

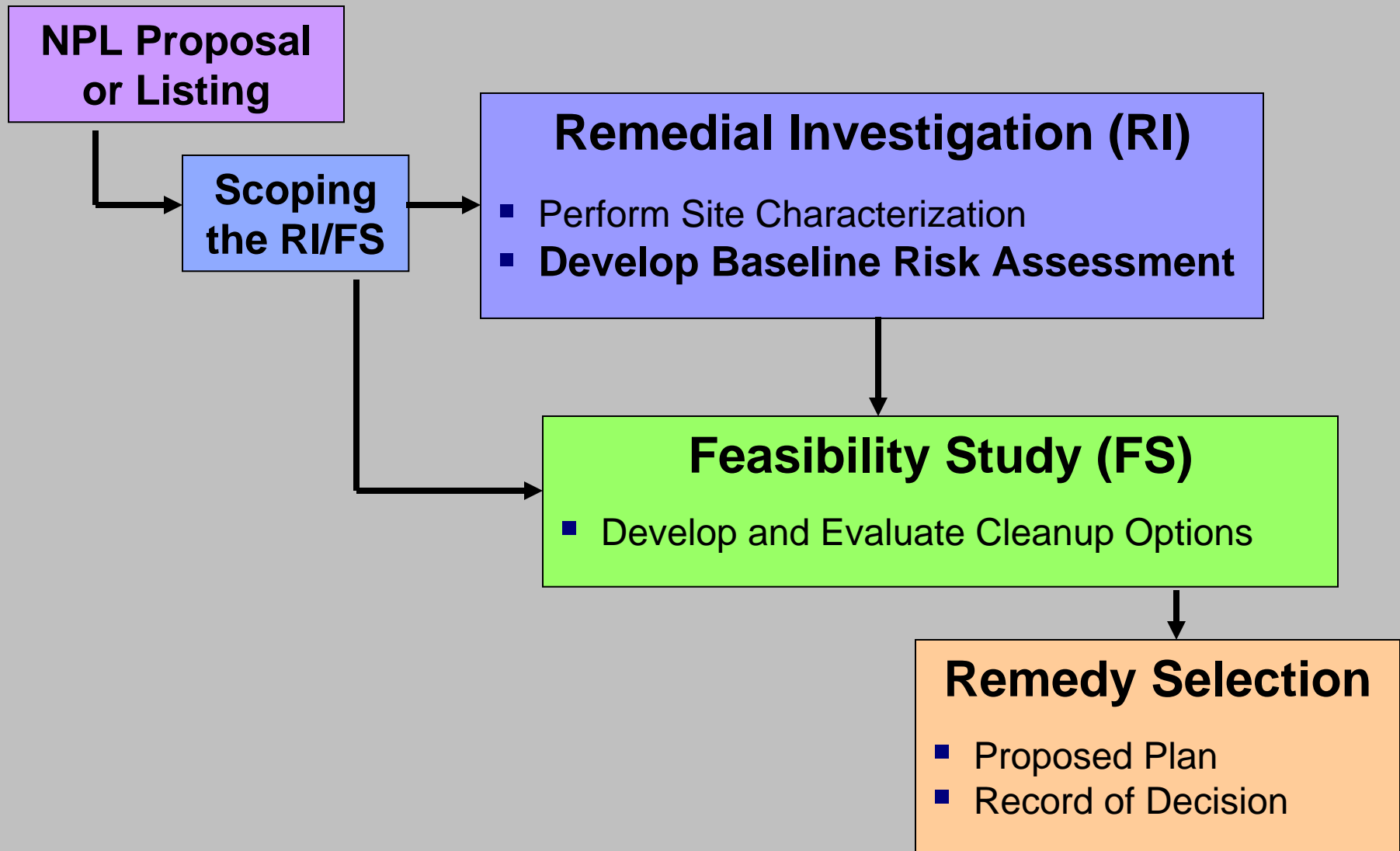


Results of EPA's Risk Assessment for the Molycorp Site

August 23, 2007



The Superfund RI/FS Process



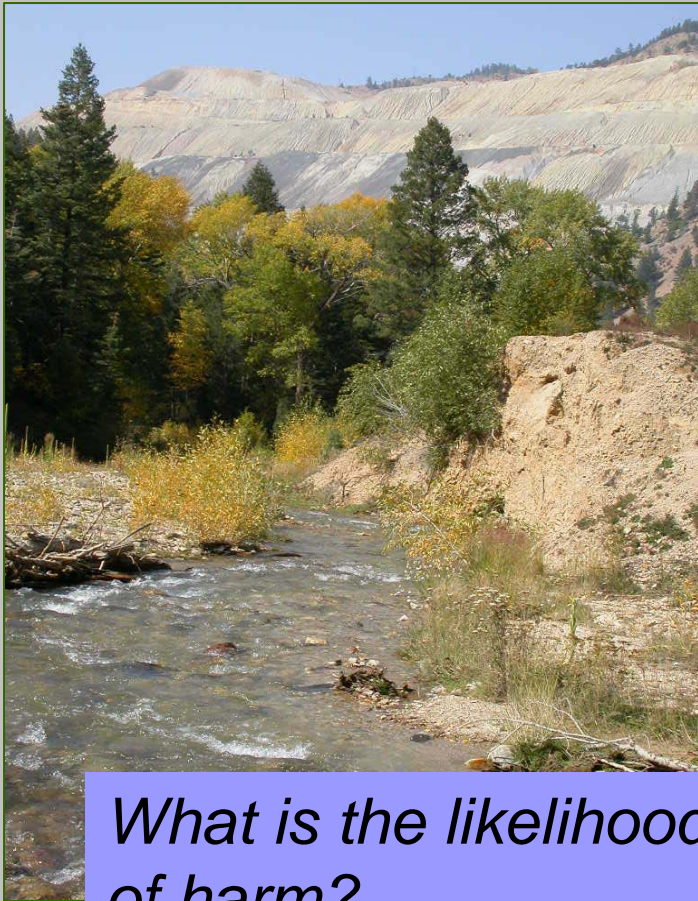
Why was the risk assessment done?

- To evaluate potential risks to human health, welfare, and the environment from the Molycorp Site
- Part of the extensive Remedial Investigation (RI)
- Provides the basis for evaluating cleanup needs



Nearly 9,000 biological, sediment, soil, and water samples were taken

What questions will the risk assessment address?



What is the likelihood of harm?

- Who or what is potentially exposed?
- How could people, animals or plants be exposed?
- What chemicals?
- What areas?
- How much?
- What health effects or harm might result?

What the risk assessment will not answer:

- Past exposure
- Risks to individuals
- Other sources of exposure



How does the risk assessment address exposure?

- Considers current and potential future users
- Considers how people, animals or plants could *possibly* (not *probably*) be exposed



For example, it assumes that children swallow a mouthful of water while playing in the river or ponds.

Who are the current and future users?

Current & future:

- Recreational users
- School children
- Fishermen
- Off-site residents
- Plants and animals



Future only:

- Potential on-site residents
- Potential non-mine workers



What chemicals were evaluated?

- Samples were analyzed for hundreds of chemicals:
 - Inorganic constituents
 - Metals (for example, molybdenum, lead, arsenic)
 - Sulfate
 - Fluoride
 - Uranium
 - Organic compounds
 - PCBs
 - Dioxins
 - Explosives
 - Fuels & oils
 - Pesticides



What was sampled?

Human health:

- Soil
- Surface water
- Sediment
- Ground water
- Storm water catchments
- Seeps and springs
- Air
- Drinking water (tap)
- Home grown produce
- Wild edible plants
- Trout



