Letter No. 04-01

Richard N. Gilbert, Vice President
Irvine Ranch & Petroleum Co., Inc
d.b.a. Ambassador Duck Club
4071 South Minuet Court
West Valley City, UT 84119

Dianne Nielson, Executive Director
Utah Department of Environmental Quality
P.O. Box 144810
Salt Lake City, UT 84114-4810

July 19, 2004

Dianne Nielson;

I would like to thank you, your staff, Jordan Valley Conservancy District (JVCD) and Kennecott Utah Copper Corp (KUCC) for the information presented at the Friends of GSL meeting on July 7, 2004.

I represent Irvine Ranch & Petroleum Co., Inc. d.b.a. Ambassador Duck Club and its 100 shareholders. The Ambassador Duck Club owns over 2800 acres of wetlands and uplands located at the end of the Surplus Canal on the south shoreline of the Great Salt Lake. I would like to comment regarding the disposal of JVCD's RO wastewater (concentrate) from Zone B.

We have reviewed JVCD's three proposals to dispose of the RO wastewater from Zone B. The first two, " Zone B / lost use integrated design & Zone B / lost use minimum integrated design" discharge into KUCC's tailings impoundment these proposals would appear to have no impact on the Great Salt Lake ecosystem. However, JVCD preferred plan " Zone B & lost use separate design" discharges the wastewater from two RO plants directly into the Great Salt Lake. The discharge from Zone B deep wells will contain selenium and other totally dissolved solids which may or may not remain in solution with water fluctuation of the Lake. The wastewater from the Shallow aquifer wells will have high concentrations of nitrates, phosphates and organic material. These may, at the very least, cause allege blooms that will affect the Lake's ecosystem. 1-1

JVCD indicated that their preferred method was to dump all wastewater into the Great Salt Lake. I ask the JVCD representative if they could dump the waste from both RO systems (deep wells & shallow wells) into KUCC's tailings pond and the answer was no. I ask why and the answer was that KUCC would not take the dirty shallow well water. I ask if the water could be cleaned to the point that KUCC would take it and the answer was yes but that it was expensive and if JVCD cleaned the water to that point they would sell it to their customers.

Once again we are talking about money. Originally we were told that it would be impossible, too expensive, to place any wastewater from Zone B into the KUCC tailings pond, now it is the disposal point for JVCD's first two proposals and they pass the impoundment on their preferred plan with a pipeline. JVCD can place all their wastewater into the KUCC tailings pond it will just cost them more money. These cost should be paid by KUCC and JVCD water users. If the wastewater is dumped into the Great Salt Lake the cost of a clean up would fall on the people of Utah. That's assuming that forty years of dumping could ever be corrected. The Great Salt Lake and its ecosystem are irreplaceable and must not be turned into a super fund site. We believe that the discharge of these materials into the Lake will forever damage the fragile balance of the Great Salt Lake ecosystem. 1-1

We request that the Utah DEQ deny any permit to discharge JVCD RO wastewater into the Great Salt Lake and that all RO wastewater be dumped into KUCC's tailing pond.

Respectfully;

Richard N. Gilbert, Vice President
Irvine Ranch & Petroleum Co. Inc.

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JUL 29 2004
DEQ
Environmental Response & Remediation

JUL 2004

Response to Letter No. 04-01

1-1: See the Response to Common Comment No. 6 and No. 9.

Letter No. 04-02

Founded 1851
Herriman
13011 S. Pioneer St. • Herriman, UT 84065
Office: (801) 446-5323
Fax: (801) 446-5324

JUL 2004

July 20, 2004

Diane Nielson, PhD.
Executive Director
Department of Environmental Quality
168 North 1950 West
Salt Lake City, UT 84114-4840

Dear Dr. Nielson:

Thank you for the opportunity to provide comment for the record regarding the Southwest Groundwater Mitigation Project. I appreciate the tremendous pressure that must accompany the assignment as the Natural Resource Damage Trustee. This is a very complex issue and the question in the minds of many is whether or not, at the end of the day, it is a solvable problem.

I have listened with interest to the public comment regarding the proposal. Most of the comment has been somewhat centered on individual or special interest that, while expresses significant concern, offers little or no viable alternative for solution to the problem. The reality is that water resources are scarce and that much of the ground water quality in the Southwest Valley is compromised and the impact continues to broaden its reach. This project may be the best or only chance to improve the situation. Neither Kennecott nor Jordan Valley Water Conservative District is likely to approach the problem without the collaboration or the objective analysis of the Trustee. That said, following are observations that I trust may be useful and considered as you evaluate merits of the proposal, some of which may, again express concern without alternative options. I would comment on three issues.

2-1 1. The economics of the project continue to be troubling. The fact exists that, in the absence of pollution in the aquifer, water users could extract water for approximately $100.00 per acre foot in the existing economy. If, in fact, the objective is to replace water resources lost through the compromise to water quality, it seems logical that the water would be replaced at somewhere near the same rate. The present proposal appears absent of language that would recognize or address this question. Water users in identified higher pressure zones (JVWCD Zones) will have a significant economic penalty. It appears that water costs for Herriman would be approximately 3-4 times what would have been the burden to pump water from the aquifer. This could, at least in part, be mitigated by delivering water to Herriman at a higher elevation which would ease the costs of lifting water through pressure zones. The proposal, put forward by Mr. Rod Dansie, to pipe reclaimed water directly south from the Zone A Treatment Facility, at a cost relatively close to the $100.00 per acre foot or, at minimum, the cost for water resources at JVWCD Zone A, seems pragmatic and sound. I would request that, as Trustee, you consider and require the implementation of this idea. It would come much closer to replacing lost resources at the real costs required to develop the resources prior to the pollution.

2-2 The real cost of replacing the lost resources due to the contamination seems to me to be the issue. Jordan Valley's wholesale rates are calculated on the costs of delivering water in today's environment. That means the inclusion of developmental costs for exploration and new

Response to Letter No. 04-02

2-1: See the Response to Common Comment No. 11.

The JVWCD is required to pay Kennecott no more than $49 per acre-foot under the Consent Decree. This cost was established to exclude the cost of treating the contaminated water. See the Response to Common Comment No. 12.

The suggested alternative for the City of Herriman and its residents has been passed along to the proposing parties.

2-2: The NRD settlement was not intended to cover the normal costs associated with the development of groundwater resources that would have been incurred by the public. The Trust Fund was established to cover the costs associated with treating the contaminated water. The actual development costs for wells and provision of water were to be covered by those receiving the water. See also the Response to Common Comment No. 12.

Letter No. 04-02 (cont.)

2-2 infrastructure for meeting current and future demands. However, it somehow seems inherently inequitable for beneficiaries of the damage claim project to be expected to share this burden as well.

2-3 2. There has been significant comment about protecting the existing environments within the Jordan River and Great Salt Lake. I commend the JVWCD commitment to pipe the selenium waste products directly to the Lake rather than discharge into the Jordan River. Not knowing the results of on-going studies evaluating the existing selenium contents of the Lake, I would prefer to see the discharge into the Kennecott repository. At minimum, containing the pollutants seems preferable to continued compromise of water quality, wild life, and native habitat in and around the Great Salt Lake. Depending on the outcome of objective evaluation of existing conditions in the Lake, containment within the depository should be required until it can safely, if ever, be introduced into the Lake.

2-4 3. Obviously, a primary concern is the overall ground water draw down. Extraction of the volumes of water that is projected could have significant impact on existing resources. I believe that, to some degree, this will be aggravated by the blockage of the historical drainage by the containment walls installed by Kennecott. I understand the design was to prevent the introduction of continued pollution from drainage through the Kennecott waste deposits. However, the aquifer would in part be replenished by the mountain drainage system and the extraction by so many new wells in addition to restriction of the natural system for regeneration may result in a significant negative impact upon existing wells. I do not offer a solution and do not know if there are acceptable alternatives but the potential exists for some rather severe impacts on existing water users.

There is significant concern about the impact on existing wells, particularly, among private party well owners. I believe this is a valid concern and want to ensure that individual rights are protected. I understand that affected water users east of 4000 West will present claims to Kennecott and users east of 4000 West will address claims to Jordan Valley. However, options available to the individual water users seem not very well defined. Responsibility and guidelines for how the claims are addressed outside of litigation should be better identified. Approval of the project should provide specifics about compensation or plans to "make whole" or remediate further damage to existing water purveyors created by the draw down. My hope is that the date of water rights will not be used to justify damages when the aquifer has indeed been compromised by Kennecott.

Thank you for the opportunity to provide comment. I will be pleased to respond to questions or concerns about the above observations.

Sincerely,

J. Lynn Crane
Mayor

cc: Paula Doughty, Kennecott
David Ovard, Jordan Valley Water Conservancy District
Doug Bacon, UDEQ
John Brems, Parson, Kinghorn, & Peters
Travis Taylor, Herriman City Engineer
Rodney Dansie
Michelle Baguley

Response to Letter No. 04-02 (cont.)

2-3: See the Response to Common Comment No. 6, No. 7, and No. 9.

2-4: See the Response to Common Comment No. 2 and No. 10.

