



MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

McLaren Tailings Abandoned Mine Site

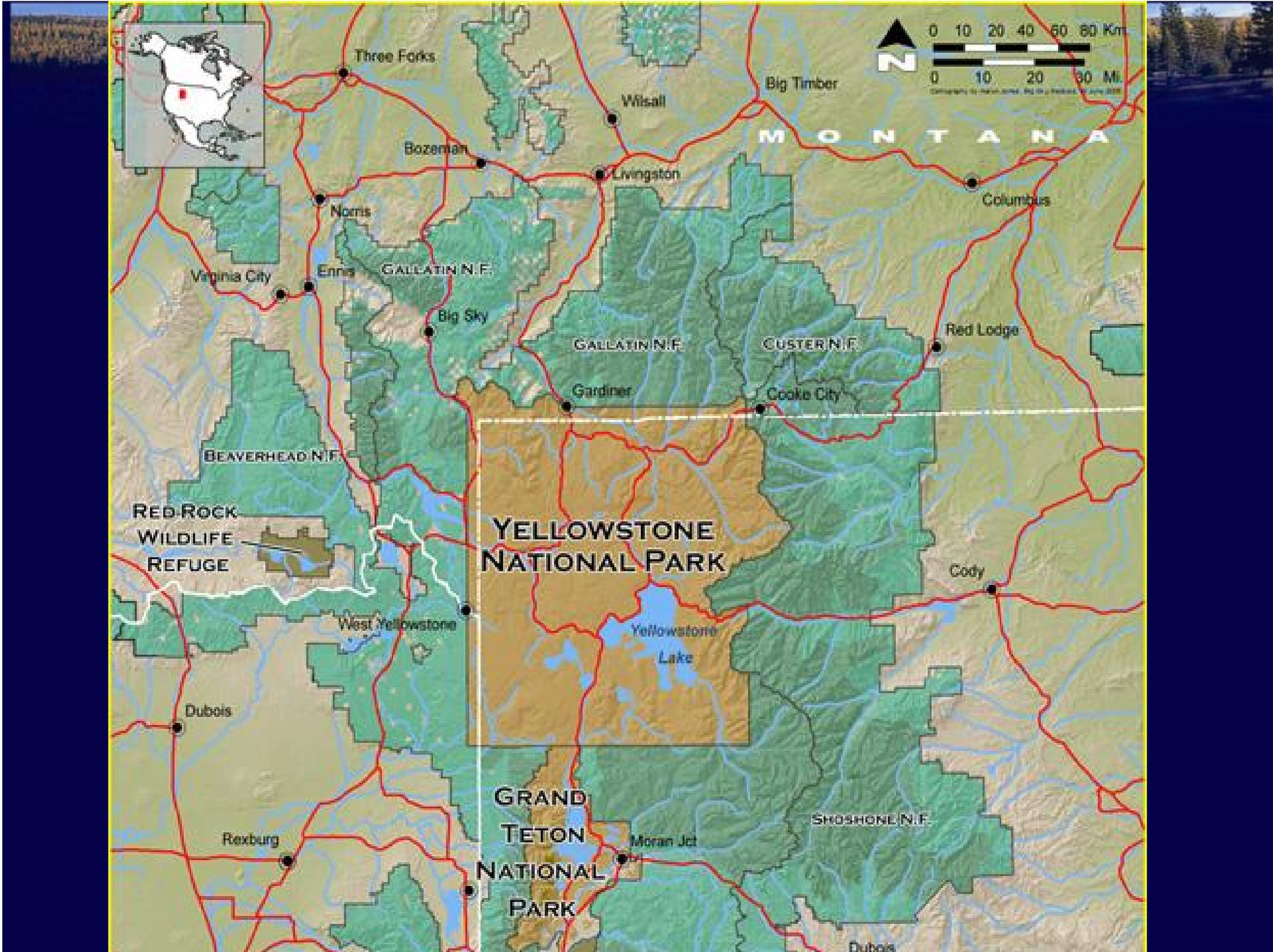
**RECLAMATION ACTIONS
THE GOOD THE BAD AND THE UGLY**

JOHN KOERTH

Montana Department of Environmental Quality

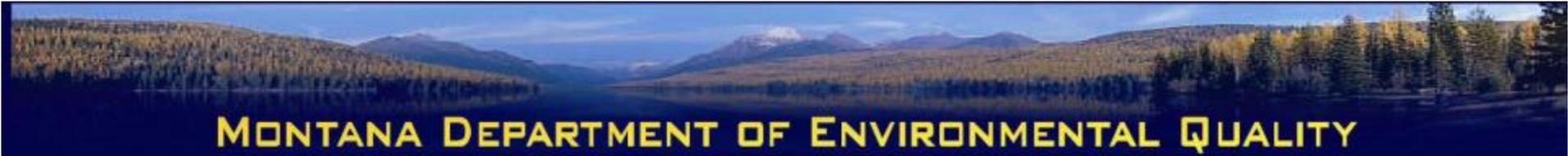
jkoerth@mt.gov











MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY















Mill Tailings



MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Types of Wastes

Approximately 237,000 cubic yards of mill tailings, waste rock, and contaminated sediments



<u>Waste</u>	<u>Cubic Yards</u>
Tailings	196,494
Waste Rock	23,296
Sediments	17,198
Total	236,988

Repository Capacity

- Repository design capacity of 196,000 cubic yards limited by:
 - property boundaries
 - topography and bedrock outcrops
 - Soda Butte Creek slope: seismic analysis
 - adequate separation from groundwater
 - friction angle on liner
- Calculated waste volume (no swell) of 237,000 cubic yards

Proposal to Haul Excess Tailings

- Haul 68,700 tons of lime stabilized tailings for processing at Barrick Golden Sunlight Mine in 2011.
- Mine located in Whitehall, MT
- Cooke City to Whitehall is a 315 mile one way trip using Chief Joseph Highway
- Anticipated break even at \$1,368 gold price

Hauling and Reprocessing

Advantages

- Reduction of long-term liabilities associated with repository stability during earthquakes, and metals leaching to groundwater
- Removal of significant quantity of mine wastes from boundary of Yellowstone National Park
- Reduction in repository visibility
- Economical at current gold prices
- Additional job & tax creation associated with hauling
- Stakeholder support

Disadvantages

- Traffic risk associated with offsite hauling of tailings
- Increased highway wear
- Uncertainty in future gold prices
- Gold economics/recovery outside of DEQ project experience
- Relationship with DEQ-regulated facility
- Liability concerns



2011 Hauling Summary

- Addresses excess waste issue
- Reduction of liabilities associated with repository stability
- Removal of significant quantity of mine wastes from boundary of Yellowstone National Park
- Subsidized by recovered gold value
- Additional job and tax creation associated with hauling activity