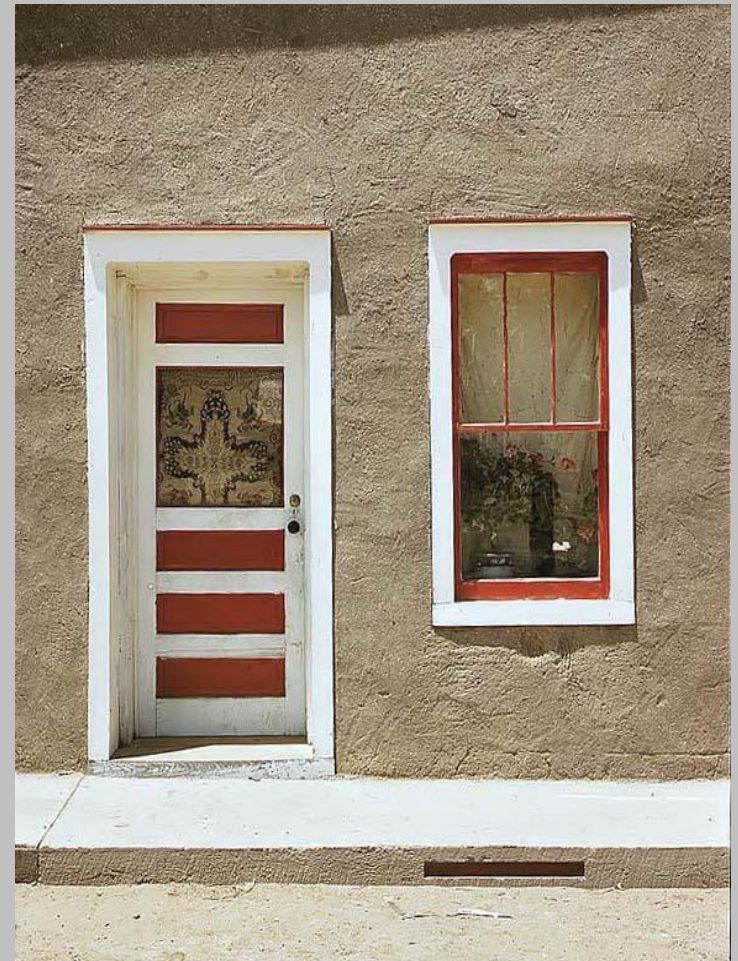
What was sampled?

Ecological:

- Soil
- Surface water
- Sediment
- Storm water catchments
- Seeps and springs
- Plants
- Small mammals (mice)
- Fish
- Invertebrates (bugs)



What longstanding community concerns have been investigated?



Is the dust from the Tailing Facility harmful?



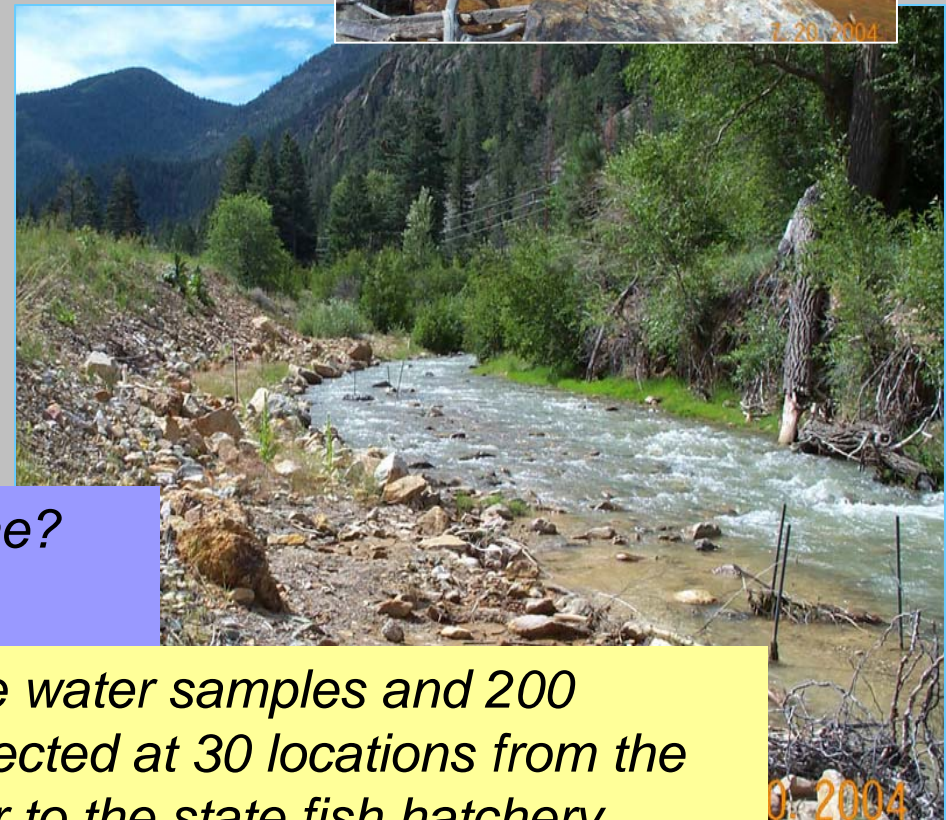
Air monitoring was performed for particulates at key locations downwind of the Facility over several years

Are the fish safe to eat?



