State of Utah Natural Resource Damage Trustee
Southwest Jordan Valley Groundwater Cleanup

Report to the Public

June 2004

Public comment has reshaped a plan to clean up sulfate-contaminated groundwater in the Southwest Jordan Valley area of Salt Lake County.

Last fall, the public provided feedback to the Natural Resource Damage (NRD) Trustee on a proposal by Kennecott and District to clean up contaminated groundwater and provide municipal-quality drinking water to the public in the Affected Area, including the communities of West Jordan, South Jordan, Riverton, and Herriman.

After considering feedback from the public and, later, from the Stakeholder Forum, the District and Kennecott revised the Proposal. Specifically,

- Zone B/Lost Use operations include revised options for managing reverse osmosis concentrates from water treatment, with
- No discharges to the Jordan River and associated wetlands.

New opportunities for public and scientific review include establishing a

- Stakeholder Forum, to facilitate review and discussion of issues concerning groundwater cleanup, and
- Selenium standard for the Great Salt Lake.

This fact sheet provides a general overview of the proposed changes and additional steps taken by the Trustee, Kennecott, and the District to address earlier comments. For details, visit our website at http://www.deq.utah.gov/issues/nrd

You are invited to review and comment on the revised Proposal and the revised implementing Agreements between Kennecott and the District, and among the State Trustee, Kennecott, and the District. These and other related documents are available on the website. Copies are also available at the DEQ offices, 168 North 1950 West in Salt Lake City, and the West Jordan City offices at 8000 South Redwood Road.

Who Is Involved and Why

In 1986, the State of Utah filed a Natural Resource Damage Claim against **Kennecott Utah Copper Corporation** (Kennecott) for groundwater damage in the southwest Jordan Valley area.

In 1995, the Court accepted a settlement agreement between the State of Utah, Kennecott, and Salt Lake Water Conservancy District, now the **Jordan Valley Water Conservancy District** (District), and issued a Consent Decree.

The Executive Director of the **Utah Department of Environmental Quality** (DEQ) is the Trustee and has the responsibility for approving the plan and releasing Trust Funds for the cleanup.

The joint proposal was presented to the Trustee by the District and Kennecott. The Consent Decree requires that Kennecott provide municipal-quality drinking water through a purveyor of M&I water. The District has agreed to work with Kennecott to distribute the water to the public in accordance with the Consent Decree.

Overview of Project

The project goal remains unchanged. Over the next 40 years, contaminated groundwater will be withdrawn from the principal aquifer and treated to provide municipal-quality drinking water to the public in the Affected Area. The project will also improve groundwater quality and prevent migration of contamination.

The project is divided into two zones:

The **Zone A** plume contains two types of contamination. The core is highly acidic and contains high levels of sulfate and heavy metals (Figure 1 - red area). The larger but less contaminated portion is impacted by sulfate (Figure 1 - orange, green, and blue areas). This plume's primary source was the historic Bingham Reservoir. Other sources included the uncontrolled release of water from the historic waste rock dumps on the eastern edge of the Oquirrh Mountains and other mining and non-mining activities.

The **Zone B** plume contains moderate levels of sulfate (Figure 1 - green and blue areas). Its primary source was the historic South Jordan Evaporation Ponds.

No Change for Zone A Operations The proposal for Zone A remains unchanged. Extraction from the acid core of the plume will continue. This water is not treated for drinking water but is used in Kennecott's operations. The water extracted from the sulfate-contaminated portion of the plume will be treated by reverse osmosis (RO). Two products will result from this process. One, municipal-quality drinking water, will be delivered to the District to make it available to the public in the Affected Area. The other, waste concentrate from RO treatment, will be transported through the Kennecott Tailings Pipeline to the Kennecott Tailings Impoundment.

Changes in Zone B/Lost Use (Shallow Aquifer) Operations The location of deep aquifer extraction wells has not changed. The rate of extraction of contamination may change. As originally proposed, the District will extract water from seven wells, pumping contaminated water from the deep (principal) aquifer with an extraction rate of 4300 – 4867 acre-feet per year (AFY). Five of the wells will be located in the area of 1300 West from approximately 90th to 114th South and two will be located in the area of 2700 West from approximately 100th to 110th South.

Up to four wells will be developed to remove shallow groundwater. These wells will be located west of the Jordan River between approximately 7800 South and 8100 South and will extract a total of 750 – 1400 AFY.