Letter No. 04-03

WEST SIDE DUCK CLUB ASSOCIATION

Dr. Dianne R. Neilson Executive Director
Utah Department of Environmental Quality
P. O. Box 144810
Salt Lake City, Utah 84114-4810

July 26, 2004

Dear Dr. Neilson,

We would like to thank you and your staff, Jordan Valley Water Conservancy District, and Kennecott Utah Copper Corp. for all of the work and time involved in the process to ensure the public concerns have been addressed in the clean up of contaminated ground water in the Salt Lake Valley.

3-1 As I understand your proposal, two options utilize the KKC tailings impoundment the third and preferred option discharges wastewater directly into the Great Salt Lake. Before the preferred option is approved a two year study will be undertaken to determine the effect the wastewater would have on the lake. The process you have laid out is reasonable and responsible on the face, however we have concerns over the methods used in the two year study and if the technology exists to assure an accurate outcome. It
3-2 seems there are several different opinions expressed by the scientific community as to the impact and if the results of this study are not accurate the lakes ecosystem could be permanently damaged.

3-3 In addition to the selenium issue there is the impact of nitrates, phosphates and organic material being deposited directly into the lake. There have been water quality studies done on the Ambassador Duck Club showing high concentrations of these as the water enters their east side but water sampled on their west side (about four miles) indicates
3-3 little or no concentrations. High concentrations of these deposited directly into the Great Salt Lake could have a major impact on the ecosystem.

While we applaud your decision not to deposit the wastewater in the Jordan River and to
3-2 only deposit wastewater into the Great Salt Lake with favorable results from the two year study, studies can be flawed. The outcome could cause irreversible damage to the lake. We understand the other two options could be used but with a significant increase in the
3-4 cost of the project. When a world treasure is at stake should money be the driving force behind the option chosen.

Sincerely,

Richard D. West
President - West Side Duck Club Association

Response to Letter No. 04-03

3-1: See the Response to Common Comment No. 6 and No. 9.

3-2: See the Response to Common Comment No. 6 and No. 9.

The investigation of the fate and transport of contaminants in the Great Salt Lake environment and the development of numerical standards to protect the beneficial uses of the Great Salt Lake is acknowledged to take time. DWQ is working with stakeholders to select an agreed upon analytical approach to sample and analyze the open waters of the GSL in an endeavor to establish the protocol to assess and set numerical standards. This investigation will also assist the JVWCD to decide if a proposal to directly discharge reverse osmosis concentrates to the GSL could be approved. If the JVWCD believes that the investigation is inconclusive or there is information lacking, then one of the other two disposal alternatives will be proposed. Caution will be taken to assess each piece of information so that the appropriate decisions can be made.

3-3: The comment is noted. The listed concern will be passed along to the Great Salt Lake Water Quality Steering Committee.

3-4: The comment is noted. The listed concern will be passed along to the Great Salt Lake Water Quality Steering Committee.

Letter No. 04-04

07/29/2004 19:47 2501865 NORMAN RACING 1 PAGE 01

July 29,2004

To:
Utah Dept. of Environmental Quality, NRD Trustee
P.O. Box 144810
Salt Lake City, Utah 84114-4810

From:
Darrel L. Norman
P.O. Box 35
Magna, Utah 84044-0035

Subject:
Jordan Valley Water Clean-up

Sirs,

4-1 As a representative of many employees and retiree's of "Rio Tinto" (Kennecott), I am worried that the power of this very rich company, not only already given Millions of dollars in tax cuts, but with many other favors from the Utah State Government, will continue to crawl from their duties as owners of Kennecott.

This contaminated water which they have created, not only by "Rio Tinto", but other past owners who have all contributed to this environmental damage, becomes the responsibility of the present owner, who should be financially responsible also.

After forty years at the Kennecott Smelter, September 21, 1961 to November 1, 2001, I have been under many different types of managers and owners. None of them stand out as anti people, anti environmental, anti safety, and just plain rotten as an employer like "Rio Tinto".

As for who I represent, I am President of the "Workmen's Benefit Association, Inc.", Vice Chairman of "The Steelworkers Organization of Active Retirees (S.O.A.R)", Vice Chairman of the "Legislative and Education Committee" for District 12, Sub District 5, of the "United Steelworkers of America", and past Shop Stewart of the Smelter Electric Shop for "Steelworker's Local 4347".

Very sincerely,

Darrel L. Norman

Response to Letter No. 04-04

4-1: See the Response to Common Comment No. 12.

Letter No. 04-05

Doug.

United States Department of the Interior
Fish and Wildlife Service
Ecological Services
UTAH FIELD OFFICE
2369 West Orton Circle, Suite 50
West Valley City, Utah 84119

TELEPHONE NUMBER: **801/975-3330** FAX NUMBER: **801/975-3331**

TO: Dianne Nielson	DATE: 8-2-04	TIME: 3:37pm.
FAX NUMBER: 536-0061		
FROM: Bruce Waddell		
SUBJECT: Jordan Valley Water Conservancy/Kennecott Remedial Proj.		

COVERSHEET PLUS 2 PAGE(S)

COMMENTS:

AUG 2004

Response to Letter No. 04-05

Letter No. 04-05 (cont.)

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

In Reply Refer To
FWS/R6
ES/UT
04-1228

August 2, 2004

AUG 2004
Utah Department of Environmental Quality
Office of the Executive Dir.

Dr. Dianne Nielson
DEQ Executive Director
NRD Trustee
Utah Department of Environmental Quality
Box 144810
Salt Lake City, UT 84114-4810

Dear Dr. Nielson,

Re: Kennecott Utah Copper Corporation/Jordan Valley Water Conversancy District "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". Version June 11, 2004

5-1 The Service appreciates the opportunity to thank the participants for their response to previous comments by the Service and many others with the result that the draft proposal has been modified to remove the alternative that proposed discharging RO effluent into the Jordan River. We believe this was an extremely important decision both for the public and the environment.

We have reviewed the modifications made in the subject document and offer the following general comments for consideration.

5-2
- The proposal defers making a decision on the selected alternative pending completion of 2 years of study and review to evaluate the impact of selenium in the Great Salt Lake. At that time a decision will be made as to whether the *Zone B and Lost Use Separate Design* meets the goal of preventing environmental degradation to the Great Salt Lake and its environs. If studies are incomplete or inconclusive, it is our understanding that the *Zone B and Lost Use Separate Design* would be abandoned. We provide the following comments: 1) the time frame of 2 years may be too short for definitive studies, but can allow some evaluation of methodologies for measuring selenium in the water accurately and confirming existing concentrations in biota under existing low water level conditions; 2) brine shrimp would seem to be a reasonable matrix for evaluation due to its role in the food chain of millions of birds using a site of local, national and international importance; 3) that in these times of planning for future human population growth, greater consumptive use of water, and possible degradation of the Great Salt Lake and its associated wetlands and tributaries, we recommend that minimum flows of water be established in tributaries to maintain the function of the Great Salt Lake and its adjacent

Response to Letter No. 04-05 (cont.)

5-1: See the Response to Common Comment No. 8.

5-2: See the Response to Common Comment No. 9. The study criteria suggested by the commenter will be passed along to the Trustee and the proposing parties.

Letter No. 04-05 (cont.)

5-2 400,000+ acres of wetlands; and we also recommend that some level of monitoring be established for these sites to evaluate if reduced water or increased contaminant conditions are becoming more of a problem.

5-3 • The placement of the RO effluent in the KUCC tailings pile is proposed. KUCC's discharge permit comes up for renewal soon. We request that renewal of the discharge permit and its limitations should be subject to the results of the planned studies. Our concern for the existing permit is primarily related to effect of the load of selenium entering the lake and reliance of these alternatives on this permit. We acknowledge that the proposed discharge of RO effluent represents a small percentage of the selenium leaving the tailings pile.

5-4 • The Service believes that no serious potential alternative to disposal of the RO effluent in the Great Salt Lake should be overlooked. Clearly a decision will need to be made relatively soon to protect uncontaminated aquifers. The door should remain open if there is developing technology that is opperationally effective and cost effective and meets the requirement of the Consent Decree. Options for this consideration should be addressed in this plan.

5-5 • It is out of our area of expertise, but we would like to express the concern that long-term damage to the integrity of the Zones A and B aquifers be avoided. These suggestions may have already been fully evaluated. But in the vein of constructive review of the alternatives, we recommend that you feel comfortable: 1) that increased pumping of Zone B under the *Zone B/Lost use Integrated Design* can be accommodated; 2) that recharge of Zone B (largely from irrigation canals) will continue and not be adversely affected by this project or otherwise known to likely occur, e.g. changes of points of diversion; 3) that existing valid water rights be protected and accommodated.

We note that safe yield is addressed on Page 14.

5-6 We are gratified by the openness of the process, the opportunity to review and provide comments, and serve on important groups that help provide direction and assure that the best solution can be arrived at. We have strongly supported the need for numeric criteria for the Great Salt Lake in the past and look forward to working with you in completing this important effort to protect our important resources for the future.

Thank you for the opportunity to review and comment on this application. If you have any questions or need further information please contact Bruce Waddell at (801) 975-3330 ext. 125.