Over 100 fish tissue samples were collected from the river and lakes for testing

Is the Red River contaminated?

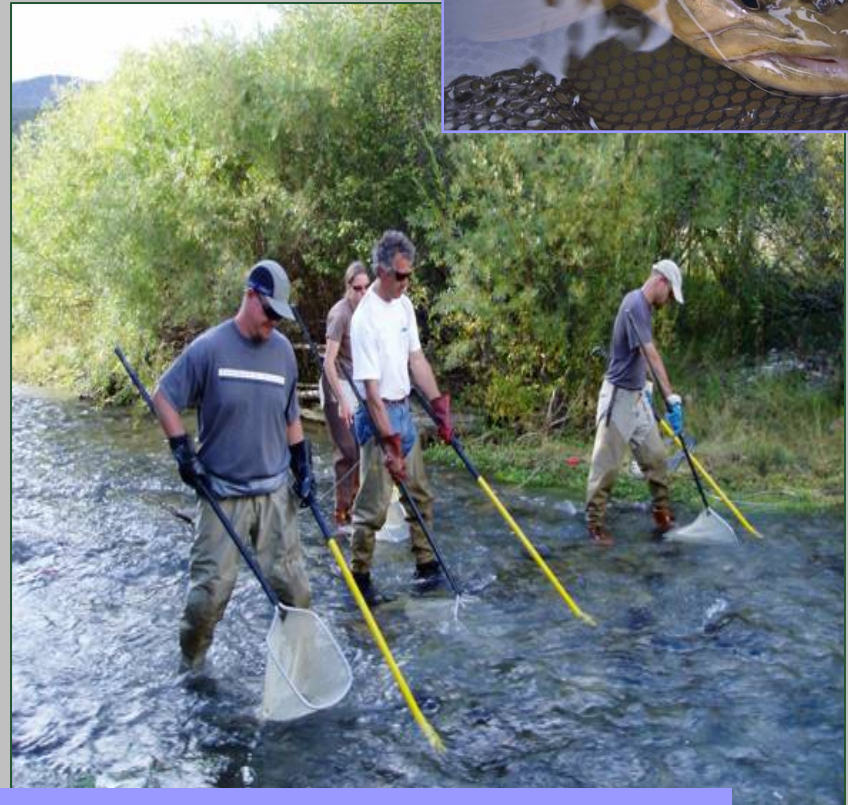


*Is the yellow water from the mine?
Is it toxic to fish?*

Approximately 1,000 surface water samples and 200 sediment samples were collected at 30 locations from the headwaters of the Red River to the state fish hatchery

This includes sampling during storm events

Why are there so few fish in the river?



Fish populations, fish habitat, and aquatic insect populations were measured from the headwaters of the Red River to the state fish hatchery

Is it safe for kids to swim in the lakes or play in the stream?

