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Kennecott Groundwater Remediation: Collaborative Problem Solving Builds Trust and Reduces Costs

Lauren Carpenter DeVoe

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Student Conflict Assessments

Students taking *Environmental Conflict Resolution* conduct a conflict assessment based on a student-selected real-life environmental or natural resource conflict. They analyze the nature, source and history of the conflict, identify potential stakeholders and potential issues. If the conflict is, or has been, subject to a dispute resolution process, the student writes a case study identifying best practices and lessons learned, and gives suggestions of what could have been done differently and why (looking back). If the conflict is not currently, and has not been, subject to a dispute resolution process, the student designs a dispute resolution process (looking forward). Some students do a combined case study and future process design.

Students' papers posted on the EDR Program website include an Executive Summary. For case studies (looking back), this highlights the best practices and lessons learned. For dispute resolution process designs (looking forward), this provides a summary of the essential process components. The primary purpose of posting these student assessments is to disseminate the "best practices" and "lessons learned" in each paper.

Disclaimers:

- The assessment reports reflect the student authors' opinions, and do not reflect the views or opinions of the University of Utah, any of its affiliated entities, or any individuals interviewed as part of the assessment.
- Unlike a conflict or situation assessment conducted by a professional third party neutral, the students' work does not include interviews of *all* stakeholder interests. While every attempt has been made to include the full range of perspectives in the analysis, it is possible that some perspectives have been omitted.
- The assessment reports are posted as were written by the students and therefore reflect a snapshot-in-time. Facts and perspectives can change; for ongoing conflicts, the reader is encouraged to do additional research to confirm that the situation described in the assessment remains current.
- For questions about factual issues, the reader is encouraged to refer to underlying resource documents.

Environmental Dispute Resolution Program

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INTRODUCTION

The following case study relies on support from traditional research—all of which is cited throughout—and interviews with representatives from three of the major stakeholders involved in the process analyzed. Interviews were conducted with Dianne Nielson, the former Executive Director of the Utah Department of Environmental Quality (conducted March 15, 2013); Marcelle Shoop, former Kennecott attorney involved in the negotiations and Kelly Payne, Kennecott's Environmental Manager (conducted March 18, 2013); as well as Richard Bay, CEO of the Jordan Valley Water Conservancy District (conducted March 25, 2013). To protect these individual sources and their ongoing relationships, their statements are not cited in the following study.

The events analyzed in this case study began about 30 years ago, and the recollections and recorded information differ to some extent. Additionally, the culmination of events and pressures and motivations of the parties are complex, and often occurred simultaneously. Though the legal claims are separate, the negotiations resulted in encompassing all three disputes. This case study strives to be as clear and accurate as possible with the information available.

BACKGROUND

A. The History of the Kennecott Plume

Mining began as early as 1873 around Bingham Canyon, located about 30 miles southwest of Salt Lake City, Utah.[1] Initially, "lead, silver, zinc, and gold deposits" were found

[1] *Abandoned Mine Lands Case Study: Kennecott Mining Site*, ENVIRONMENTAL PROTECTION AGENCY, June 26, 2006, *available at* http://www.epa.gov/aml/tech/kennecott.pdf (hereinafter Abandoned Mine Lands Case Study); GOOGLE MAPS, *available at* http://www.maps.google.com (last visited Mar. 12, 2013.)

and mined; in 1896, significant copper deposits were found.[2] For over half a century, the land around Bingham Canyon was bought and sold by different mining companies, and was eventually purchased by Kennecott Utah Copper ("Kennecott") in 1936.[3] Rio Tinto acquired the company and its Utah holdings in 1989.