Sincerely,

Henry R. Maddux
Field Supervisor

Response to letter No. 04-05 (cont.)

5-3: See the Response to Common Comment No. 13.

Kennecott's UPDES permit is on a five-year renewal cycle. At the time for renewal DWQ will assess the ability for the discharge from the Kennecott North Expansion Impoundment to continue to meet its permit limitations and whether these limitations need adjustment.

5-4: See the Response to Common Comment No. 13.

The proposing parties have continued to agree to look at emerging methods to facilitate the components of the project to best optimize the production of municipal quality water, to contain and reduce the sulfate plumes in Zone A and B, and to appropriately dispose of treatment concentrates.

5-5: See the Response to Common Comment No. 2 and No. 10.

5-6: See the Response to Common Comment No. 9.

Letter No. 04-06

SIERRA CLUB
FOUNDED 1892

Utah Chapter
2120 South 1300 East, Suite 204, Salt Lake City, UT 84106-3785
TEL: [801] 467-9297 FAX: [801] 467-9296 www.sierraclub.org

August 2, 2004

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

AUG 2004

Dear Dr. Nielson:

Thank you for the opportunity to comment on the Kennecott Utah Copper Corporation (KUCC) and Jordan Valley Water Conservancy District (JVWCD) Proposal for a Groundwater Extraction and Remediation Project in the Southwestern Jordan Valley.

These comments are submitted on behalf of the Utah Chapter of the Sierra Club. The Sierra Club is a national conservation organization, and our approximately 5,000 Utah members have a great interest in the ecological integrity of both the Great Salt Lake and the groundwater in Jordan Valley.

The Sierra Club believes that the goals of the Project are admirable, and supports the efforts to clean up the aquifer. However, due to the Project's proposals to move the contaminants out of the ground and into the Great Salt Lake and/or the North Tailings Impoundment, we urge the Trustee to consider more peer-reviewed research and science before allowing the construction of any pipelines or other Project infrastructure to take place.

The Sierra Club's support for the Project is contingent upon addressing the following concerns related to both the Zone A and Zone B contaminant discharge:

JVWCD Preferred Alternative (Zone B and Lost Use Separate Design)

Selenium Study and Cumulative Impacts

We commend the DEQ for undertaking a two-year study to determine a selenium standard for the Great Salt Lake (GSL). In order for the studies to be scientifically sound, all sources of selenium, its cumulative impacts, and eventual fate in all forms must be thoroughly studied and **peer-reviewed**.

1) Look at cumulative discharges of selenium, not just from the Zone B source, but also from Zone A discharges (both directly into the GSL and from the tailings pond) and Kennecott North End selenium discharges, in order to reflect accurately the level of contamination. In addition, total the past, present, and anticipated future amounts of selenium discharge into the GSL.

Response to Letter No. 04-06

* The responses to the comments in this letter are provided in the responses to E-mail No. 04-04. This e-mail is located in Section – 2004 E-mails, and is a verbatim copy of this letter.

Letter No. 04-06 (cont.)

2) Account for the GSL's low volume levels when setting the selenium standard. A recent *High Country News* article indicated that the area of the GSL is presently 1200 square miles, while in 1987 it measured 3300 square miles. With such wide fluctuations, the amount of contaminants allowed into the GSL should not be a static number based on high or average GSL levels.

3) Examine synergistic reactions between selenium and other metals or compounds discharged or present in the GSL. Selenium will potentially conspire with other heavy metal precipitates from the Zone A discharge and amplify ecological degradation and GSL toxicity. The effects of these metals need to be studied together, so that the DEQ and others can best monitor, assess, and mitigate their environmental impact.

4) Consider extending the selenium study period beyond two years to encompass all of the necessary scientific evaluation. Define the selenium analytical methods before the study period begins. To adequately understand the fate of selenium and other heavy metals, the Lake waters and the lake-bottom exposed/dry soils need to be studied independently to account for oxidation, different concentrations of selenium, and the changing hydrology of the Magna Tailings Impoundment.

5) Define the maximum selenium levels permitted in the GSL and use this to define a threshold at which Zone A/Zone B selenium discharge should cease. Discharge of Zone A/Zone B waste should be terminated *well before* the maximum level is reached to account for selenium entering the GSL from other sources, such as other mines, discarded commercial products, and natural sources. *The threshold should be stated as a* ***percentage*** *of the maximum allowable level*. From the above evaluations, this percentage should be based on:

a) The quantities of selenium being released into the GSL by all sources over units of time.
b) The variations in GSL size and selenium concentrations
c) The different forms of selenium, including its discharge in the most highly-oxidized form as selenate. Assess the likelihood that it will be converted to selenite, the most ecologically dangerous form, and be taken up by plants and animals.

6) Conduct on-going evaluations of the GSL at regular intervals as the Project progresses to measure selenium levels and re-evaluate the Lake's waste concentrations. When the threshold selenium level is reached, Zone A/Zone B discharge into the Lake should be terminated. When this occurs, a public study of other options for Zone A/Zone B contaminant disposal should occur, based largely on studies and technologies available at that time. We understand that this makes budgeting somewhat imprecise, but new disposal technologies have the potential to *reduce* costs to KUCC and JVWCD.

Using these methods to set a numeric selenium standard and threshold for the GSL will ensure that KUCC and JVWCD take the necessary environmental precautions in disposing of Zone A/Zone B treatment contaminants into the GSL. They also establish a mechanism for the study and implementation of new disposal options when the GSL can no longer safely house contaminants. The Sierra Club's support of this Project is contingent upon using the above methods to conduct the selenium studies that will determine the eligibility of direct Zone B discharge into the GSL, as well as establishing an on-going evaluation process to examine other disposal options.

Response to Letter No. 04-06 (cont.)

Letter No. 04-06 (cont.)

While we insist that scientifically-sound studies concerning selenium need to account for synergistic reactions with other substances present in the GSL and KUCC/JVWCD discharges, notably the other heavy metals present in Zone A, we urge that this methodology form the basis of establishing standards for all other eco-toxic substances discharged by KUCC and JVWCD.

7) Explain how KUCC and/or JVWCD will account for the cost of redundant pipelines and cleaning out scale (clogs). The proposed pipeline to carry the Zone B concentrate to the GSL may require more maintenance and cost more money than is disclosed in this Proposal. Pipeline clogs ("scaling") are quite common. Redundant pipeline(s) may be necessary to ensure that the flow of concentrates will continue uninterrupted if the primary pipeline should become unusable. The costs of redundant pipeline(s) and of cleaning out scale will be expensive. Is this accounted for in the Project's budget and where will the money come from?

Zone B/Lost Use Integrated Designs

Impoundment Suitability

Because the KUCC Magna and North tailings impoundments were not designed as permanent storage facilities for heavy metal precipitates or selenium, we question their suitability as containers for Zone A and Zone B discharge contaminants.

1) The selenium discharge will take the form of selenate. Because this is a highly-oxidized form of selenium, it is unlikely to precipitate out of solution. The tailings impoundments periodically discharge into the GSL, and studies need to be done to assess the impact of selenate on the GSL, even if one of the Integrated Design alternatives is chosen.

2) Study the possible reactions between selenium from Zone B concentrates, from Zone A treatment concentrates, and from other Zone A heavy metals in the tailings impoundment. These have the potential to create a very toxic site that the impoundment was not designed to contain. In addition, how will the periodic discharge of tailings water containing Zone A and Zone B concentrates affect the GSL? How much is expected to be discharged into the tailings ponds and GSL respectively each year? What will be the effects of these metals on the GSL's wildlife? Publish this information for the public to access.

3) Based on the addition of the contaminants from both Zone A and Zone B, we strongly suggest **re-opening the tailings impoundment permits** to discharge into the GSL. The current permits did not take into account the presence of selenium and other heavy metal precipitates from the contaminated groundwater plumes in the impoundments. In addition, the Lake's level has continued to decline since the last issuance and the hydrology of the impoundment has certainly changed more toward the Lake. New permits should reflect these changing conditions.

Future and Additional Costs

Make a plan to ensure the continuous funding of the groundwater clean-up/treatment, scientific studies monitoring the level of pollutants in the GSL, and the examination of future

Response to Letter No. 04-06 (cont.)

Letter No. 04-06 (cont.)

disposal alternatives if the costs exceed the amount allocated in the trust fund. During any 50-year project period, public and private-sector corporate entities will likely undergo several major changes in ownership, governance, mission, structure, and financial viability. The Proposal does not present protections against default by Kennecott, its parent corporation(s), or their respective successor entities as a result of such changes. We recommend that a surety be established whereby, in the event of default, continued funding will be guaranteed at 100 percent of Kennecott's original commitment for the 50-year project duration. The conditions of the surety should be established to ensure that there is no disruption in project funding due to litigation or other problems.

There is no protection against default by the JVWCD for any reason, such as restructuring by the State of Utah. We recommend explicit legal protections that will ensure that JVWCD's commitment will survive any restructuring or change in the scope, role, or mission of JVWCD, even if that would mean that responsibility for this commitment may be assumed directly by the State of Utah.

Formulate a plan for ensuring the responsibility of payment of unanticipated future costs, such as are likely to occur should dumping into the GSL cease to be an option. .