Potential Haul Routes

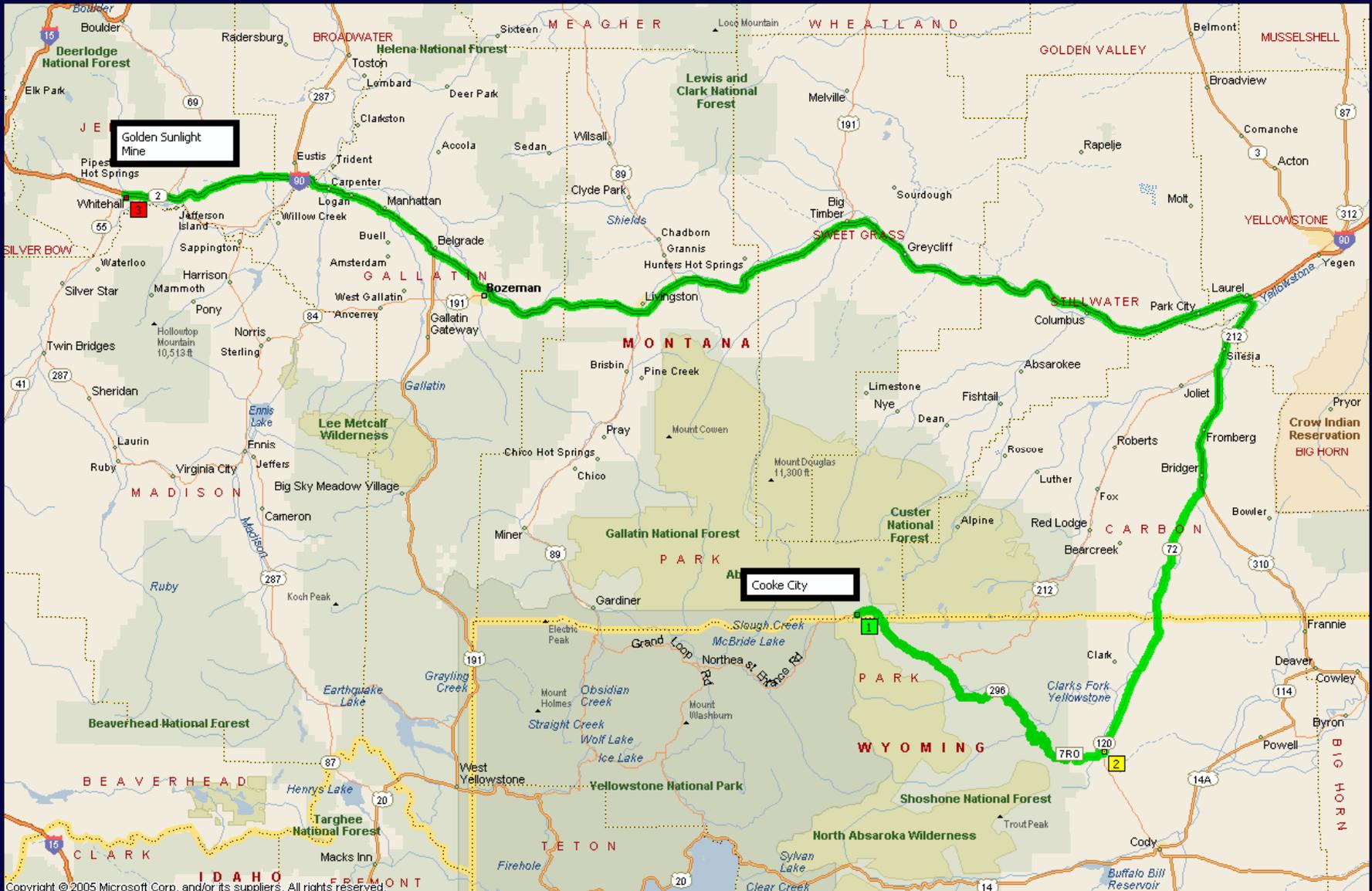
- Yellowstone National Park to Gardiner and Livingston, MT
- US 212 : Beartooth Highway to Red Lodge and Laurel, MT
- US 212 to Chief Joseph Highway, to Bridger, Laurel and Whitehall via I90.

Beartooth Highway Restrictions

**VEHICLES OVER
40 FEET LONG
NOT ADVISED ON
US 212 EAST**

09

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY



Existing Road Use



October 14, 2010

Haul Truck Configuration



October 15, 2010

Proposed 2011 Haul Schedule

- 2011 start date coordinated with WYDOT
- Approximately 24 trucks per day, with 30 minute spacing
- Total of approximately 1700 loaded trips
- Monday through Friday hauling
- No weekend or holiday hauling
- Concludes in September 2011