The various historic mining activities left a tremendous amount of hazardous substances behind. "[A] 72-square mile plume of sulfate-contaminated ground water" resulted.[4] Groundwater wells, including some drinking water wells, were compromised and the surrounding streams and soil were contaminated with heavy metals, including "cadmium, chromium, sulfate, and arsenic."[5]

In 1983, Kennecott began a hydrogeologic study to determine the condition of the groundwater "in a 216 square mile area" impacted by nearly a hundred years of mining.[6] Utah state and Salt Lake County officials informally advised Kennecottn throughout the process.[7] The study results showed "significant groundwater contamination," and in 1985, "Kennecott, the State of Utah, and Salt Lake County entered into a Memorandum of Agreement" formalizing the State and County's health departments' participation in the hydrogeologic study.[8] The proposed Memorandum of Agreement contemplated the completion of the study, regular reporting, and the creation of a "final Environmental Impact Assessment ("EIA")."[9] Though Kennecott submitted a draft EIA, the final version required by the Memorandum was not completed

[2] *Abandoned Mine Lands Case Study*, at 3.
[3] *Abandoned Mine Lands Case Study*, at 3.
[4] *Sites in Reuse in Utah*, ENVIRONMENTAL PROTECTION AGENCY, *available at* http://www.epa.gov/oerrpage/superfund/programs/recycle/live/region8_ut/html (last visited Mar. 1, 2012). Also known as Plume B, or the sulfate plume.
[5] *Id.* Also known as Plume A, or the heavy metals plume.
[6] Kennecott Corp., 801 F.Supp at 555–56
[7] *Id.*
[8] *Id.* at 555–56.
[9] *Id.*

because the legal landscape changed. A year after the Memorandum of Agreement between Kennecott and the State of Utah, Utah filed a legal action seeking recovery based on damage to its groundwater resources, which was immediately stayed pending the completion of the hydrogeologic study.[10] As discussed below, the inclusion of various stakeholders, information sharing, and the willingness to entertain creative solutions created an environment in which collaboration thrived.

B. The Various Claims Involved at the Kennecott Site

After over a century of mining and in an era of stricter environmental legislation, primarily the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), several legal claims arose regarding Kennecott's holdings located around the Oquirrh Mountains. First, the State of Utah had a Natural Resource Damage claim under CERCLA against Kennecott as the owner of, and only remaining potentially responsible party for, the contaminated groundwater. Second, the United States Environmental Protection Agency ("EPA") had authority under CERCLA to place Kennecott's Utah holdings on the National Priorities List— granting it "Superfund" status—which would give EPA "the authority . . . to oversee the cleanup of historical mining contaminated areas at the Kennecott properties."[11] Third, extensive contamination along Bingham Creek and its "historic floodplain" gave rise to "emergency response action under [CERCLA] to address the contamination."[12] These claims arose nearly simultaneously, creating a complicated context for negotiations between the major stakeholders.

1. Natural Resources Damage Claim

[10] State of Utah v. Kennecott Corp. 801 F.Supp 553, 556 (D. Utah 1992).
[11] *Kennecott Copper LLC Projects*, UTAH DEQ, *available at* http://deq.utah.gov/businesses/kennecott/index.htm (last visited Mar. 9, 2013).
[12] *Abandoned Land Mines Case Study*, at 6.

Under CERCLA, a state may file a Notice of Claim for Natural Resource Damages ("Notice"), as long as the state does so within three years of either "the date of the discovery of the loss and its connection with the [hazardous substance] release in question," or the date final regulations are promulgated pursuant to CERCLA.[13]

In order to preserve its claims under the varying statute of limitation provisions, the State of Utah filed a Notice for $129 million against Kennecott on July 31, 1986.[14] Timing of the action was prescribed by CERCLA; thus, was not damaging to Kennecott and the State's relationship. The State's Division of Environmental Health informed the court that Kennecott should finish its hydrogeologic study and assess the contamination before any decisions were made.[15]

After the State filed its Natural Resource Damages ("NRD") lawsuit against Kennecott, the court "granted a motion to stay all proceedings so that the parties could pursue and complete the five year study, and later continued the stay pending settlement negotiations."[16]

2. Potential Superfund Listing

While Kennecott was completing its hydrogeologic study, EPA's inspector general recommended placing the Kennecott site on the National Priorities List (NPL).[17] CERCLA (or "Superfund") grants the federal government authority to list contaminated areas on the NPL (also known as the Superfund list), which in turn can impose joint and several, strict liability on those defined under the statute as responsible for the pollution.[18] Later, EPA, Kennecott, and the State of Utah would

