and gains in surface water by measuring discharge at several stations along a stream reach of interest
- Included Eureka Gulch tributary crossing major disturbances and reclamation areas in the Sunnyside Mine and former Lake Emma area and Upper Cement Creek from Ross Basin across the Mogul Mine



Infiltration Study

Purpose: To understand impacts of mining and reclamation activities on infiltration

- Lake Emma and Ross Basins
- Measured infiltration rates on reclaimed areas for comparison to undisturbed alpine areas
- Focused on the area breached during the Lake Emma drain event



Measuring Water Infiltration Rates Through Soils in Lake Emma Area



Upper Animas Investigations

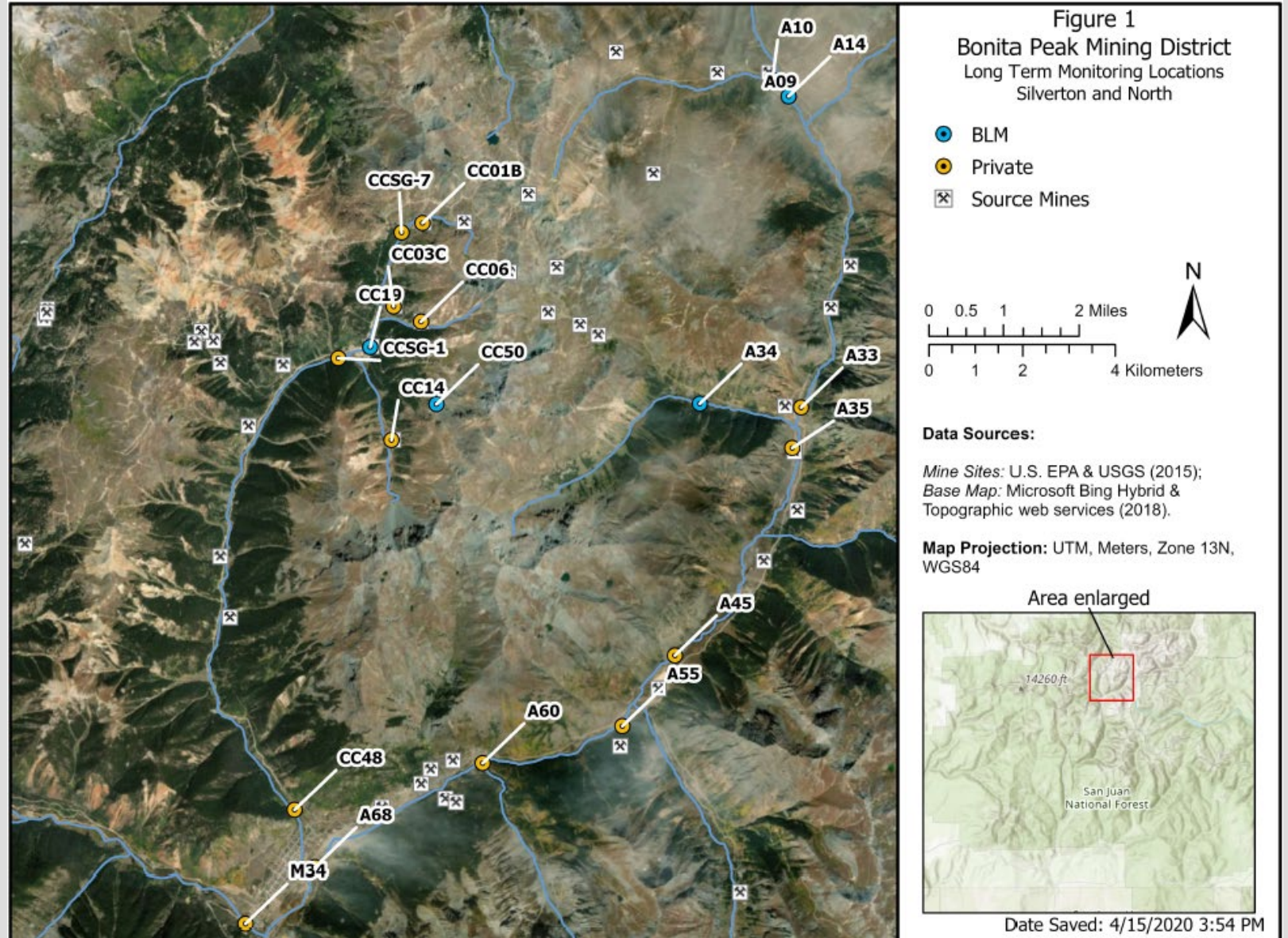
- Completed Fluvial Tailings Data Summary Report
- Installed ~ 10 groundwater monitoring wells and continued sampling (high/low groundwater)
- Initiate Howardsville Feasibility Bench Study