The revised Proposal provides three options for producing municipal-quality drinking water and managing RO concentrates from Zone B/Lost Use operations (Figures 2-4). The water extracted from Zone B will be piped to the Zone B RO treatment facility, located next to the District headquarters near 8200 South 1300 West in West Jordan.

Under the Integrated and Minimum Integrated Designs (Figures 2 and 3), water pulled from the shallow aquifer will not be processed using reverse osmosis. It will be sent to the District's treatment facility to be disinfected and filtered to remove any contaminants. It will then be blended with treated water from the deep aquifer, producing municipal-quality drinking water for the public in the Affected Area. RO concentrates will be sent to Kennecott's Tailings Impoundment via a pipeline constructed by the District. The pipeline will travel north along a corridor at roughly 1300 West from the treatment facility to 1300 South. There, it will continue northwest to the impoundment area.

Under the Separate Design (Figure 4), both Zone B contaminated water from the principal aquifer and water from the shallow aquifer will be treated using reverse osmosis. A decision to proceed with this option is dependent on the Great Salt Lake selenium studies concluding that this is an option that will not cause degradation to the Great Salt Lake and its surrounding environment.

No Impact to Jordan River and Associated Wetlands The District has withdrawn its permit to discharge waste concentrate from RO treatment to the Jordan River. Instead, the RO concentrates will be managed under one of the above-discussed options (Figures 2-4).

Selenium Standard for the Great Salt Lake The District has proposed working with agencies and interested parties to conduct a two-year scientific study on selenium in the Great Salt Lake. In coordination with local, state and federal agencies and stakeholders, the DEQ Division of Water Quality is initiating a program to establish a numeric selenium standard for the Great Salt Lake.

Discharges to the Lake are subject to regulation and permit. Currently, standards exist for tributaries and are established on a case-by-case basis for the Lake.

Newly-established Stakeholder Forum As a direct result of public comment, DEQ established a Stakeholder Forum. This group is comprised of representatives of communities, interest groups, and agencies affected by the groundwater cleanup project and other remediation work underway by Kennecott.

The Stakeholder Forum provided feedback to the District on alternatives for managing wastes from the Zone B/Lost Use treatment. It will continue to serve as a forum for review and discussion of various aspects of Kennecott's remediation programs under EPA and DEQ oversight.

What This Means

For the Public in the Affected Area The revised project implements the provisions of the Consent Decree. It will provide 8,235 AFY of municipal-quality drinking water from a resource that is currently not available because of contamination. For comparison, one acre-foot per year is equivalent to 325,851 gallons of water, the amount of water a family of four uses in a year.

For the Environment The revised project will remove and treat contaminated groundwater, thereby shrinking the contaminant plumes and restoring the aquifer. This is especially important in order to prevent further migration of the plumes to adjacent municipal well fields, private wells, and to the Jordan River.

The revised proposal means that there will be no discharge of RO concentrates to Jordan River and associated wetlands.

Feedback received as part of the public process also served as an impetus to consider numerical standards for selenium and other discharges to the Great Salt Lake. Through the coordinated efforts of agencies and stakeholders, scientific studies will be conducted to determine a selenium standard for the Great Salt Lake.

For Private Well Owners The revised project will minimize the movement of the contaminant plume toward private wells. The Consent Decree does not address third-party claims or private well owner water rights. However, as the project moves forward, there is a commitment from both Kennecott and the District to address quality (contaminant-related) and quantity (drawdown) impacts to individual well owners. This will be done on a case-by-case basis, using specific review procedures.

Ongoing Public Involvement

Public Review Public comment is being re-opened for 45 days to allow the public to consider the revisions to the original proposal. This period begins June 18 and runs through August 2, 2004. You are invited to comment on the proposed changes, detailed in the revised Proposal to the NRD Trustee and the implementing Agreements identified below.

Comments will be accepted on only the revisions to the Proposal and the implementing Agreements.

Public comments can be provided to the Trustee via e-mail at nrdtrustee@utah.gov , by fax to 801-536-0061, or by mail:

Utah Department of Environmental Quality, NRD Trustee
P.O. Box 144810
Salt Lake City, UT 84114-4810

Comments must be transmitted or postmarked on or before August 2, 2004.