[13] *Id.*; 42 U.S.C. §9607, 9612 (West 2006).
[14] 801 F.Supp. at 556; *Top Court Urged to Hear Kennecott Case*, DESERET NEWS, July 28, 1994, 12:00 AM, *available at* http://www.deseretnews.com/article/366782/TOP- COURT-URGED-TO-HEAR-KENNECOTT-CASE.html?pg=all.
[15] 801 F.Supp. at 556.
[16] *Id.*
[17] *Abandoned Land Mines Case Study*, at 6.
[18] *CERCLA Overview*, ENVIRONMENTAL PROTECTION AGENCY, *available at* http://www.epa.gov/superfund/policy/cercla.htm (last visited Mar. 2, 2013). CERCLA establishes liability for parties

"[reach] an agreement in principle for how the contaminated lands could best be cleaned up, [but] an impasse over legal and administrative terms [would lead the] EPA to move forward with the NPL listing" in January of 1994.[19]

3. Groundwater Contamination at Bingham Creek

In 1990, Utah investigators found "a strip of contamination" alongside Bingham Creek "and its historic floodplain"—an area which had become densely populated.[20] Though Kennecott denied involvement in the Bingham Creek contamination, the company launched its own investigation, which revealed "extensive contamination...."[21] Kennecott and the EPA resolved the contamination separately from the negotiations described below; however, it would be naïve to assume that it did not affect Kennecott's choices or the relationship between Kennecott and the EPA, the latter of which would take Kennecott's cleanup as a gesture of goodwill toward other negotiations.

NEGOTIATIONS PART I: FORGETTING THE STAKEHOLDERS

With the aid of environmental consultants from Dames & Moore, Kennecott studied the environmental impacts of contamination at the Kennecott site.[22] Based on the information gathered, Kennecott proposed a settlement to the State in the summer of 1990, that included an "exchange of water rights valued at about [two] million dollars for the natural resource damage, plus... $100 million worth of remediation work."[23] The remedial work was to include "curtailing potential sources of groundwater pollution," "undertaking actions to remediate the heavy metals plume," "drilling very deep wells below the low pH or heavy metals plume... and

"responsible for releases of hazardous waste" and substances at abandoned or closed hazardous waste sites.
[19] *Abandoned Land Mines Case Study*, at 6.
[20] *Abandoned Land Mines Case Study*, at 6.
[21] *Id.*
[22] 801 F.Supp. at 556–59.
[23] *Id.*

pumping the contaminated water down through the uncontaminated soil, attenuating the metals and raising the pH."[24] The settlement would have also required the State to dismiss its CERCLA lawsuit with prejudice.[25]

At the same time, the EPA inspector general—without consultation with Utah officials—proposed adding the Kennecott site to the Superfund list, a proposal to which Utah objected.[26] The State wished to use its existing permitting programs to regulate discharges from Kennecott, but EPA had contentions with the State's "solid waste and hazardous waste [law]" mining exemptions.[27]

The State rejected Kennecott's proposal after government and outside experts convinced officials that "remedial action issues should be analyzed in greater detail and pursued with the approval of and cooperation of the EPA."[28] In February 1991, EPA, Kennecott, and Utah Department of Environmental Quality (UDEQ) started negotiations in an effort to create a legally binding consent decree.[29] In July of the same year, the State and Kennecott reached a settlement agreement on the Natural Resource Damage claim (Consent Decree).[30]

1. The State and Kennecott Come to Agreement on the Natural Resource Damage Claim

The Natural Resource Damage Consent Decree officially established the scope of the environmental contamination, and required Kennecott to pay $11.7 million dollars for the contaminated groundwater.[31] The price was "based upon an estimate of the market value of water rights per acre foot within the [site] multiplied by the 13,000 acre feet per year 'safe