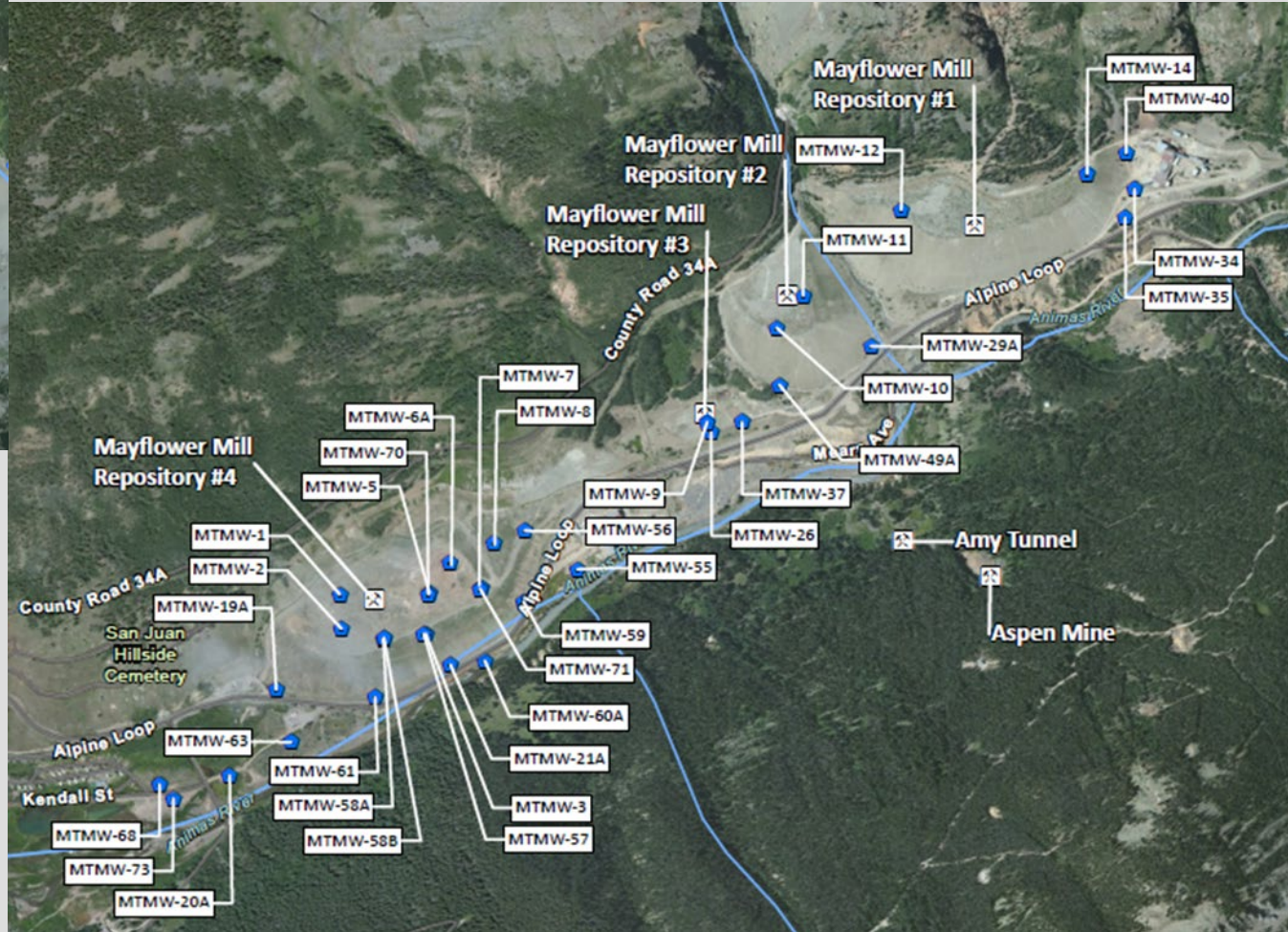
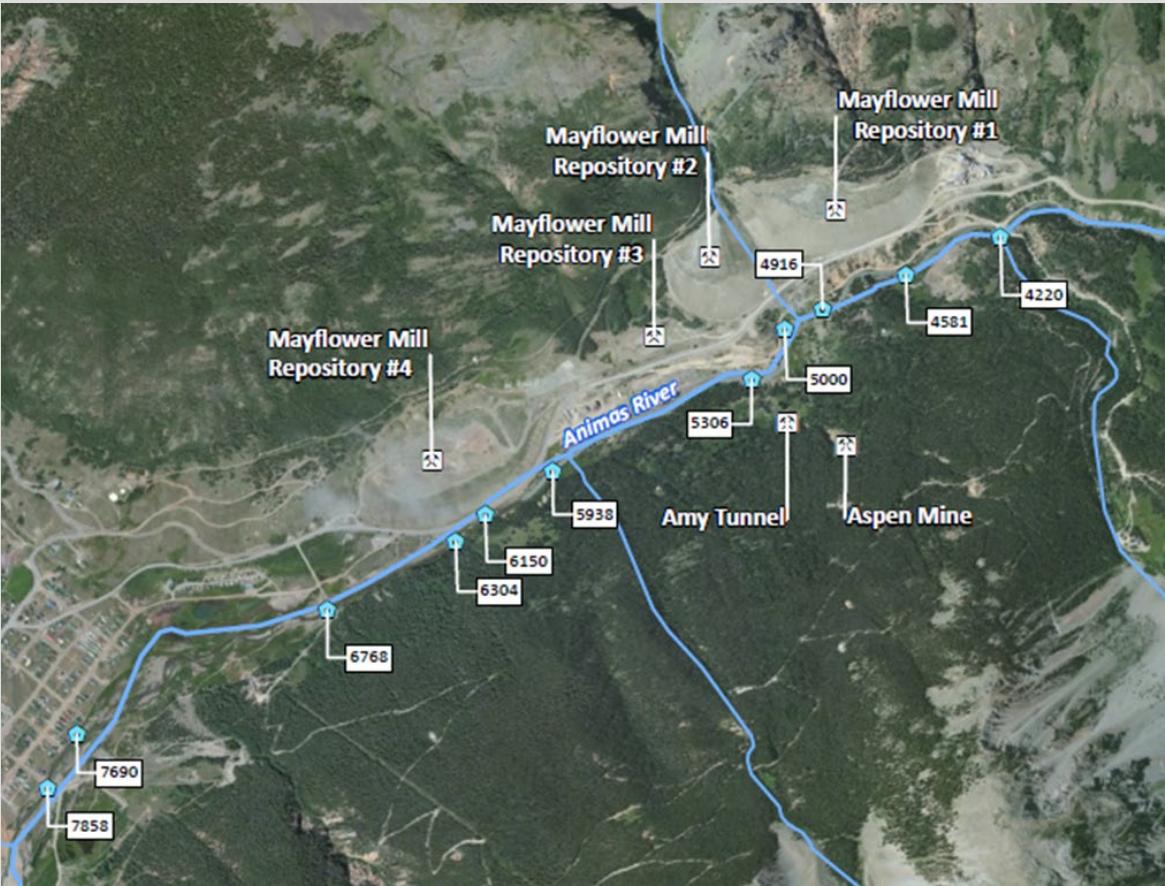
Howardsville Tailings