Monitoring of Drinking Water

Guarantee that fail-safes are in order to ensure that the stream of RO treated water from Zone B going to the public is drinkable. How are JVWCD and the DWQ planning to monitor the effectiveness of reverse osmosis on this large-scale process? We suggest that the Proposal include an explicit, detailed plan for preventing contamination from entering the potable water supply, in the event the reverse osmosis system should fail at any time and for any reason during the 50-year project. The plan should include provision for ongoing, continual monitoring of water quality and immediate detection of, and immediate preventive measures against, any contaminants. Current monthly and historical monitoring reports, including maximum levels of contaminants during the respective reporting periods, should be available on the Department of Environmental Quality's web site (or the logical technical successor to web site technology) for the duration of the project.

Integrity of the Aquifer

Re-evaluate the groundwater modeling used in the Consent Decree. We are concerned that the rate of recharge has been overestimated. Based on our current drought conditions, we do not want excess water to be taken from the aquifer to meet the quota determined in the Consent Decree if this is currently unsustainable.

Additional Concerns and Points of Clarification

1. Table 5.6B, and Section 8.2 mention an "alternative disposal method" if concentrates are unsuitable for direct discharge into GSL. What is an example of a safe disposal method?

2. Section 6.1 says that the "flow and transport models were extensively reviewed" by

Response to Letter No. 04-06 (cont.)

Letter No. 04-06 (cont.)

several government agencies and other "international and nationally-recognized reviewers." While peer reviews are an essential part of projects like this, the statement implies that all the reviewers agreed. Is this the case, or were changes in procedures suggested? If so, were these suggested changes implemented?

3. Section 6.3 states "Modeling of the additional extraction from Zone B proposed under the Integrated design results in negligible drawdown." Since the word negligible can mean many things, depending on your point of view, we suggest a specific number be used here.

4. Section 7.2 says "The water rights listed in Table 7.2C have been approved by the State Engineer." However, Table 7.2C lists these as "Approved and Pending."

5. Section 7.3 says that "KUCC is committed to assist property owners affected by KUCC remediation efforts in obtaining an adequate water supply" by several methods including financial support. Is this commitment stated in a legal contract? If not, why not?

Based on all of the above concerns, we strongly suggest that construction of the Separate Design pipeline not be started until the selenium standard is evaluated, so as not to predetermine the alternative that is chosen. In addition, we understand that pumping must be done to prevent underground contamination spread, but ask the Trustee to allow only the minimum amount of pumping necessary, until the appropriate scientific studies have been done, future projections of population growth taken into account, and the integration of this Proposal with the State Engineers' Water Management Plan.

Provided these recommendations are incorporated into Project implementations, the Utah Chapter of the Sierra Club lends its support to the Project.

Sincerely,

Sophia C. Nicholas

for Ann Wechsler
Conservation Chair, Utah Chapter of the Sierra Club

Response to Letter No. 04-06 (cont.)

Letter No. 04-07

WESTERN RESOURCE
ADVOCATES

August 2, 2004

Dianne Neilson
NRD Trustee
Utah Department of Environmental Quality
PO Box 144810
Salt Lake City, Utah 84114-4810
Via Fax: 801.526.0061
Email: nrdtrustee@utah.gov
and US Mail

Re: Comments on June 2004 revision to the proposal to clean up contaminated groundwater in Southwest Jordan Valley.

Dear Dianne,

On behalf of FRIENDS of Great Salt Lake, National Audubon Society and Utah Rivers Council (collectively "FRIENDS"), I make the following comments on the proposal, submitted by Kennecott Utah Copper Corporation (Kennecott) and the Jordan Valley Water Conservancy District ("Jordan Valley"), to revise their plan for cleaning up contaminated groundwater in Southwest Jordan Valley.

7-1 First, FRIENDS would like to thank you for the considerable time and effort you have invested in finding a solution to the contamination of the Zone B plume. We are particularly grateful for your strong commitment to involving the public in the decision-making that affects the proposed clean up. We also appreciate your work to protect the Jordan River and Great Salt Lake, the critical ecosystem values they support, and the significant economic and quality of life benefits they provide to Utah's citizens.

Formerly
Land and Water Fund of the Rockies

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www.westernresourceadvocates.org

Response to Letter No. 04-07

7-1: Thank you for the expression of support.

Letter No. 04-07 (cont.)

I. Background

As the Tenth Circuit Court of Appeals recently observed, Great Salt Lake is one of the most important ecosystems in the nation, if not the world, providing crucial stop-over points for millions of migratory birds:

> The Great Salt Lake (GSL) and the wetlands surrounding its shoreline serve as an important habitat for a variety of birds, reptiles, amphibians, and mammals, some of which are endangered. The wetlands for the GSL account for 75 percent of all wetlands in the State of Utah, whose total land areas consists only of 1.5 percent wetlands. The shores of the GSL are internationally important because they are a link of the Pacific Flyway for migratory waterfowl and a link of the Western Hemisphere Shorebird Reserve Network. Some two to five million birds use the GSL yearly and 90 percent of that use is concentrated in the eastern shore.

Utahns for Better Transportation v. U.S. Department of Transportation, 305 F.3d 1152, 1161 (10th Cir. 2002).

The extraordinary number of breeding and migratory birds that rely on Great Salt Lake include:

- the largest staging concentration of Wilson's phalaropes in the world, representing 50% of the world's population;
- the largest staging concentration of eared grebes in the world;
- the world's largest breeding population of white faced ibis and California gulls;
- over half of the entire breeding population of snowy plovers west of the Rocky Mountains;
- the largest breeding colony of American white pelicans; and,
- one of the top ten wintering sites for bald eagle in the lower 48 states.

The economy of the State and the quality of life of its citizens are highly enriched by the birds that rely on Great Salt Lake. For example, the U.S. Fish and Wildlife Service (FWS) estimates that, in Utah in 2001, expenditures associated with wildlife hunting totaled 292 million dollars, while expenditures associated with wildlife watching totaled **556 million**. *2001 National Survey of Fishing, Hunting and Wildlife Associated Recreation for Utah FWS*. The agency estimates that Utah hosted 616,000 wild bird observers in 2001 alone.

Much of this use is concentrated around the shores of Great Salt Lake. For example, the Great Salt Lake Bird Festival started in 1999 under the direction of Davis County. The 7th Annual Great Salt Lake Bird Festival was held in Davis County during the week of May 13-20, 2004, with the goal of providing opportunities for the public to better understand the significance of the Great Salt Lake ecosystem. More than 4000 people attended. A Great Salt Lake Birding Trail map was printed and distributed in 2001 with the assistance of many partners including the Davis County Tourism and the Utah Travel Council. There are approximately 50 ducks clubs from the southern end of the lake to Ogden Bay area to the northern end of the lake. At the three main public areas on the Lake (Farmington Bay, Ogden Bay, and Bear River Migratory Bird Refuge) waterfowlers number in the thousands on opening day of the duck season.

Response to Letter No. 04-07 (cont.)

Letter No. 04-07 (cont.)

Great Salt Lake is of particular importance to the people of Utah for additional reasons. Great Salt Lake is a navigable water and therefore, the bed underlying its waters is sovereign land. As a result, the State of Utah has, pursuant to the trust responsibilities it owes its citizens, a heightened obligation to protect the ecological integrity and recreational uses of this prized public resource. *See*, National Parks and Conservation Ass'n v. Board of State Lands, 869 P.2d 909 (Utah 1993)("the 'public trust' doctrine . . . protects the ecological integrity of [sovereign] lands and their public recreational uses for the benefit of the public at large"). At a minimum, the State is required to govern the lake in such a way "that the protection of navigation, fish and wildlife habitat, aquatic beauty, public recreation, and water quality will be given due consideration and balanced against the navigational or economic necessity or justification for, or benefit to be derived from, any proposed use." Utah Admin Code, Rule R652-2-200; *see also* Colman v. Utah State Land Board, 795 P.2d 622 (Utah 1990) (the public trust doctrine requires preservation of sovereign lands for public purposes).

At the same time, the State is charged with "conserv[ing] the waters of the state and to protect, maintain and the quality thereof for public water supplies, for the propagation of wildlife, fish and aquatic life and for . . . recreation. . . . ." Utah Admin. Code, Rule R317-2-1A. Recognizing the importance of water quality to sustaining wetlands and wildlife habitat, the State has identified beneficial uses for Utah's National Wildlife Refuges and State Waterfowl Management Areas, including Farmington Bay Waterfowl Management Area and other similarly important wetlands that ring Great Salt Lake. Utah Administrative Code, Rule R317-2-13.11. The water quality in these critical wildlife areas is protected to support habitat for warm water fish, warm water aquatic life, and waterfowl and shorebirds, as well as the aquatic organisms upon which they feed. Id.; R317-2-6 (use designations). Utah has also determined that the water quality in the Great Salt Lake is to be protected for "primary and secondary contact recreation, [and] aquatic wildlife . . . ." Id., Rule R317-2-13.13.