[24] *Id.*
[25] *Id.*
[26] *Abandoned Mine Lands Case Study*, at 6.
[27] *Id.*
[28] 801 F.Supp. at 556–59.
[29] *Id.* at 559.
[30] *Id.*
[31] *Id.*

annual yield' estimate" and other factors, such as litigation expenses.[32] The State believed, based on the information it had seen, that the contaminated groundwater at the Kennecott site could not reasonably be remediated by the parties, and natural remediation, or natural attenuation—which would occur as contaminated water moved through the soil over hundreds to a thousand years—was the only feasible solution.[33]

2. The Settlement is Blocked

The Consent Decree was submitted in July 1991 to the U.S. District Court for the 10th Circuit for approval. Legal notice was published for the proposed consent decree, but the deadline for public comments came soon after the notice, leaving little time for interested parties to submit their concerns. The Jordan Valley Water Conservancy District (District) determined that it did not have adequate lead-time to participate effectively through the public comment forum, and instead the District's Board of Directors tried to litigate the matter. In the fall, after public comment was heard regarding the Consent Decree, the Court heard arguments from potential intervenors: the District and the Sierra Club; the State and Kennecott opposed the intervention in court.[34] However, the court allowed the District to intervene.

The court held a six-day evidentiary hearing in the Spring of 1992. The parties—Kennecott and UDEQ—agreed that the site contained a 4-square mile area of heavy metals contamination and a 17-square mile sulfate plume.[35] Kennecott and UDEQ's Director Ken Alkema argued that "pumping the ground water and cleaning it would be unworkable."[36] The District argued the following 1) there were feasible ways to remediate at least some of the water

[32] *Id.* at 559–60.
[33] *Id.* at 560.
[34] *Id.* at 561.
[35] *Id.*
[36] *Id.* at 563.

within the site (the District had water rights very near the established contamination site), 2) the area of contamination agreed upon by Kennecott and UDEQ was not appropriate because waters outside of the area were contaminated and no longer useable as drinking water, and 3) the Consent Decree failed to establish methods to mitigate future further contamination. The District also argued the amount of damages was incorrectly calculated, because water cannot simply be replaced, making a market value approach inappropriate.[37] In September 1992, the court rejected the Consent Decree based on the objections raised by the District.[38] Judge Greene told Kennecott, UDEQ, and the District to enter into negotiations to try to resolve their disputes.

3. The Parties Begin Negotiating

By April 1992, Kennecott, UDEQ, and the EPA had come to an "Agreement in Principle" for remediation of the site, which would have covered all of Kennecott's property except active mining operations and provided for Kennecott to pay the cleanup costs incurred by EPA and UDEQ.[39] The Agreement in Principle did not bar the State or EPA from pursuing future NRD claims.[40] However, in late 1993, the parties came to an impasse and could not agree on the site-wide consent decree.[41] Early in 1994, EPA officially took action to propose placing Kennecott on the NPL.

Meanwhile, Kennecott and UDEQ continued to appeal the district court's dismissal of their proposed settlement. However, their appeals were not successful: in January 1994, the 10th Circuit Court of Appeals dismissed the case for lack of jurisdiction.[42] UDEQ and Kennecott appealed to the U.S. Supreme Court, but certiorari was denied later the same year.[43]

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[37] *Id.* at 562–64.
[38] 801 F.Supp. at 572.
[39] *Id.* at 559.
[40] *Id.*
[41] *Abandoned Land Mines Case Study*, at 7.
[42] Utah v. Kennecott Corp., 14 F.3d 1489 (10th Cir. 1994).
[43] *Utah v. Salt Lake Cty. Water Conservancy Dist.*, 513 U.S. 872, 115 S. Ct. 197 (1994)

Kennecott and UDEQ were out of appeals for their proposed settlement.

Though meetings continued during the appeals process, they were largely token efforts, called for by EPA under its Superfund authority. EPA officials had a charge at the meeting: to either find a solution or get the Kennecott site listed on the NPL. This charge was the only substantial factor which made the meetings even partially productive by laying the groundwork for future negotiation.