Upper Animas Investigations

- Completed long-term monitoring of groundwater and surface water



OU2 – Mayflower Tailings



- DOJ settlement with Sunnyside Gold Corporation.
- EPA took over and completing Remedial Investigation at OU2.
- Groundwater well and surface water samples collected in April and Oct. 2022.

Annual Bulkhead Inspections

- In August 2022, EPA, State, and contractors completed inspections at:
 - Red and Bonita Mine
 - American Tunnel
 - Gold King Mine
 - Mogul Mine
 - Terry Tunnel
 - Koehler Tunnel



Red and Bonita Bulkhead

Response Actions

EPA response to Cement Creek water discoloration in February 2022:

- Alert notifications
- Site inspections
- Sampling and analysis
- Data package



Cement Creek ice dam surface water monitoring locations

Gladstone Interim Water Treatment Plant

- Treated Gold King Mine discharge, producing water with <1 NTU throughout the year
- Completed Gold King Mine conveyance maintenance
- On-going operations and maintenance



Continued implementation of 2019 IROD

Interim Actions:

- **Work Plans:** Frisco-Bagley, Yukon Tunnel Design, Tom Moore
- **Anglo Saxon Mine:** Conveyance channel enlarged
- **Yukon Tunnel:** Portal repair completed
- **Bandora Mine:** Liners tucked into pond border, perimeter covered in rock, spillways armored
- **Terry Tunnel:** Settling pond, revegetation



Continued implementation of 2019 IROD (cont'd)

Interim Actions:

- **Columbus:** Work plan finalized
- **Frisco Bagley, Tom Moore:** Work plans finalized, acquired access
- **Pride of the West Mine:** Acquired access and completed mine portal MIW discharges
- **Sunbank Group Mine:** Setting ponds and adit channel improved, area reseeded
- **Silver Wing:** Construction completed, settling pond relined, new adit channel added, area reseeded



Settling Pond at Silver Wing Mine



Silver Wing Mine before Work Began

Continued implementation of 2019 IROD (cont'd)

Interim Actions:

- **North Star:** Reclamation work and conveyance channel and portal repair completed (not on NPL or IROD but similar work)