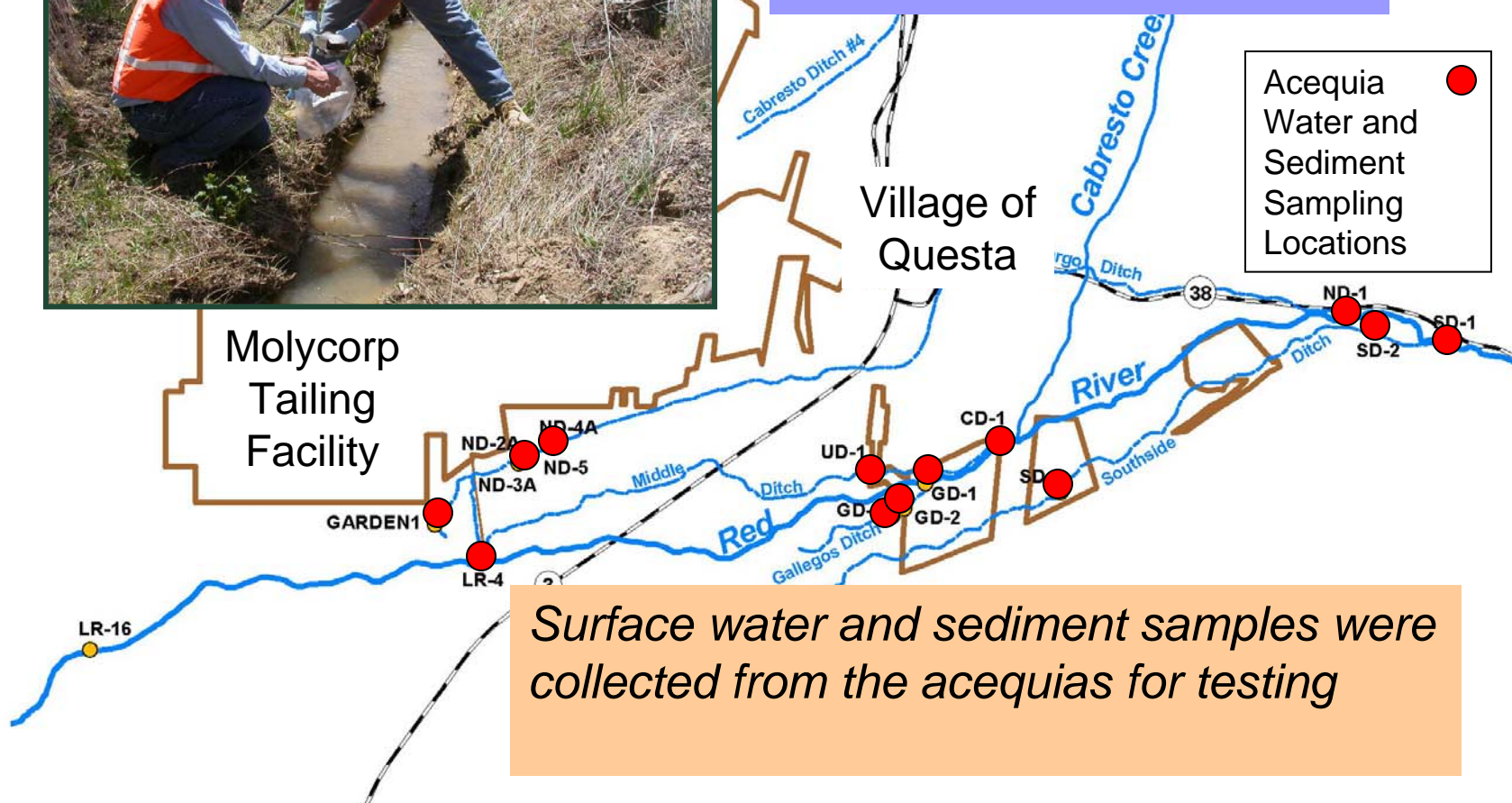


Sediment and surface water samples were collected from Eagle Rock Lake and Hunt's Pond, in addition to the Red River

What about the acequias?