During this time, the public was largely unaware. However, the District's member cities were aware and requested regular progress updates.

4. Setting the Stage for Additional Negotiations

Absent a negotiated agreement, Kennecott's only hope was to limit its liability under CERCLA, whether through successful litigation, or by remediating in advance of suit by federal or state agencies. Remediation was going to happen either way, but there was no reason to add litigation costs, possible treble damages, and EPA oversight costs to the bill. G. Frank Joklik, Kennecott's CEO at the time, realized these multiple interests, which incentivized him to find creative new solutions to the contamination cleanup. As head of Salt Lake City's Olympic bid committee, Joklik did not want a Superfund listing to be a disadvantage in the bidding. And as CEO of Kennecott, he worried such a listing would increase the cost of capital they were hoping to acquire to modernize its operations.[44] Additionally, by maintaining control of the remediation process, Kennecott was able to envision wholly unheard of land reuse strategies.[45]

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[44] *Id.*

[45] *Sites in Reuse in Utah*, U.S. E.P.A., http://www.epa.gov/oerrpage/superfund/programs/recycle/live/region8_ut.html (last visited Mar. 12, 2013) ("The Kennecott Land Company has redeveloped 4,126 acres of the site into the Daybreak community. The development is designed to be a model of environmentally and socially responsible growth, with all 13,600 homes and 9.1 million square feet of commercial building space constructed in accordance with EPA Energy Star efficiency guidelines. The community also features 1,250 acres of parks, a recreational lake, pedestrian-friendly town centers, shops, churches, schools and mass transit.")

Similarly, without a negotiated agreement, UDEQ would be forced to continue litigating to protect its natural groundwater resources, leaving it to choose between either Kennecott's, the District's, or develop its own position regarding the contamination, adequate damages, and potential for remediation.

The District's best alternative to a negotiated agreement was also not ideal. The District may have been entitled to monetary damages to purchase new water rights, but such a result poses its own problems... water cannot be replaced and the contamination would remain. Similarly, EPA would be bound by CERCLA, and forced to oversee ongoing cleanup operations, to standards set statutorily.

NEGOTIATIONS PART II: A CLIMATE OF COLLABORATION

Negotiations turned collaborative pretty quickly in 1994–95. Individuals who had stood in the way of collaborative learning and solutions left and were replaced with personalities better suited to the task of finding solutions outside of litigation. Ken Alkema left UDEQ and Dianne Nielson was appointed as Director; Nielson was also Utah's Trustee for Natural Resources, giving her authority under CERCLA her predecessor did not have. Educated in geology, Nielson came to the table with an interest in finding environmentally sustainable solutions that would please all parties. During this time, a new corporate perspective had evolved at Kennecott.[46]

Kennecott executives and those at the working level had a desire to collaborate, and had key interests that could not easily be fulfilled through a typical CERCLA consent decree.[47] Kennecott found that it had an interest in becoming an environmental partner, and EPA's Superfund process was coming to a close. Kennecott wanted to implement cleanup operations

[46] *Abandoned Land Mines Case Study*, at 6.
[47] Rio Tinto, the international company that purchased Kennecott Corp. in 1989 had an institutional focus on collaboration, which was seemingly trickling down to Kennecott management.

quicker than was necessarily feasible under the constraints of CERCLA, and focus its resources on those physical impacts on the environment, rather than litigation. Senior leaders at Kennecott were committed to negotiations and continued to try to keep the channels of communication open with UDEQ and the District. Kennecott continued to work on the physical cleanup of the impacted areas, despite the stall in negotiations.

Though EPA had moved forward with the proposed NPL listing, the local community applied strong pressure to the agency. Kennecott's neighbors did not want the area on the Superfund list, and many individuals voiced their opinions directly to EPA. Because of the "staunch opposition" and the fact that Kennecott had continued, in good faith, with cleanup of its holdings, EPA, State of Utah and Kennecott entered into a Memorandum of Understanding in 1995 that documented their approach going forward, including certain cleanup activities and delayed the NPL listing.[48] EPA allowed the State to take the lead in guiding negotiations, though they had a representative chair the meetings, Eva Hoffman.