The State protects these uses in several ways. For example, Utah's narrative standard, Utah Admin. Code R317-2-7.2, specifies that "[i]t shall be unlawful" to discharge waste into Utah's waters in a way that "result[s] in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life . . . ." The State's antidegradation policy further provides:

> Waters whose existing quality is better than the established standards for the designated uses will be maintained at high quality unless it is determined by the Board . . . [that] allowing lower water quality is **necessary** to accommodate important economic or social development in the area in which the waters are located.

Utah Admin. Code Rule R317-2-3 (emphasis added).[1] Moreover, the same standard also dictates that "[n]o water quality degradation is allowable which would interfere with or become injurious to existing instream water uses." Id.

[1] Under the newly promulgated antidegradation policy, proposed federally regulated activities impacting several of the National Wildlife Refuges and State Waterfowl Management Areas, including Farmington Bay, are exempt from antidegradation review. Utah Admin. Code Rule R317-3.4(b)(6). This exemption is illegal under the Clean Water Act. *See* 40 C.F.R. § 131.12. In any case, activities impacting Great Salt Lake are not so exempt.

Response to Letter No. 04-07 (cont.)

Letter No. 04-07 (cont.)

II. Comments

7-2 It is in this context, that FRIENDS makes its comments on the June 2004 revision to contaminated groundwater cleanup proposal. Again, while FRIENDS appreciates the hard work that has gone into the proposal, we find it not in keeping with the obligations the NRD Trustee owes the public and not in keeping with the State's obligation to protect Great Salt Lake and the critical ecosystem values it sustains.

A. Any Proposal that Envisions Concentrating Contaminants for Dumping into Great Salt Lake Conflicts with the Consent Decree and CERCLA.

7-3 Initially, FRIENDS finds the consideration of options to "clean up" the contaminated Zone B plume by concentrating these contaminants and pumping them straight into Great Salt Lake to be unconscionable. Concentrating and moving contaminants does not constitute a "clean up." Moreover, this approach is in conflict with the purposes of section 107 of CERCLA, which does not envision the that the alleged resolution of a natural resources damage claim will be a proposal that damages other natural resources. This self-defeating approach to the "clean up" of contaminated waters conflicts directly with the public interest in protecting Utah's natural resources by exposing some of the world's most precious wildlife habitat to new sources of contamination.

7-4 By the same token, the focus of the revised proposal on providing infrastructure to facilitate future municipal water delivery is misplaced and not in keeping with the Consent Decree. The latter agreement is aimed at restoring the contaminated aquifer and providing drinking water equal to the amount specified in the decree. Nothing in the agreement anticipates or even sanctions using Trust monies to facilitate future water development.

7-3 Moreover, it is the treatment of shallow well water – not Zone B water – that has, at times, shifted the "clean up" debate away from real solutions to the aquifer contamination to a notion that the contaminants can be concentrated and dumped into Great Salt Lake. In other words, it is the treatment of shallow well water that serves as the impetus for alternatives that will dump contaminants in Great Salt Lake. Were only the concentrate from the Zone B at issue, the direct dumping alternative would not receive the consideration that it has.

Thus, the only alternatives which should be considered appropriate remedies to the Zone B contamination are alternatives that do not involving dumping of contaminants into Great Salt Lake. Alternatives that do allow direct dumping are not in keeping with CERCLA, the Consent Decree, the public trust and the Trustee's duties to the citizens of Utah. As a result, the Separate Design alternative should be rejected out of hand as incompatible with the law and with good public policy.

7-5 Moreover, it is now apparent that a further alternative – one that does not include the treatment of shallow well water – is worthy of consideration as an appropriate solution to the problem posed by the contaminated aquifer. As currently proposed, the "lost use" component of the proposal comes from the shallow wells. It is the treatment of this water, according to Kennecott and Jordan Valley, that favors consideration of the direct dumping alternative. Yet, the "lost

Response to Letter No. 04-07 (cont.)

7-2: The State Trustee has received under the Consent Decree the proposal by Kennecott and JVWCD. One primary goal of the Trustee is to contain the sulfate plumes and prevent their further migration. The proposed extraction program would assist in remediation of the aquifer over the long term.

The work under the Joint Proposal is to be done while appropriately handling the disposal of the waste stream that inevitably would be created. Under the State of Utah UPDES permit program, an entity can apply for a discharge to a State surface water body. The DWQ evaluates proposed discharges to assure that the discharge will not impede the beneficial use of the receiving water body.

See also the Response to Common Comment No. 6 and No. 9.

7-3: See the Response to Common Comment No. 6 and No. 9.

7-4: The joint proposal addresses the Zone B sulfate plume and providing the make-up water lost as a result of the reverse osmosis process. The JVWCD's intentions to pursue a water development project beyond the scope of the Joint Proposal, is outside the purview of the Trustee's decision.

7-5: Comment is noted. Both proposing parties have agreed to continue to optimize the project to assure that the goals of the project are met. The JVWCD will be made aware of the comment for consideration during their design planning prior to the selection of a disposal option.

Letter No. 04-07 (cont.)

use" component of the proposal is but a fraction of the total water to result from the project and could be readily acquired in another manner.

7-5 For example, the water could be acquired by augmenting the withdrawal from the aquifer, by water delivery from Kennecott's Zone A operations, or by some combination of the two. Indeed, it is now clear that Jordan Valley is prepared to seek additional water rights from the contaminated aquifer of 567 acre feet per year. This water, alone, is almost sufficient to make up the "lost use" component of the damage claim. It is also apparent that by treating Zone A waters, Kennecott is capable of delivering significant amounts of water. An approach that replaces the "lost use" water from a source other than the shallow wells, therefore, would eliminate the need to dump contaminants directly into Great Salt Lake.

7-3 Thus, any "clean up" of the Zone B plume that allows the concentration and moving of the contaminants to one of the most important waterbird areas in the world is unacceptable under law and is indefensible as a matter of policy. As a result, the Trustee should immediately reject the separate design alternative. Consideration of future water delivery and reliance on shallow
7-5 well pumping to replace "lost use" should not justify a proposal that will involve direct dumping into the lake. Because several alternatives for furnishing the "lost use" component are available, along with the integrated design, no direct dumping proposal is warranted.

B. The Trustee Should Delay Her Decision on the Alternatives Until More Information is Available.

As explained above, the Trustee should immediately adopt the integrated design alternative,[2] or some other alternative that does not allow the dumping of contaminants into Great Salt Lake. However, if the Trustee still wishes to consider the proposal as currently described, the Trustee should **not approve** it at this time. Rather, the Trustee should postpone any decision until all available information is before her and the public in two years time. This approach is further warranted given that Jordan Valley will not begin construction on the project until two years from now and no harm will accrue to the company as a result of the postponed decision. Both Jordan Valley and Kennecott envision a process that involves study and information gathering.
7-6 There is no reason to limit the influence that this process, along with potential improvements in technology, could have on resolving the natural resources damage claim. In other words, because there is a commitment to gathering additional information, all decision-making should be postponed until that information is considered. Only in this way will the decision-making process benefit from the information that will be developed.

In making a decision now, conditionally approving various alternatives, the Trustee will inappropriately abdicate her responsibilities and prevent the public from fully participating in the resolution of the natural resource damage claim. As was made clear at the public hearing, in approving the proposal as currently described, the Trustee will effectively end her role in protecting the public's interest in resolution of the natural resource damage claim. Alone, this is inappropriate. The Trustee should reserve judgment on the various proposals until the Trustee

[2] The adoption of any plan to discharge RO by-product into the tailings pond would emphasize the need to reconsider the impacts of Kennecott's existing permit on the ecosystems of Great Salt Lake and to revisit the terms of that permit based on new information gathered in the process of creating numeric standards for the lake.

Response to Letter No. 04-07 (cont.)

7-6: See the Response to Common Comment No. 6 and No. 9.

The decision on a disposal option by the JVWCD will be addressed after the DWQ, State Trustee, Kennecott, JVWCD and the other members of the Great Salt Lake Water Quality Steering Committee have had an opportunity to investigate the fate and transport of selenium in the Great Salt Lake environment.

Letter No. 04-07 (cont.)

7-6 has considered the information that will be collected over the next two years – information that all sides agree is essential to making an informed decision. In addition, in making a decision now, the Trustee will prevent the public from providing input to her based on this information and prohibit the public from suggesting other solutions to the contamination that may become more apparent or more desirable based on that information.

7-7 Finally, because the proposed pumping project will continue for 40 years or more, the decision should have built into it, a process for regular review and reevaluation that will encourage technological innovations and new information to be applied to make the "clean up" process less damaging to Great Salt Lake and the ecosystems it supports.

C. The Proposal's Reliance on Selenium Standards for Great Salt Lake is too Vague and Insufficient.

7-8 As currently proposed, the selection of one of the three proposed alternatives appears to rest solely on the outcome of the process to determine numeric standards for selenium for Great Salt Lake. This conditional approach to resolving the contamination of the Zone B plume is too vague and insufficient.

7-1 As a preliminary matter, FRIENDS fully supports the plan to develop numeric standards for Great Salt Lake. The promulgation of a selenium standard should be but the first of many processes that will lead to a full suite of numeric standards for Great Salt Lake paralleling the standards established for freshwater lakes. However, there is no reason to make the solution to the Zone B contamination tied to this process – it is already evident that no proposal to concentrate and

7-8 dump contaminants into Great Salt Lake is acceptable. Other alternatives are readily available that do not conflict with the law and public policy and that meet the requirements of the Consent Decree.