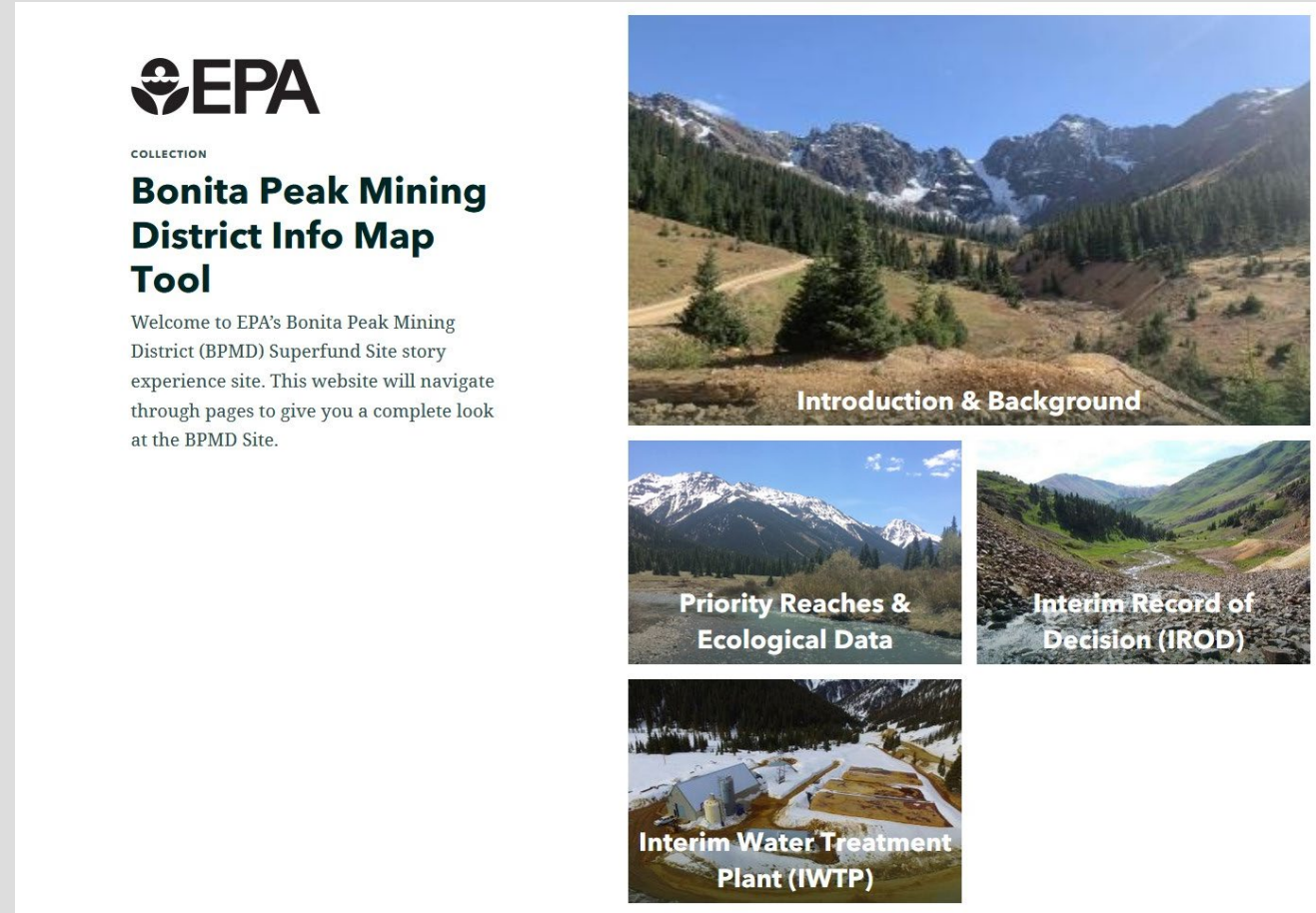
North Star Mine from US-550



North Star Mine Settling Ponds

Data Management & Communication

- Scribe data on WQX
- Continued the streamlined consent for access (CFA) process from 2020
- Annual update to Data Management Plan
- Used StoryMap to share site information with new personnel and stakeholders



BPMD Story Map

Community Involvement

- **Stakeholder engagement**
 - Monthly meetings with BPMD Community Advisory Group, Silverton Planning Group, Southern Ute Indian Tribe
 - Year in Review Presentations
 - 2022 BPMD Superfund site planned priorities
 - Response actions updates
- **Virtual Public Meeting: Sunnyside Gold Consent Decree**
- **Site Newsletters & Factsheets**



Bonita Peak Mining District Update
July 2022

100012177

 **EPA** United States Environmental Protection Agency

 **FOREST SERVICE UAS** U.S. Department of Agriculture

 **COLORADO** Department of Public Health & Environment



<http://www.epa.gov/superfund/bonita-peak>

Site Updates

North Star Removal Action

The EPA Superfund Removal Program is working at the North Star Mine. Currently, crews are removing waste rock from Mineral Creek and creating a mine discharge diversion channel near the top of the waste pile. Future plans include adding lime and other amendments to the top of the waste rock pile before revegetating. The side slopes will remain uncovered to preserve the historic feel of the area. Work has been underway since late June (anticipated completion - early August). For additional information please visit the [Removal website](#).



Crews removing waste rock from Mineral Creek – North Star Mine.