The State convened the negotiations, though the location for meetings was adjusted based on convenience and other factors. In addition to Kennecott's preference for collaboration, the political climate during the beginning of these negotiations proved to be key. Utah Governor Mike Leavitt (1993–2003) was actively engaged with the Western Governors Association, which worked to create a principled framework for approaching environmental issues, which it called "Enlibra."[49] The core Enlibra principles proved essential to guiding the stakeholders:

1. National Standards, Neighborhood Solutions - Assign Responsibilities at the Right Level

[48] *Abandoned Land Mines Case Study*, at 6.
[49] *List of Governors of Utah*, WIKIPEDIA, *available at* http://en.wikipedia.org/wiki/List_of_Governors_of_Utah (last visited Mar. 16, 2013).

2. Collaboration, Not Polarization - Use Collaborative Processes to Break Down Barriers and Find Solutions
3. Reward Results, Not Programs - Move to a Performance-Based System
4. Science for Facts, Process for Priorities - Separate Subjective Choices from Objective Data Gathering
5. Markets Before Mandates - Pursue Economic Incentives Whenever Appropriate
6. Change a Heart, Change a Nation - Environmental Understanding is Crucial
7. Recognition of Benefits and Costs - Make Sure All Decisions Affecting Infrastructure, Development and Environment are Fully Informed
8. Solutions Transcend Political Boundaries - Use Appropriate Geographic Boundaries for Environmental Problems[50]

The negotiation process was developed ad hoc as the stakeholders progressed, but UDEQ was guided by the Enlibra principles. This approach suggested the inclusion of all stakeholders in the process, which was attained to some level. The public's interest in clean drinking water was generally represented by the District, environmental groups had a seat at the table, EPA continued its involvement, and UDEQ and Kennecott maintained extensive involvement in every step of the negotiations.

Gaining Mutual Understanding

Kennecott, the District, and UDEQ, with the backing of EPA, continued negotiations on how best to deal with the mining contamination in and around Kennecott's property. Though the NPL listing remained a potential threat, negotiations became productive between 1994–95. Because of the complex nature of the groundwater contamination, and the various interests involved, a great opportunity for both collaborative learning as well as problem solving presented itself. The uncertainty of legal action also propelled Kennecott, UDEQ, and the District toward more fruitful collaborative efforts. Because none of the parties could be sure what would come of CERCLA claims, and because its investments in remediation and maintaining open channels of

[50] *Enlibra Principles Implemented at the DEQ*, MICHAEL O. LEAVITT CENTER FOR POLITICS & PUBLIC SERVICE, *available at* http://leavitt.li.suu,edu/leavitt/?p=618 (last visited Mar. 15, 2013).

communication had thus far had kept Kennecott of the NPL, collaboration proved to be a safer bet than allowing litigation to move forward.

Legally, Kennecott had an interest in indemnifying itself from future Superfund listings and liability under CERCLA. UDEQ and the District had an interest in preserving their legal claims until appropriate remedies were completed. The primary scientific issues focused on determining the amount of contamination and the possibility of remediation, both of which laid on a foundation of scientific uncertainty: first, because no one was sure how much water was affected, primarily because the affected aquifer is not uniformly shaped and its geologic history made an estimation complicated at best, and second, because there was a dispute as to how much of the sulfate plume was naturally occurring. Two basic committees were formed by the stakeholders: one legal and one technical.[51]

1. The Technical Committee

Players with differing levels of understanding of the problems involved posed a significant challenge to effective collaboration. To develop scientific knowledge and get UDEQ, Kennecott, and the District on an approximately equal level of understanding, the parties relied on those within the group with the most access and knowledge. Kennecott had access to a vast amount of scientific data, and as water rights holders, Kennecott and the District were most (institutionally) knowledgeable about the affected waters, including the aquifer. UDEQ and the District had staff with relevant expertise, and on a day-to-day basis, Kennecott worked with them as well as the environmental representative who was on the technical committee in an effort to conduct collaborative fact-finding.