7-3 Additionally, there are several other contaminants from the RO process that are of grave concern. Thus, relying on the promulgation of a selenium standard to address direct dumping into Great Salt Lake is misplaced. Among the troublesome contaminants are total dissolved solids, chromium, copper, iron, and mercury. A better understanding of the RO by-product could reveal even more conclusively that discharge of this waste stream into Great Salt Lake will violate Utah's water quality standards as well as the intent of CERCLA and the Consent Decree.

7-9 Finally, were the Trustee to approve some conditional response to the Zone B contamination, the Trustee should spell out much more clearly how the ultimate choice among alternatives is to be made. As a preliminary matter, the Trustee must commit, in writing, to statements made at the public hearing that if studies to determine whether the proposed discharge of RO by-product will adversely impact Great Salt Lake ecosystems are not yet finished or if there is a lack of consensus as to what constitutes safe levels of contaminants discharged into Great Salt Lake, Jordan Valley will be obligated to opt for an alternative that does **not** allow discharges directly into Great Salt Lake. By the same token, the Trustee must confirm that if these studies determine that the proposed discharge of RO by-product has the potential to impact adversely Great Salt Lake ecosystems, Jordan Valley will be obligated to opt for an alternative that does not allow discharges directly into Great Salt Lake.

Response to Letter No. 04-07 (cont.)

7-7: See the Response to Common Comment No. 13.

The review of new technologies for the disposal of treatment concentrates and the optimization of the remedial functions to contain and reduce the sulfate plumes in both Zone A and B have been recognized as an important component by the proposing parties.

7-8: The comment is noted.

7-9: The comment is noted. See the Common Response to Comment No. 7 and No. 9.

Letter No. 04-07 (cont.)

In any case, the Trustee must

7-9

- detail the process that will lead to the creation of the selenium standard, including the opportunities for public involvement, and administrative and judicial review of any final decision;
- explain what will happen if no standard for selenium has been established in two years or if any proposed standard is being challenged;
- explain what will happen if there is disagreement among experts as to the appropriate standard for selenium;
- spell out what will happen if experts do not agree how much selenium exposure can be tolerated by Great Salt Lake wildlife and aquatic life;
- explain what will happen if the selenium standard is expressed in terms of concentration, while there remain issues of loading and concentrations in tissue samples;[3]
- address what will happen if studies are outstanding or if additional studies are necessary; and,
- explain how uncertainties will be handled, how much disagreement, if any, will be tolerated, and how to determine when a conclusion has been based on adequate information.

Until these issues have been fully addressed and incorporated into the proposal, the Trustee should not act on the revised plan.

D. The Location of the Direct Discharge is Unacceptable.

7-3

As explained above, any discharge of RO by-product into Great Salt Lake is inappropriate. Moreover, any discharge in or around the area suggested in the proposal is unacceptable. National Audubon Society has designated the relevant area, known as Gilbert Bay, as a state Important Bird Area (IBA). National Audubon Society will soon nominate Gilbert Bay as a global IBA, grounded on the international significance of this area to water birds. The data upon which the National Audubon Society will base its nomination are the significant number of individuals and percentages of the world populations of five species of birds that rely on this area, including: 778,260 individuals or 21% of the world population of eared grebe; 458,553 individuals or 30.6% of the world population of Wilson's phalarope; 70,501 individuals or 11.4% of the world population of California gull; 47,519 individuals or 3.2% of the world population of Franklin's gull; and, 33,191 individuals or 7.4% of the world population of American avocet.

Importantly, these five species are found in the different habitats of Gilbert Bay. Eared grebes and Wilson's phalaropes are found mostly on the open water. California gulls, Franklin's gulls and American avocets are mostly found on the varying gradients of the shoreline and mudflats of Gilbert Bay. This indicates that all the various habitat of this area, and the Great Salt Lake

[3] Currently, available science indicates that standards for selenium based on tissue samples are necessary to adequately protect wildlife.

Response to Letter No. 04-07 (cont.)

Letter No. 04-07 (cont.)

7-3 generally must be protected and enhanced to allow these birds and the other birds that rely on the lake to flourish for decades to come.

III. Conclusion

7-5 No "clean up" of the contaminated aquifer that concentrates contaminants and dumps them into Great Salt Lake is lawful or in keeping with good public policy. As a result, the Trustee should immediately reject the separate design alternative. In addition, concern with future water delivery and reliance on shallow wells to provide "lost use" are inconsistent with the consent decree, particularly because the need to dispose of waste from the treatment of the shallow well water has been used to justify direct dumping alternatives.

7-9 Should the Trustee even consider the proposal as currently described, the Trustee should delay making a decision on the plan until two years hence. Only then can the Trustee make a well-informed decision based on the information all sides agree must be gathered and only then can her decision incorporate public comment based on that same necessary information. Moreover, if the Trustee considers the proposal, the Trustee must first detail the exact effect the information and the conclusions drawn from it will have on the ultimate plan chosen to address the Zone B plume. The Trustee must also address the issue of the other contaminants that will be released by discharge of the RO by-product.

7-3 Moreover, the direct dumping alternative, as currently formulated, should be further rejected because it will discharge into an area used by huge numbers of birds and relied on by significant percents of the world population of five particular species of waterbird.

7-10 Finally, the revised proposal and the continuing threats posed to Great Salt Lake and the Jordan River by activities such as the shallow well pumping proposal underscore that it is absolutely necessary that a minimum instream flow requirement be established for Jordan River. Implementation of an instream flow would help cushion the ecosystems of these waters from the increasing development activities and proposed discharges and withdrawals that promise to degrade water quality in these priceless areas.

Thank you for this opportunity to comment. We look forward to a thorough written response to our comments and to a decision from the Trustee that prohibits any discharge of "clean up" related discharges into Great Salt Lake. Please keep us fully apprised of any developments in your decision-making process and any opportunities to be involved in that process.

JORO WALKER
Attorney for Friends of Great Salt Lake
National Audubon Society and
Utah Rivers Council

Response to Letter No. 04-07 (cont.)

7-10: The comment is noted and will be forwarded to the Great Salt Lake Steering Committee. See the Response to Common Comment No. 9.

Letter No. 04-08

AUGUST 1, 2004

AUG 2004
Utah Department of Environmental Quality
Office of The Exec. Dir.

DEAR SIR;

I AM WRITING CONCERNING THE GROUNDWATER CLEANUP PROJECT THAT IS GOING ON OR IS SOON TO BEGIN IN OUR AREA. THIS IS IMPORTANT TO ME BECAUSE I HAVE A WELL AT 9993 SOUTH 1300 WEST IN SOUTH JORDAN. THIS WELL WAS DRILLED IN 1977 AND HAS PROVIDED WATER FOR MY ANIMALS YEAR ROUND. AT THE PRESENT TIME I HAVE 19 HORSES AND 5 STEERS. THIS IS A FREE FLOWING WELL SO IS EXTREMELY VALUABLE IN THE WINTER. I ALSO WATER MY LAWN AND YARD DURING THE SUMMER MONTHS.

8-1 IT IS IMPORTANT TO ME THAT THIS WELL CONTINUES TO PROVIDE WATER. MY QUESTION IS WILL THE QUANTITY OF THE WATER BE AFFECTED BY THIS PROJECT? IF SO, WHAT CAN I DO TO ASSURE THAT THE QUANTITY AND QUALITY OF MY WELL WATER BE PROTECTED?

ANY INFORMATION YOU CAN GIVE ME WILL BE APPRECIATED. MY ADDRESS IS 9993 SO. 1300 W. SOUTH JORDAN, UTAH 84095 AND MY TELEPHONE IS 254-4311.

THANK YOU.

Max Anderson

Response to Letter No. 04-08

8-1: See the Response to Common Comment No. 10.

Letter No. 04-09

A1

To: QUESTIONS FOR NRD TRUSTEE

CC: 4 pgs

HTML Attachment [Download File | Save to my Yahoo! Briefcase]

9-1 1) Is there a violation of a fiduciary responsibility of the Trustee to the Public by reducing the interest rate on the $28M Letter of Credit (LOC)? If Kennecott has COVENANTED to increase the remaining balance in the LOC at 7% annually, what would the benefit be to the Public by reducing the rate of interest accrual? Is there a benefit to Kennecott in the proposed reduction of the interest rate and interest accrual within the NRD Trust Fund? PRIME+1.5%

9-2 2) Why would the Public want to pay more than $49 per acre-foot (AF), if Kennecott agreed to deliver water to a purveyor at $49 per acre-foot in 1995 dollars? Paragraph 2b(i) p.10

9-3 3) The supporting document states that 8235 acre-feet per year (AF/yr) will be PUMPED from the ground to account for reverse osmosis (RO) processing loss of 15% (assumes 85% recovery using RO). This would leave 7000 AF/yr obligation of Kennecott to deliver to a purveyor of municipal quality water.