Review of Revised Documents Copies of the revised Proposal and the Agreements which implement the Proposal are available online at http://www.deq.utah.gov/issues/nrd. Hard copies can be viewed on business days from 8:30 a.m. to 4:30 p.m. at the Utah Department of Environmental Quality, 168 N. 1950 West, Salt Lake City, and the West Jordan City Hall, 8000 S. Redwood Road, West Jordan.

Revised documents include:

Proposal to the Utah State NRD Trustee and USEPA CERCLA Remedial Project Manager for a Groundwater Extraction and Treatment Remedial Project in the Southwestern Jordan Valley (revised)

Agreement Among the Trustee for Natural Resources for the State of Utah, Jordan Valley Water Conservancy District, and Kennecott Utah Copper Corporation (revised)

Project Agreement Between Kennecott Utah Copper Corporation and Jordan Valley Water Conservancy District (revised)

Public Hearing Public comment will be accepted at a public meeting to be held on Wednesday, July 14 at 6:30 p.m. in the South Jordan City Council Chambers, 1600 West Towne Center Drive, South Jordan.

Stakeholder Forum On a regular basis, the District, Kennecott and DEQ representatives will sit down with the Stakeholder Forum and representatives of various community groups to provide project updates and discuss proposals under consideration. All meetings are open to the public.

E-mail Updates Periodic project updates, including Stakeholder Forum agendas, are e-mailed upon request. If you would like to be included, please e-mail your contact information to deqinfo@utah.gov

Continued Online Access to Information DEQ posts project related information on its website at http://www.deq.utah.gov/issues/nrd