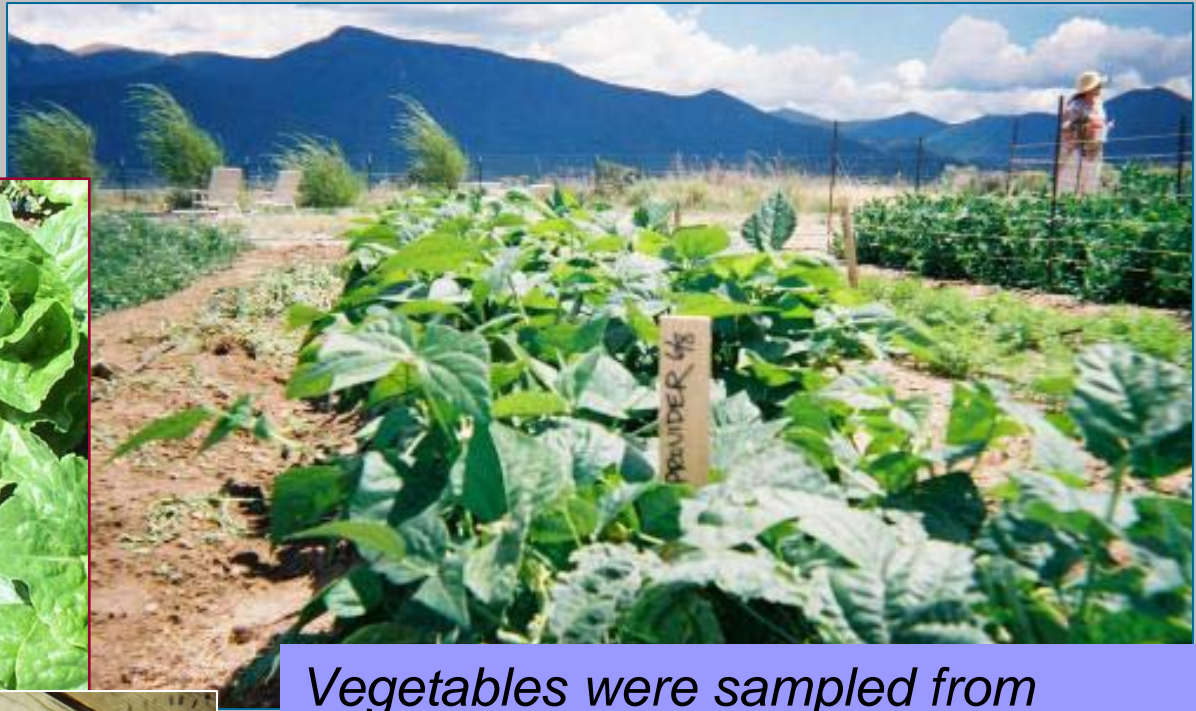


Is the acequia water safe to use?



Surface water and sediment samples were collected from the acequias for testing

Are my garden vegetables safe to eat?



Vegetables were sampled from resident's gardens at key locations downwind of the Tailing Facility

Why have some cows become sick?



Soil, vegetation and ground water were tested in the valley south of the Tailing Facility

Is the water in my home safe to drink?

A concern was raised about tailing material being used as bedding for water pipes



Tap water samples were tested by EPA and the state at the request of several residents

Are tailings from historical spills potentially harmful to me and my family?



An extensive investigation was performed to visually locate and test historical tailing spills along the Red River and in Questa

**Is my private
water well safe to
use?**

**Is the ground
water beneath my
property
contaminated?**



*Several years of ground water
data were collected at the
Tailing Facility and Mine site*

*Several private wells located within a mile of
the Tailing Facility were tested by EPA*

What were the results of the risk assessment?



What problems or health risks were identified?

What did the Human Health Risk Assessment find for the Mine site?

■ Mill Area Soil

- PCBs and molybdenum
 - May pose a health risk to hypothetical residents if swallowed over a long period of time



What did the Human Health Risk Assessment find for the Mine site? (cont'd)

■ Ground Water

- Unsuitable for drinking water purposes (at many locations)

■ Other Mine Areas

- Water in catchment basins and seeps
 - Metals (cadmium, beryllium and manganese) could pose a risk to hypothetical recreational users



What did the risk assessment find for the Tailing Facility?

- Only area of concern for human health:
 - Some *ground water* at and near the Tailing Facility is unsuitable for drinking water purposes
- No significant risk from soil



What did the risk assessment find for other areas?

■ Questa School

- Computer modeling showed no significant risk from inhalation of airborne dust during the study
- Several years of air monitoring data support this finding

■ Other Findings

- Wild edible vegetation and home grown vegetables are safe to eat
- Trout are safe to eat
- Acequia water and sediment do not appear to be affected by mining



What did the Human Health Risk Assessment conclude?

- **Potential risk to:**
 - Hypothetical Residents at the Mill Area
 - Hypothetical recreational users of some surface water at the Mine Site

We don't anticipate any of these uses now, while the mine is operating.



What did the Human Health Risk Assessment conclude (cont'd)?



■ Ground Water

- Some ground water at and in the vicinity of the Mine site and Tailing Facility is contaminated and unsuitable for drinking



What did the Ecological Risk Assessment find for the Mine Site?