Is it the intent of the Consent Decree that MORE than 8235 AF/yr will be pumped from the contaminated aquifer, and that 1235 AF/yr will be ADDED to the 7000 AF/yr rather than SUBTRACTED from the 8235 AF/yr that needs to be pumped to make up for the reject water? Could someone please look at the mathematics? 7000 AF/yr is the stated Consent Decree volume, NOT 8235 AF/yr.

9-4 4) Is a joint proposal allowed within the scope of the 1995 Consent Decree? If so, what legal defense is offered to suggest that a "joint proposal" between a Public Agency and a private corporate polluter, is allowed under the Consent Decree?

9-5 5) Does the Consent Decree envision the construction of a separate "lost use" facility? If so, what is the legal basis for dividing the responsibility of Kennecott's contamination into two geographic areas and assigning "lost use" only to the eastern area below the South Jordan Evaporation Ponds?

9-6 6) Is there any mechanism envisioned by the Consent Decree to allow conveyance of any waste stream generated by treatment of contaminated groundwater, to be placed anywhere other than upon Kennecott's own property?

9-7 7) Based on the actual PROVEN total cost (ie, capital costs, operations, maintenance and replacement, financing, etc) of the selected option of TREATMENT of contaminated groundwater, as per Consent Decree option 2b (p.10), WHO will pay these costs, and how much will each of the following parties or groups pay per acre-foot each year, over the 40 yr project duration? (7,000 AF/yr X 40yrs = 280,000 AF) It appears that it is Kennecott's obligation to "provide and deliver" (Paragraph 2b. p.10) municipal quality water...to a system of a purveyor of municipal and industrial (M & I) water in a manner acceptable to the Trustee...

WHO pays and HOW MUCH? (Per acre-foot per each year of the 40 year Decree period. It seems intuitive, that based on inflation, costs will increase each year)

a) Kennecott Utah Copper Corporation, and/or its parent company Rio Tinto

AUG 2004

Response to Letter No. 04-09

9-1: Under the proposal, the interest rate is not being reduced on the $28 million Letter of Credit (ILC). Instead, in accordance with the terms of the Consent Decree, that original ILC is being replaced by two new ILC, one for the Zone A facility and one for the Zone B facility, to cover construction and operation and maintenance. The 7 percent interest rate only applies to the original ILC. See also Response to Common Comment No. 12.

9-2: See Response to Common Comment No. 12.

9-3: The amount of the letter of credit was deemed to be sufficient to construct a facility that could produce 7000 acre-feet per year of municipal quality water. To supply an additional 1235 acre-feet of water that is lost due to the treatment process, JVWCD will either extract and treat shallow groundwater or provide it from other sources.

9-4: The Joint Proposal is allowed under the terms of the Consent Decree.

9-5: The District is proposing to use the cash in the Trust Fund to "restore, replace, or acquire the equivalent of the surface or ground water resources for the benefit of the public in the Affected Area" under paragraph V.D.4 of the Consent Decree. This is consistent with the terms of the Consent Decree. See also the Response to Common Comment No. 12.

9-6: The Consent Decree does not define how the waste streams from treated water will be handled.

Letter No. 04-09 (cont.)

P2

and/or Kennecott Land Company

9-7 and/or OM Enterprises, a subsidiary of Kennecott Land Company

$62M
$221
56M $200
421
62
800
106M <379>

b) The Public, as owners of the Utah State NRD Trust Fund

c) The Public, as receivers of drinking water through a purveyor of treated water

d) The Public, as ratepayers

e) The Public, as property taxpayers
SAME TAX

9-8 If the four Public parties or groups are paying the entire costs of treating the contaminated water to municipal quality, should they not be aware of how much payment over the 40 year period is to be expected of them? Should the Public not be expecting a discount for treated water due to contamination of their public water supply? [redacted] Why should the public be PAYING, when we [redacted] be expecting a DISCOUNT?
COULD

The questions above, are fundamental questions that should be answered prior to the Public Hearing on July 14, 2004.

The following are additional questions relating to legal interpretation of the 1995 Consent Decree, the fundamental document which forms the basis for the NRD settlement and funding of the NRD Trust Fund and design of a treatment facility.

9-9 * Is the term "lost use" found anywhere in the Consent Decree? NO!

WORDING: "EQUIVALENT BENEFIT" IS FOUND AT THE TOP OF P.9

9-10 * Does it matter that Kennecott has spent $135 million (p.3) if they have not provided an equivalent benefit to the Public? NO!

9-11 * Is there a difference between "fair and reasonable" settlement (p.3) and "fair and equitable" (p.7)

9-12 * If the court ORDERED, ADJUDGED AND DECREED (p.4) should not the court be involved if any changes are made from the intent or operation of the Consent Decree document?

ALSO P.2 ONLY STUDIED SALT LAKE VALLEY

9-13 * If by definition (p.4) the "Affected Area" is in the area in the "southwestern portion of the Salt Lake Valley", how can any subsequent documents refer to the area as the "Jordan Valley"?

CAN WE GET SOMEONE TO ATTEMPT A "LIABILITY" SUIT?

9-14 * Is "Cause" and "Effect" clearly spelled out in definition C (p.4) in which the "Cause" is shown to be Kennecott's mining and leaching operations, and the "Effect" is:

1) increased levels over baseline of total dissolved solids, including sulfates
2) pH levels lower than baseline
3) metals concentrations exceeding baseline
4) solid phase contamination in the aquifer that can be redissolved in the future

9-15 * If the provisions of this Consent Decree apply to Kennecott and its successors and assigns, it should also apply to its parent company, Rio Tinto

Response to Letter No. 04-09 (cont.)

9-7: See Response to Common Comment No. 11 and No. 12.

9-8: See Response to Common Comment No. 11 and No. 12.

9-9: The term "Lost Use" is used to describe the JVWCD proposal for providing an additional 1,235 acre-feet of water, as described in the Joint Proposal.

9-10: The Consent Decree does require remedial actions (specified under paragraphs V. A, B and C) which has been completed to the benefit of the public.

9-11: The terms have the same meaning in the Consent Decree.

9-12: The parties are not required to seek court approval if no modifications are being made to the Consent Decree. The Joint Proposal meets the requirements of the Consent Decree. See also the Findings and Conclusions of the Trustee.

9-13: Use of the term "Southwest Jordan Valley" is consistent with the Consent Decree and earlier EPA remedial project activities and documents. The term "Affected Area" is a defined term in the Consent Decree.

9-14: The State of Utah settled in 1995 a claim against Kennecott for injury to the groundwater in the Affected Area. The Consent Decree identifies the scope and nature of the settlement. Also, see Response to Common Comment No. 12.

Letter No. 04-09 (cont.)

P3

9-15 who owned Kennecott Utah Copper Corporation KUCC) at the time of signing the Consent Decree in 1995. Further, it was stated for the record on March 3, 2003 that Kennecott Land Company (KLC) is a subsidiary of KUCC. A legal opinion could be sought to determine if KLC and OM Enterprises (OME) are successors and assigns, in which case, the Consent Decree is binding upon KLC and OME. As was stated by the president of KLC Peter McMahon on March 3, 2003 in a public transcribed statement "in reality, they are one and the same (companies)"

9-16 * Regarding disposition of the acid water with metals constituents, Extraction From Metals Plume (paragraph VB. p.8) states the water is to be pumped FROM the plume TO the leach water handling system AT the waste rock disposal areas (interpreted to be AT the mine, not tailings impoundment) for EVAPORATION. This would be consistent with the philosophy of removing the contaminants from the plume and returning them to the place of origin, or AT the mine. So it would appear that the Consent Decree requires return of the contaminants from the Metals Plume to the mine. EVAPORATION is the process used in distillation for purity of water.

9-17 * Regarding disposition of the $28M letter of credit, it is clearly indicated on paragraphs 1 and 2 (p.9) that it, the letter of credit "shall be held as PART OF the Trust Fund" There are some that feel splitting the Trust Fund is NOT how a trust fund is handled. The current (2003 and 2004) proposal to the Trustee splits the $28M letter of credit so that a water purveyor is one recipient, and Kennecott is the other recipient of funds released by and through decisions of the NRD Trustee..

9-18 * Paragraph 5. (p.15) states "Kennecott shall not receive or beneficially use ANY of the surface or ground water resources provided to the public and which are developed for credit or developed by expenditures of the Trustee pursuant to Section VD of this decree" (NRD Trust Fund). If KLC or OME are the successors or assigns of KUCC. then it would seem that any real estate projects in which they are involved are not eligible to receive treated water in which Trust Fund money is expended. Somebody could be looking into this to affirm the Consent Decree provision. Whose job is it?

9-19 * Paragraph 6. (p.15) states "Decisions of the Trustee under this section (section V. COVENANT BY KENNECOTT AND PAYMENT TO THE TRUSTEE) subject to judicial review shall be reviewed using an arbitrary and capricious standard." So, it would appear that decisions of the Trustee regarding Kennecott's covenant and financial matters of the Trust Fund may be subject to judicial review, and there is a very large question as to the ability of the Trustee to divide the Trust Fund or lower the effective yield to the Public by allowing the interest rate to be reduced. Could the Trustee be asked if the decisions envisioned by the current proposed State agreement (3-party) may be subject to judicial review?