Terry Tunnel

2019 IROD work was completed at the Terry Tunnel in June. The adit discharge channel seen in the bottom right-hand side of the photo (left image) includes a small settling pond to reduce discoloration of water. Revegetation via hydroseeding is planned for late Fall.



View of Terry Tunnel from CR-25 looking south.

Mammoth Tunnel

The EPA completed construction of a second concrete cloth channel from the upper to the lower pond at Mammoth Tunnel last month. The concrete was stained to match the surrounding environment, and this month crews cut the adit discharge into the new channel. The adit discharge continues to infiltrate through the pond with no new daylighting or seepage.



Mammoth Tunnel waste pile showing completed concrete cloth channel.

State of Colorado 2022



COLORADO

**Hazardous Materials
& Waste Management Division**

Department of Public Health & Environment



COLORADO

**Division of Reclamation,
Mining and Safety**

Department of Natural Resources

- Pride of the West Mine site – IROD RA work completed
- Frisco Bagley emergency repair work to trespass damage
- Goals 2 & 3 Data Sampling Activities Report
- Bulkhead Inspections
- Campground 4 – IROD RA work completed
- Amy Tunnel and Legal Tender Tunnel Treatability Study Pilots installed and monitoring ongoing for 2 years



Campground 4



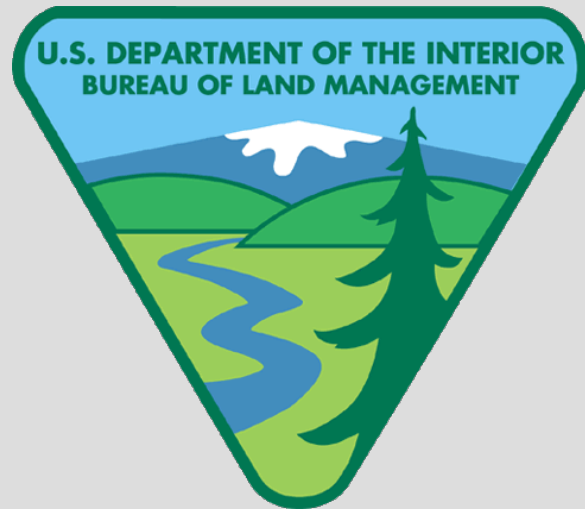
US Forest Service 2022



- On-going coordination on Watershed Restoration Action Plan
- Aerial Electromagnetic/Magnetotelluric Survey
- USACE RAMS
- Participation in Long Term Monitoring
- North Star Borrow area coordination
- Mineral Creek Watershed assessment on-going