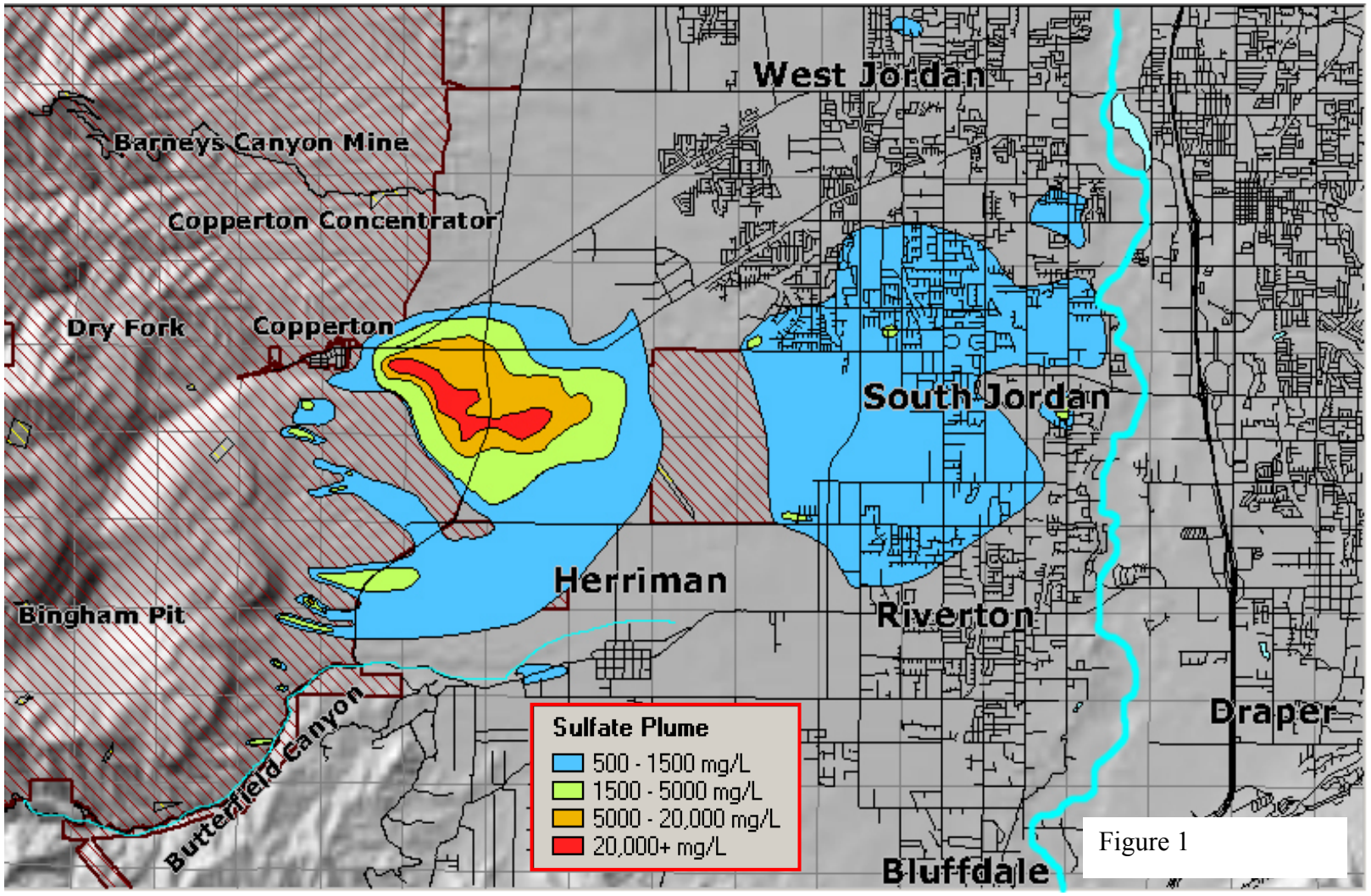

Figure 1

ZONE B/LOST USE INTEGRATED DESIGN

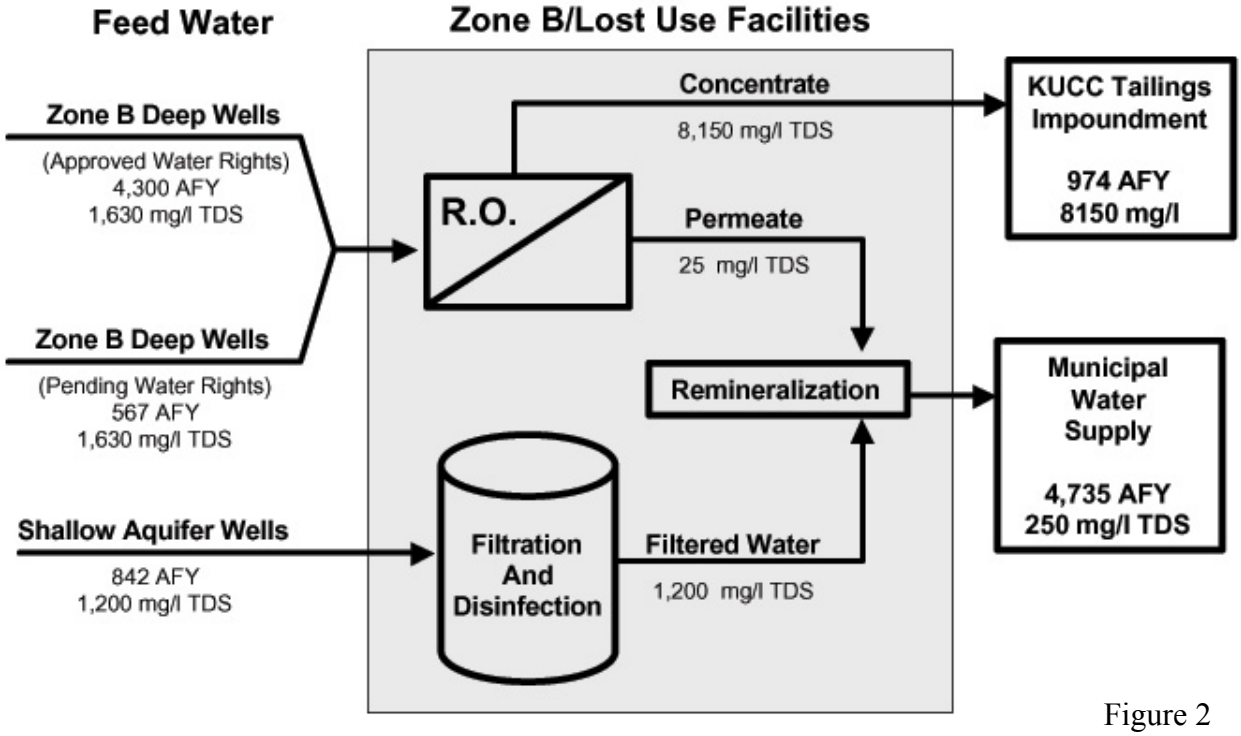

Figure 2

ZONE B/LOST USE