■ Soil

- Elevated molybdenum levels in Mine site soil is potentially harmful to plants

■ Riparian Soil

- Elevated molybdenum levels in soil along river bank may harm cattle (and possibly sheep) by causing ***molybdenosis***, especially in areas with historical tailing spills



What did the Ecological Risk Assessment find for the Tailing Facility?

■ Soil

- Molybdenum levels in soil are potentially harmful to plants at the Tailing Facility and in the valley south of the Tailing Facility

■ Riparian Soil

- Molybdenum levels in soil along river bank are potentially harmful to plants, especially areas with historical tailing spills



*Molybdenum may cause **Molybdenosis** in cattle (and possibly sheep) grazing in these areas, but not deer and elk*

Are the Tailing Ponds an ecological concern?

- Pond water is toxic to the water flea (a standard test species used to evaluate water quality)
- Toxicity to fish was not measured (there were no fish in the ponds)
- Toxicity to waterfowl was not measured (none were observed)



Tailing ponds were not intended for aquatic life

What is the risk to aquatic life in the Red River?



- Sudden severe toxicity from ***storm events*** upstream of Mine site
- Sudden severe toxicity from ***spring water*** collected along Mine site
- Gradual long-term (chronic) toxicity from ***snow melt*** to bugs below Mine site
- Chronic toxicity from ***ground water*** contaminated with metals upwelling into river at Mine site and upstream of Mine site

What is the risk to aquatic life in the Red River (cont'd)?



- Brown Trout populations are greatly reduced at and upstream of Mine site*
- Copper and zinc levels in Brown Trout tissue are above threshold for fish health at and upstream of Mine site
- Aquatic insect populations are reduced in most of the studied areas*
- Intermittent toxicity shown for water flea throughout watershed, but no clear relation to source

* Compared to reference locations

Are the sediments of the Red River contaminated?



- Concentrations of metals in sediments are similar along Mine site and upstream of the Mine site
- Metals concentrations in Cabresto Creek are very low compared to anywhere in the Red River study area

What are the risks to aquatic life in the lakes and ponds?



Eagle Rock Lake

- Brown Trout, White Sucker and aquatic insect populations are reduced compared to Upper Fawn Lakes
- Concentrations of aluminum, cadmium, nickel and zinc are significantly higher in insect tissue
- Sediments are contaminated with several metals, including aluminum, manganese, nickel, and zinc



Rainbow Trout are stocked in Eagle Rock Lake by Fish Hatchery

What did the Ecological Risk Assessment conclude?

Potential risk to aquatic life in the Red River:

- Storms and snowmelt can wash substances from the upstream scars into the river that are harmful to fish
- Seep and spring water is harmful to fish
- Ground water upwelling into the river is harmful to fish
- Populations of resident trout and other aquatic organisms are scarce between towns of Red River and Questa



What did the Ecological Risk Assessment conclude (cont'd)?



Potential risk to:

- **Plants** at the Mine site, Tailing Facility, south of the Tailing Facility and riparian areas from soil contaminated with molybdenum
- **Aquatic life** at Eagle Rock Lake from sediments contaminated with metals from mining and non-mining sources

Next Steps

■ Complete the Feasibility Study (FS)

- Use risk assessment to determine areas to be considered for cleanup
- Develop cleanup objectives
- Develop and evaluate cleanup options

FS started in January 2007 and is scheduled for completion in Spring 2008

■ Prepare Proposed Plan

- Identifies EPA's preferred remedy
- Public comment period

■ Issue Record of Decision

ROD scheduled to be issued in Summer 2008



What upcoming Community Involvement activities are planned?

- Seek **community input** on cleanup options being considered
 - Place Draft Final FS Report in repository
- Release **Proposed Plan** following completion of FS and initiate **Public Comment Period**
- Discuss EPA's preferred cleanup option with community at **Public Meeting**
- Seek **community input** on proposed remedy



*EPA will prepare a **Responsiveness Summary** that responds to all written comments on the proposed remedy*

Community Involvement



EPA Goals:

- To keep you informed throughout the Superfund Process
- To provide opportunity for you to comment and provide input
- To help address community concerns related to the site

Your questions and feedback are important to us!