Bureau of Land Management 2022



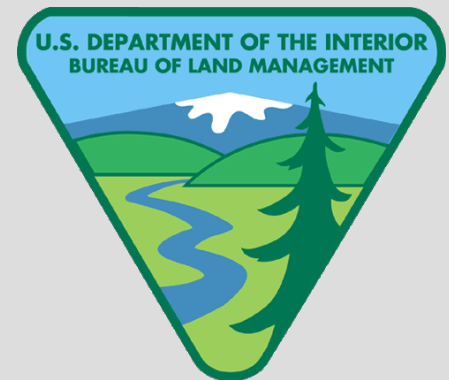
- Midway Interim Action - Eureka Gulch
- Cal Gulch re-vegetation
- Lewis Lake and Mayday re-vegetation
- Wyoming maintenance work (Hinsdale County)





Eureka Gulch – Midway Project Location

PROJECT LOCATION

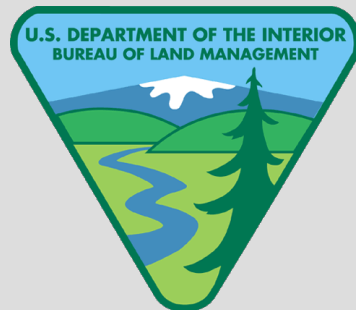




Before



After



WCA

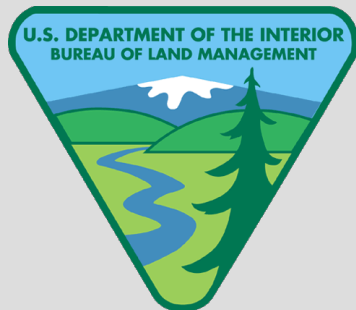




Creek Crossing



Gate



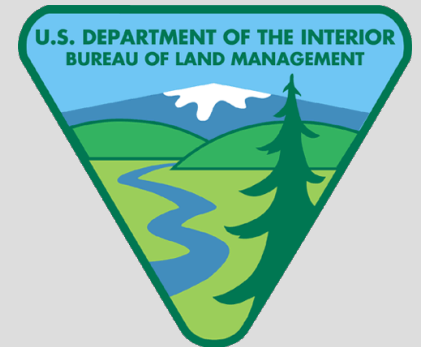
Red Willow #2



Placer Gulch Revegetation: Sunbank Group



Lewis Lake and Mayday Revegetation



2023 PLANNED WORK



EPA 2023 Planned Priorities

Repository

- Repository Fact Sheet and Community Outreach
- Begin Phase I Repository Construction in Spring
- Independent Dust Monitoring