The technical committee worked to determine what information was needed for the

[51] *Abandoned Land Mines Case Study*, at 7.

parties to gain better understanding of the contamination. Because Kennecott had the greatest access to scientific data, their technical experts would gather the requested information and provide it to the entire committee. Kennecott's monitor wells were used for further data collection, and the company commissioned additional wells to ascertain the extent of the contamination. The District supplied its own internal studies which indicated a pump and treat system to treat the sulfate- contaminated groundwater was feasible.

Experts from each stakeholder group reviewed the data to ensure it was accurate. Early on in the process, meetings between stakeholders were held monthly (later on meetings became quarterly), and all meetings were about working collaboratively.

2. The Legal Committee

Kennecott, UDEQ, and EPA's attorneys met monthly as well. Motivated by the fact that Kennecott's appeals had run out, the legal committee worked to craft an agreement outlining a tenable solution. Kennecott was afraid that "an over-arching consent decree would require unknown remedies at unknown costs."[52] The legal committee agreed that instead of one, over-arching consent decree, UDEQ, EPA, and Kennecott would create individual consent decrees to address varying parts of the site.[53]

COMING TO AN AGREEMENT

Representatives for EPA, Kennecott, UDEQ, and the District, meeting monthly, agreed:

> (1) to develop standard sampling and analysis procedures to be used site wide; (2) to use standard remedies based on characterization results; (3) to have a committee structure that would bring local governments and citizens into the process; (4) to develop a site-wide risk assessment which would be a function of land use and habitat.[54]

[52] *Id.* at 9.
[53] *Id.*
[54] *Abandoned Land Mines Case Study*, at 8. "The progress in negotiations prompted Kennecott to continue its cleanup efforts and to begin new good-faith cleanup actions. This remedy strategy developed at Kennecott was later refined by EPA and adopted as a program called 'presumptive remedies.'"

After 1994, regular public updates were held, during which a facilitator was employed, to inform local landowners and communities, and to receive their feedback on the progress of the work done by UDEQ, Kennecott, and the District.[55] As the parties worked with individual water rights holders, community meetings were held locally for greater accessibility to those affected individuals. Feedback was generated and informed the negotiations regarding the individual consent decrees.

1. The 1995 Memorandum of Understanding

The eventual principle agreement—the 1995 Memorandum of Understanding (MOU)—set the parameters for later individual consent decrees. The MOU demanded cleanup projects within the site could only begin and be enforced after UDEQ, Kennecott, and the District agreed upon remediation. As a result, EPA agreed not to proceed with the NPL listing.

The technical committee established what was and was not "clean" and how certain types and levels of contamination were to be addressed. For instance, the committee agreed the sulfate-contaminated groundwater could be remediated through a pump and treat system, but had not yet agreed on the size of the contamination. The MOU allowed for later individual Consent decrees to deal with portions of the site, as long as they fell within the parameters of the MOU. In this way, if new data emerged after signing the MOU, perhaps indicating a lower amount of water in the aquifer could be reached and remediated, the entire agreement would not be void; the implementation would simply focus on cleaning what *could be* mitigated to the agreed upon standard.

2. Individual Consent Decrees

[55] Information regarding how frequently these public stakeholder briefings occurred was not obtained.

A series of solutions were agreed upon in negotiations, and detailed in individual consent decrees. To date most have been implemented. To contain and prevent future pollution, a surface water collection system was devised and constructed, and reservoirs were triple-lined and updated with a "leak detection and a groundwater monitoring system."[56] In the 1995 NRD consent decree, a trust fund was set up by Kennecott, containing $28 million for remediation of Zones A and B, and $9 million for the lost use. Kennecott, UDEQ, and the District eventually agreed to an area of 58 square miles of sulfate-contaminated groundwater.