New Piezometer PZ-9



2011/06/20

Repository Floor: June 30, 2011



2011/06/30

Unstabilized Tailings



Lime stabilized tailings



Stabilized Tailings: July 20, 2011





08/09/2012



06/25/2013

After Construction Dewatering

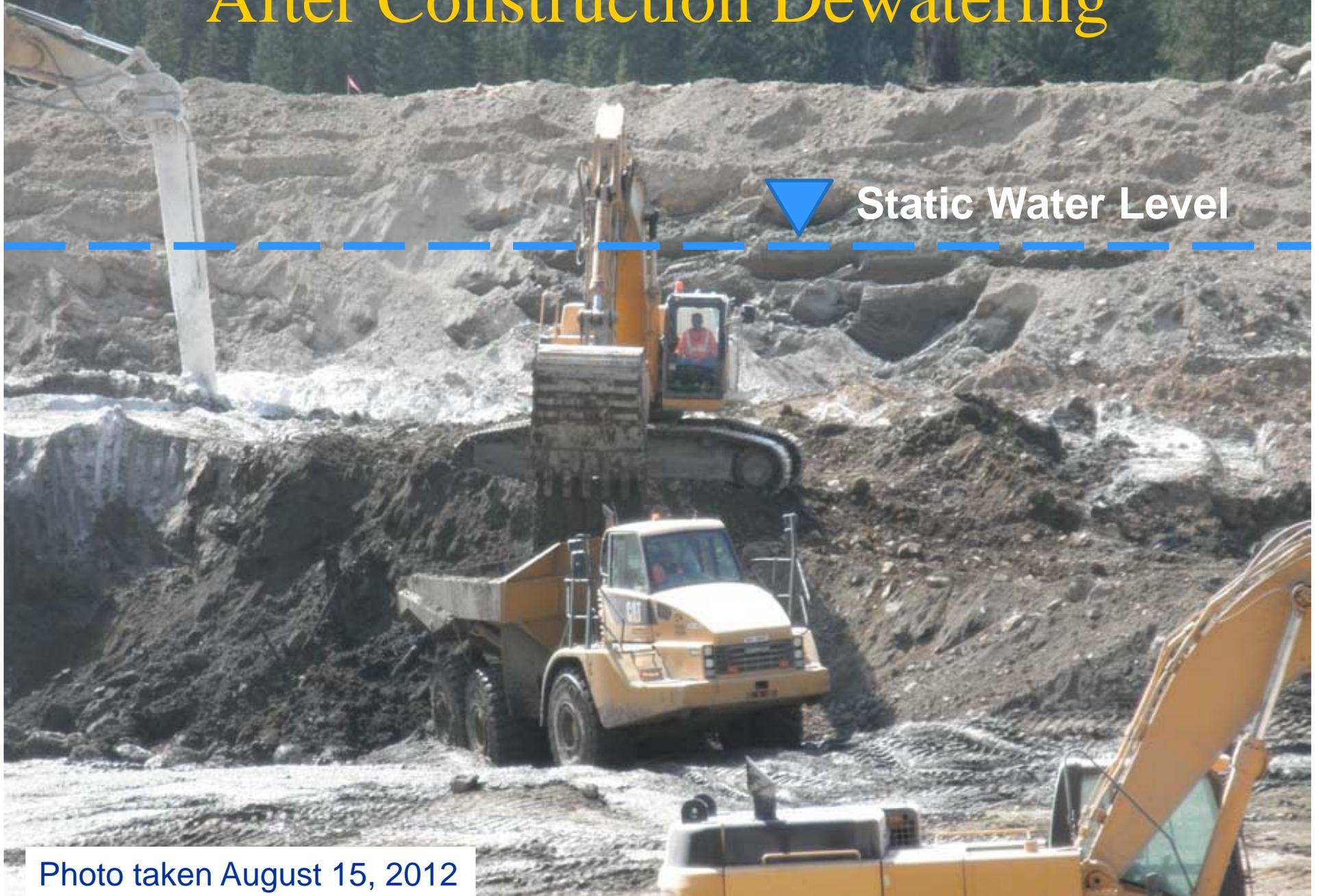


Photo taken August 15, 2012



2013/09/12

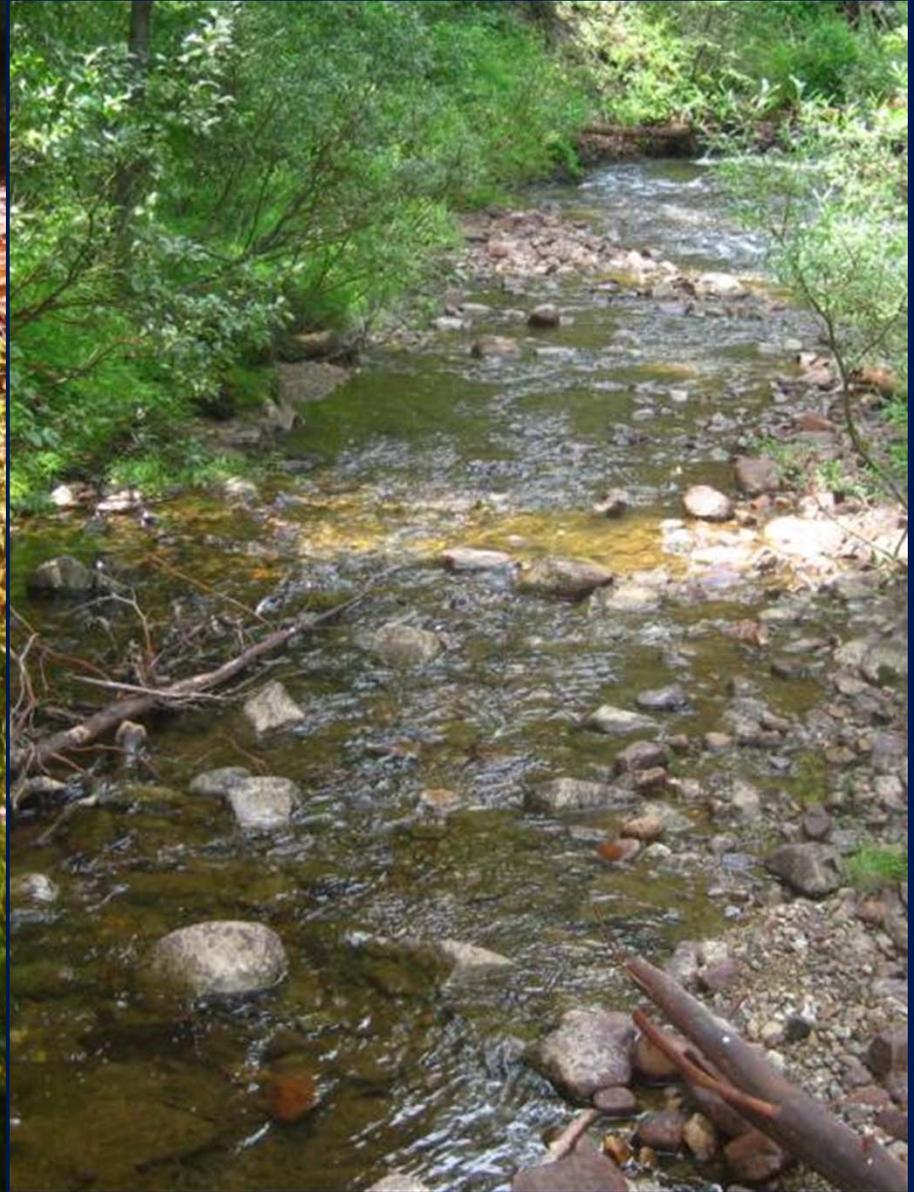


REPOSITORY CHARACTERIZATION
30,000 oz/GOLD 100,000 oz/SILVER

Soda Butte Creek



2008



2013