Continue operations at **Gladstone Interim Water Treatment Plant**



Mayflower Impoundment #4

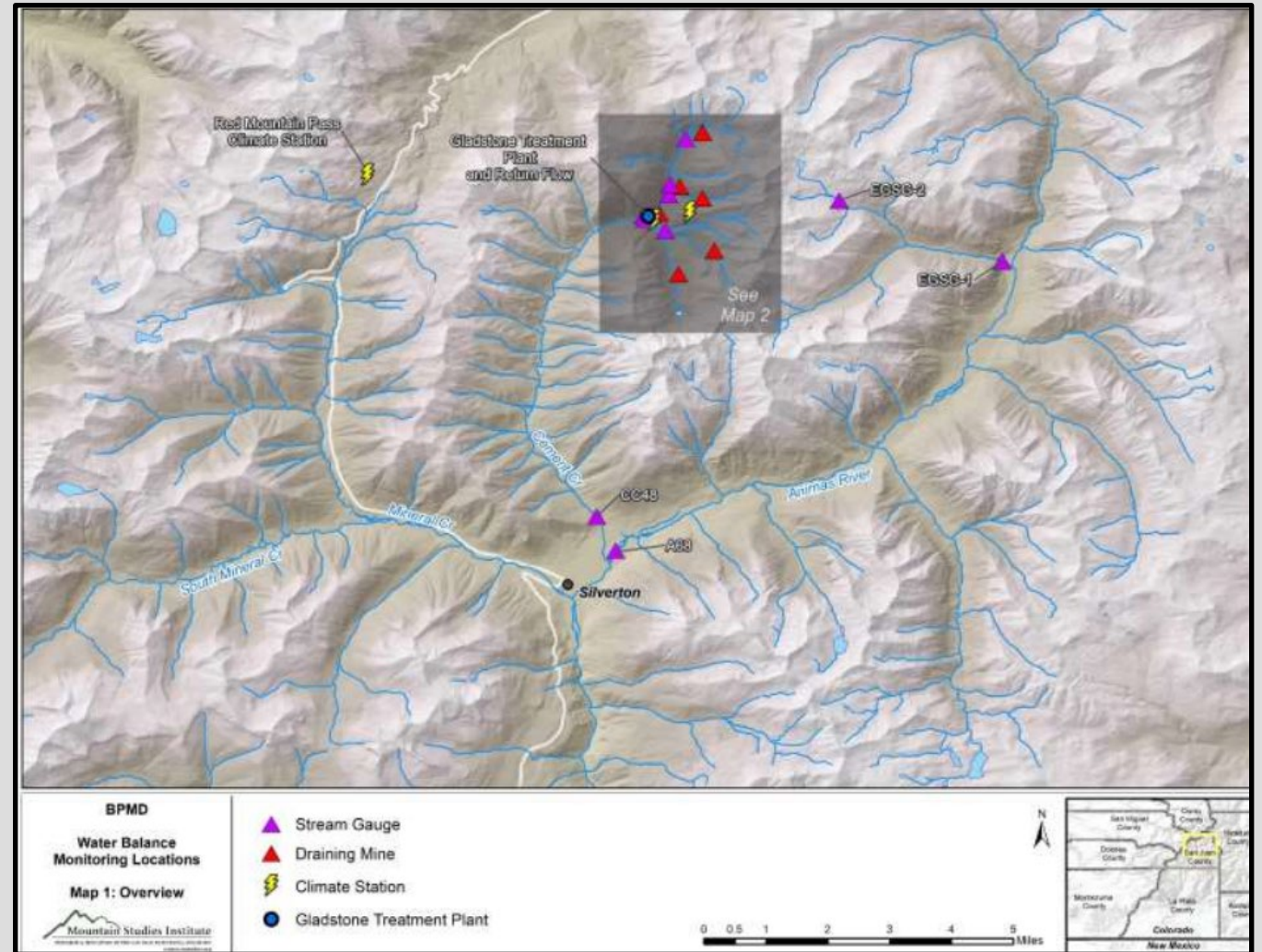


Gladstone Interim Water Treatment Plant

EPA 2023 Planned Priorities

Groundwater System (OU3) Remedial Investigations

- 3 Sunnyside Mine Pool Wells at Lake Emma
- Bench Scale Passive Treatment – Mogul
- Monitor Existing Wells
- RI/FFS Work Plan - Active Treatment



Site map of stream gages, draining mines, and weather stations



EPA 2023 Planned Priorities

Mayflower Tailings (OU2) Remedial Investigations

- Semiannual Sampling
- Update Conceptual Site Model
- Infiltration Study
- Soil Evaluation (Mayflower Mill, Red Seep, Boulder Creek, Industrial Park, and Polar Star Tailings)
- Plan and Install Groundwater Wells



EPA 2023 Planned Priorities

Continue remedial investigation within OU1

- Focusing on Howardsville, Eureka, and Kittimac, including stabilization/solidification of Howardsville Tailings

Goals 2/3 Evaluation

- Stability and Unplanned Release Prioritization Technical Memorandum
- Pilot Test on Surface Coating Waste Rock

Source Area Partial Deletion Planning

- Source Area Partial Deletion Prioritization Work Plan



Howardsville Remedial Investigations, 2022

EPA 2023 Planned Priorities

2019 IROD Response Actions

- Mammoth Tunnel lower pond expansion/monitoring and Wrap-up
- Transfer Completed Sites to CDPHE for O&M
- 2020/2021/2022 Construction Summary Reporting (CDPHE/DRMS)
- 2020/2021/2022 Construction Summary Reporting (Removal)
- Effectiveness monitoring/reporting