MINIMUM INTEGRATED DESIGN

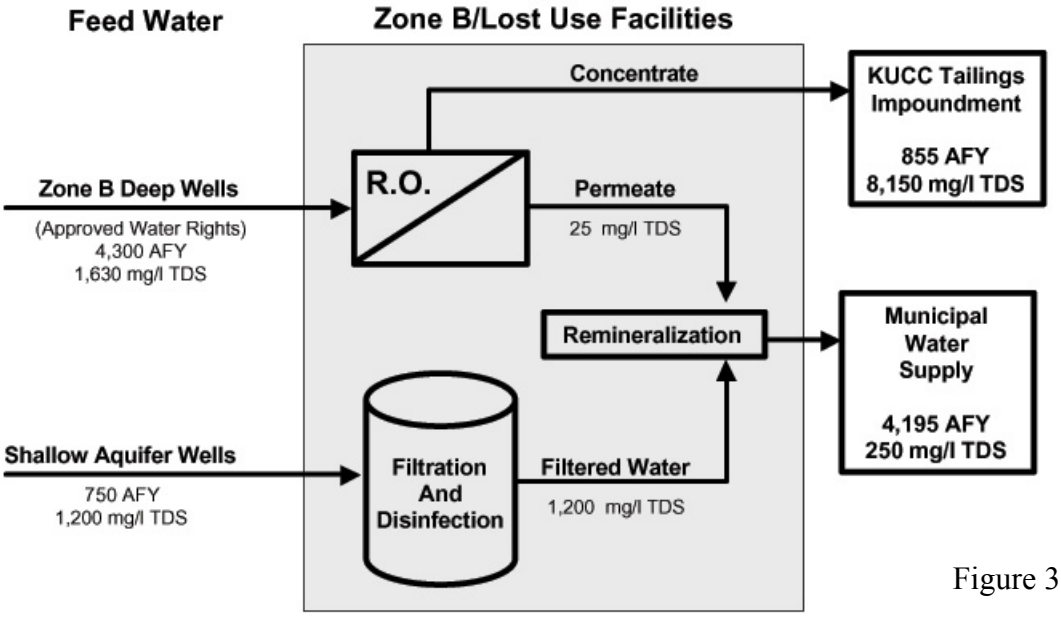

Figure 3

ZONE B AND LOST USE
SEPARATE DESIGN

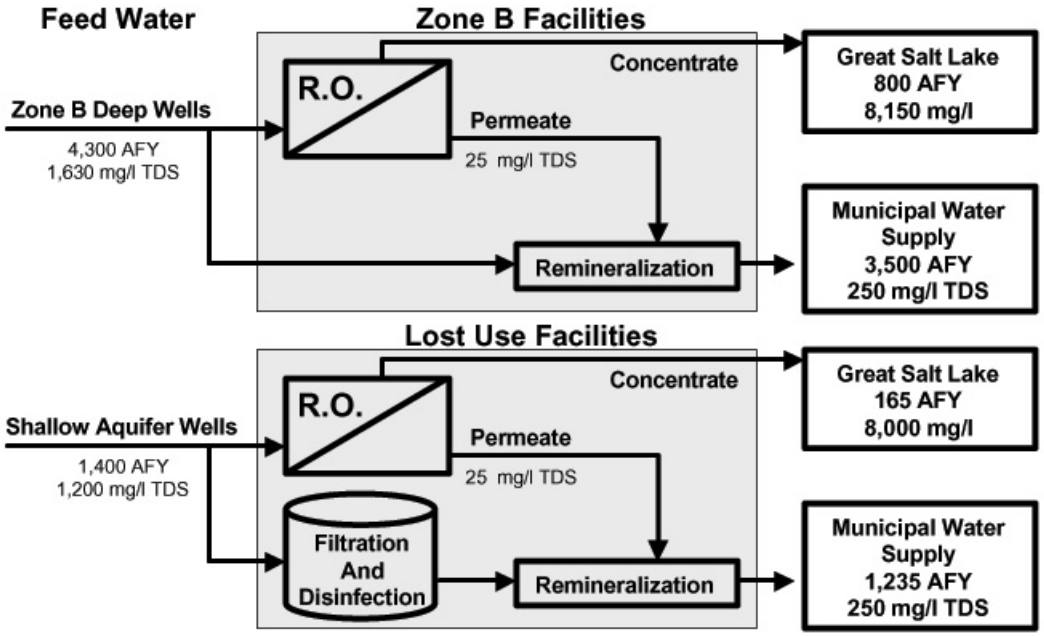

Figure 4