9-20 * Paragraph A. (p.15) states in part "The State reserves the right to seek injunctive relief under State law for further remedial action." Could we get an opinion as to what State law is available which would allow for further remedial action? I believe the Trustee will acknowledge that there is a shortage of funds with which to remediate the aquifer.

9-21 * Paragraph A. (p.17) states in part "This Decree does not resolve any other claims, including claims of criminal liability." There are some that believe Kennecott INTENTIONALLY constructed the South Jordan Evaporation Ponds in 1983 and 1984 with clay sides so the banks wouldn't fail, and gravel porous bottoms so the untreated water from the mining operation would be injected directly into the aquifer for disposal. It would appear intuitive that the intention of the operators of the "evaporation ponds" was to inject contaminated water

LSO, SINCE "LOST USE" IS
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ME, KENNECOTT IS
EFICIALLY USING (P5, P.15)
SECT WATER FROM THEIR
PLANT TO FLUSH
SHED ROCK TO THE
CENTRATOR AND THEN
THE TAILINGS IMPOUNDMENT.
THE PUBLIC PAYS FOR KENNECOTT'S
PLANT, THEN THE PUBLIC IS
WING THEIR TRUST FUND TO
FOR KENNECOTT'S BENEFICIAL
E.

Response to Letter No. 04-09 (cont.)

9-15: The Consent Decree is binding on the named party, Kennecott Utah Copper Corporation.

9-16: When Kennecott ceased leaching operations, the process was changed to send the acid plume water to the tailings impoundment. That change is directed in the Record of Decision, dated December 2000. See also the Response to Common Comment No. 5.

9-17: Replacement of the original ILC with the Zone A and Zone B ILCs is consistent with the terms of the Consent Decree. See also Response to Common Comment No. 12.

9-18: See Response to Common Comment No. 11.

9-19: The Trustee is not prepared to comment on standards of review.

9-20: The State has specific rights under Utah Code Annotated Title 19 and under federal law to seek remedial action.

9-21: Third party claims are not settled by the State Natural Resource Trustee's action against Kennecott. See Section VIII of the Consent Decree.

Letter No. 04-09 (cont.)

P4

9-22 into the aquifer illegally, and possibly criminally. It would appear that if it could be shown that criminal liablility exists, that if the State would consider pressing the issue, perhaps the public could benefit. Perhaps it could be brought out how "criminal" it is for a subsidiary of a foreign-owned corporation to contaminate approximately 20% of the groundwater storage (some have estimated contaminated groundwater volume of 3 million AF or 10X the capacity of Jordanelle Reservoir) in our own Salt Lake Valley, and then profit by creating development which further stresses our water supply, then take the real estate profits out of the country!
It would appear that it is not appropriate for the Public to provide financial gain for the polluter and or its successors and assigns or to its parent company. Funding could be made available for the Public to receive some long-term relief from escalating water costs due to increasing costs of water delivery caused by the pollution.

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Response to Letter No. 04-09 (cont.)

9-22: Comment noted.

Letter No. 04-09 (cont.)

Trustee - **1:** one to whom something is entrusted: one trusted to keep or administer something

Trust Fund
a doctrine holding that assets are held as a trust fund for the benefit of parties and that the **trustee** have a fiduciary duty to deal with them properly
1: a sum of money or other resources whose principal or interest is set aside for a specific objective

2: property (as money or securities) settled or held in a trust

9-23 Why would the Trustee propose reduction of the ILC (Irrevocable Letter of Credit) established at an interest rate of 7% as stated in the "Consent Decree" Section V D2a to the proposed PTIF of 1.5% when it has been established that:
1.the settlement was and is insufficient,
2.the Decree specifies only one (ILC) Irrevocable Letter of Credit Section V D2.

Would the Trustee be violating the fiduciary responsibility in doing so?

Why would the Trustee give this benefit to Kennecott when they have the ability to have a reduction of the ILC as they KUCC, its successors and assigns provide and deliver to a purveyor municipal quality water?

9-24 The Decree provides for one Trust Fund which includes the ILC which "shall be held as part of the Trust Fund" Section V D 2. line 1. Nowhere in the Consent Decree does it infer that the Trustee can split the ILC to a purveyor and Kennecott, it only provides for reduction of the ILC as water is provided by Kennecott to a purveyor.

9-25 Has the Trustee determined that the municipal quality water supplied by extraction or collection is a sustainable water supply (40 or more years)?

Response to Letter No. 04-09 (cont.)

9-23: See response to 9-1 above and Response to Common Comment No. 12. The Trustee is acting consistent with the provisions of the Consent Decree. See also Findings and Conclusions of the Trustee.

9-24: The Zone A Kennecott project is covered under Section V.D.2.b of the Consent Decree and the JVWCD project is covered under Section V.D.4 of the Consent Decree. The Consent Decree does not prohibit the Trustee from authorizing the creation of the two ILC's as defined in the Joint Proposal. See also response to 9-1 above and Response to Common Comment No. 12.

9-25: Yes. See the Findings and Conclusions of the Trustee. Further, the Technical Review Committee reviewed sustainability.

Letter No. 04-10

✓org ✓.Dacon
cc drn

July 15., 2004

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Herriman, Utah 84065
801-254-4364

RECEIVED
JUL 20 2004
DEQ
Environmental Response & Remediation

JUL 2004
Utah Department of Environmental Quality
Office of the Exec. Dir.

Dianne R. Nielson, NRD TRUSTEE and Executive Director of Dept. of Environmental Quality of State of Utah
P. O. BOX 144810
Salt Lake City, Utah 84114-4810

Re: REQUEST FOR 120 DAYEXTENSION OF TIME TO EVALUATE AND PROVIDE COMMENTS ON THE REVISED PROPOSAL AND THE AGREEMENTS FOR IMPLEMENTING TH E AGREEMENTS NOW BE FORE THE TRUSTEE FROM JORDAN VALLEY WATER DIST. AND KENNECOTT COPPER CORP.

10-1 THIS IS A FORMAL REQUEST FOR 120 DAYS FROM AUGUST 2,2004 TO PROVIDE INPUT AND TO STUDY THE PROPOSED AGREEMENTS AND THE EFFECTS ON WELLS, THE ENVIOREMENT AND TAXES AND WATERS RATES AND IF THE PROPOSAL MEETS THE REQUIREMENTS OF THE CONSENT DECREE.

The NOTICE AND TIME PROVIDED IS NOT ADEQUATE AND MUST BE EXTE.ND ED TO ALLOW THE PUBLIC TO BECOME AWARE OF THE PROPOSED CHANGES AND THE EFFECTS ON THE PEOPLE AND THE HEALTH , SAFETY AND WELFARE OF THE PROPOSAL AS WELL AS THE REQUIREMENTS OF MEETINGTHE CONSENT DECREE.

10-2 There are major changes proposed in the water distribution, costs of water and environmental effects and release of trust funds as well as if the proposal meets all of the requirements of the trust fund. (It appears that the changes do not meet the requirements of the trust fund consent decree.)

10-1 It appears that the trustee must allow time and provide for more in put by the public and more education by the trustee to the public of the effects of the proposed agreements before the public hearing process can be closed.

Response to Letter No. 04-10

10-1: See Response to Common Comment No. 1.

The Trustee provided significant time to the public to gain an understanding of the project particulars, totaling more than 120 days. Significant time was taken to provide the public with opportunities to talk with the Trustee and proposing parties, through information meetings, official hearings, informal and formal briefings.

The public has submitted numerous comments and concerns on the project particulars. These have been addressed either through revisions to the proposal that was brought out for public comment during a reopening of the public comment period in 2004, or by the responses contained within this response document.

10-2: The revisions to the Joint Proposal meet the requirements of the Consent Decree. See the Findings and Conclusions of the Trustee. The Trustee has the discretion to approve a proposed project where some of the decisions are a function of the permitting requirements under various state programs.

Also, see Response to Common Comment No. 11.

Letter No. 04-10 (cont.)

10-3 It appears that the trustee is being Arbitrary and capricious if addition time of at least 120days and a education and evaluation program and a cash flow sheet showing the costs and benefits to the public and who is paying for the clean up of Kennecotts damages and injuries of the natural resources and waters of the salt valley. The trustee must do more to evaluate if the revised proposed joint agreements meet all of the requirements of the 1995 consent decree.

10-4 It is hereby requested that a 120 days additional time is allowed for the public comments and that the NRD Trustee undertake more education of the public of the proposed agreement and its effects on 1. taxes, water rates, private wells, and the environment and if the damage by Kennecott is being paid for by Kennecott and the long term effects of the proposed agreement on the citizens and public of the Salt Lake Valley and if the proposal meets all of the requirements of the 1995 Consent Decree.

Submitted this 15 th day of July 2004

J. Rodney Dansie

J. Rodney Dansie

Response to Letter No. 04-10 (cont.)

10-3: See Response to Common Comment No 1. See also the Findings and Conclusions of the Trustee with respect to whether the Joint Proposal meets the requirements of the Consent Decree.

10-4: See the response provided to Comment No. 10-1, above.

Also, see Response to Common Comment No. 10 and No. 12.