Mammoth Tunnel

Planned 2023 2019 IROD Actions Requiring Interagency Coordination

Source Area	Coordinating Agencies
Brooklyn Site	USFS
Mammoth Tunnel pond expansion	BLM
Tom Moore	CDPHE
Frisco Bagley	CDPHE
Grand Mogul	CDPHE/DRMS/BLM
Columbus Mine	CDPHE/DRMS
Vermillion Mine	CDPHE/DRMS
Mountain Queen	CDPHE/DRMS



Mammoth Ponds

EPA 2023 Planned Priorities

Potential Removal Actions (not finalized)

- Anglo/Saxon crib wall evaluation
- Gold King Mine portal and road stabilization
- Bandora monitoring well
- Red and Bonita portal assessment
- Mammoth Pond
- Campgrounds 2 & 3

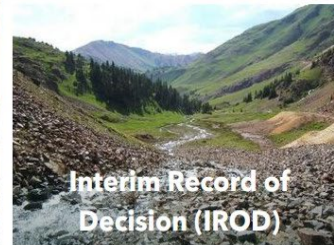
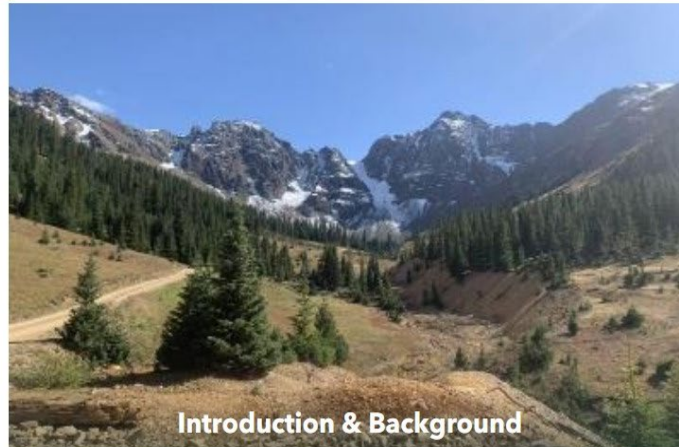




COLLECTION

Bonita Peak Mining District Info Map Tool

Welcome to EPA's Bonita Peak Mining District (BPMD) Superfund Site story experience site. This website will navigate through pages to give you a complete look at the BPMD Site.



EPA Planned Priorities

Data Management

- Maintaining Access Agreements
- Update Data Management Plan (DMP)
- Update Quality Assurance Project Plan (QAPP)
- Scribe/WQX databases
- Surface Water Loading Tool Updates

EPA Planned Priorities

Community Involvement

- Active Treatment Workshop
- Community Meetings on Repository Construction
- Site Tours
- Routine public meetings with CAG and SPG
- Factsheets
- Newsletters



State of Colorado 2023



COLORADO

**Hazardous Materials
& Waste Management Division**

Department of Public Health & Environment



COLORADO

**Division of Reclamation,
Mining and Safety**

Department of Natural Resources

Continued support on Bonita Peak Repository

- Phase 1 design, interim remedial action, and borrow source investigations

Construction

- IROD RA: Tom Moore, Frisco Bagley, Vermillion, Grand Mogul, Columbus, Mountain Queen

Other

- Goals 2 & 3
- Bulkhead Inspections
- Silver Wing Bulkhead Feasibility Study
- Silverton Miners Oral History Project
- Frisco Bagley Mill Coordination for Preservation



US Forest Service 2023

- Brooklyn site – sediment pond reclamation, level one waste rock consolidation area



Bureau of Land Management 2023



- Lark repository reconnaissance
- 2019 IROD – Mammoth
- O&M at Joe/John
- Wynona – Box Removal and Fe Terrace
- Forest Queen road
- Cal Gulch (Vermillion Tunnel)
- BIL projects (Animas Forks/Palmetto Gulch)
- Red-Cloud safety closures with DRMS
- Grand Mogul Possible investigation work
- On-going monitoring of Sunbank, Mayday, Lewis Lake, and Midway wetlands



Get Involved!

BPMD Community Advisory Group (CAG) Website:

<https://www.bonitapeakcag.org/>

Visit the BPMD Superfund Site Website:

<http://epa.gov/superfund/bonita-peak>

BPMD StoryMap:

<https://storymaps.arcgis.com/collections/e34d136ea58242f68ec12bd2a04acf8c>

BPMD Contacts

Community Involvement Coordinator
Meg Broughton

broughton.Meg@epa.gov



THANK YOU!

www.epa.gov/superfund/bonita-peak

Questions?