Pursuant to the 2003 Joint Proposal and the adopted 2004 Joint Proposal Project Agreements, Kennecott and the District have been able to remediate and reuse the contaminated groundwater from the site. The most heavily polluted waters, those containing the heavy metals, are pumped and treated, and then usually reused for Kennecott's industrial operations.[57] Two reverse osmosis plants, for treating water contaminated with sulfate, were planned under the Agreement as well. Kenncott constructed the first, and the District uses the water to supply clean drinking water at wholesale cost to the cities of Herriman, Riverton, South Jordan, and West Jordan.[58] The District constructed the second osmosis plant in June 2013, with partial funding for construction and operating costs provided by Kennecott.[59] The wells that feed water to both plants are doing a good job of containing the expansion of the two contaminated plume areas and are making strides in the long-term remediation. The plants are providing high-quality drinking water to the affected public and are expected to provide clean drinking water for at

[56] *Reclaiming the environment from a century of mining: A status report on the Last Century Cleanup Program*, RIO TINTO, Sept. 2008, at 6, *available at* http://www.kennecott.com/library/media/Final_Sept_Remediation_LoRes.pdf [hereafter *Reclaiming the environment*].
[57] *Id.* at 7.
[58] *Id.*
[59] *Id.*

least the next four decades.[60]

Kennecott and EPA worked together to carry out extensive contamination removal from the Bingham Creek site.[61] Kennecott provided funding for a study to determine if any adverse health effects had been caused by the tailings around the Creek; fortunately for residents, the results were very positive.[62] Additionally, Kennecott undertook site-wide removal of contaminated soil and waste rock, placing the materials in appropriate repositories to further prevent the spread of harmful substances.[63] The final individual consent decree for OU 2—the south end groundwater, approved in 2007, requires Kennecott to continue its cleanup operations, though the site is not slated for addition to the NPL.[64]

Cleanup efforts are projected to take over 40 years and cost Kennecott $400 million.[65] But what is probably most remarkable is that through the use of collaboration and innovative risk taking, Kennecott was able to develop a highly profitable land reuse strategy, culminating in the construction of a state-of-the-art planned residential community, and opening up an entirely new venture for the company.[66]

As a result of the creative collaborations that took place regarding the cleanup site, Kennecott created Kennecott Land Company. Recognizing that the land could be of significant value, based on expected population growth of the Salt Lake Valley, Kennecott

[60] As of May 2014, the District has completed the second reverse osmosis plant, which has successfully operated since June 2013. The wells serving both reverse osmosis plants are reported to be containing expansion of the two contaminant plume areas and making strides in the long-term remediation. The two plants are continually providing high-quality drinking water to the affected public.
[61] *Id.*
[62] *Id.*
[63] *Id.* at 8–12.
[64] Frances Johnson, *Kennecott invests $400 million in removing Utah land from proposed inclusion on EPA's Superfund list*, UTAH FOCUS, Feb. 2009.
[65] *Second Largest U.S. Copper Producer Implements Comprehensive Clean at Bingham Canyon Mine in Utah*, DEP'T OF JUSTICE, July 9, 2007; Frances Johnson, *Kennecott invests $400 million in removing Utah land from proposed inclusion on EPA's Superfund list*, UTAH FOCUS, Feb. 2009, at 5.
[66] *Historic Cleanup*, KENNECOTT UTAH COPPER, 2012, *available at* http://kennecott.com/historic-cleanup.

evaluated the reuse possibilities for the site.[67]

The trust that Kennecott had gained with the municipalities, whose interests were advocated for by the District, allowed Kennecott and the City of South Jordan to jointly plan and create a sustainable residential community built on reclaimed land.[68]

The mixed-use community covers over 4,000 acres and includes homes, shops, parks, and a man-made lake. To date, there are no lingering disputes regarding the site.

ANALYSIS/ LESSONS LEARNED

The process, and its success, proved influential on the primary stakeholders. At the working level, UDEQ still employs the same kind of collaborative techniques utilized in the Kennecott negotiations.[69] Similarly, Kennecott continues to use the same collaborative stakeholder process that developed *ad hoc* in its attempt to stay off the Superfund list. The mining company is now analyzing options for how to manage current and future waste rock placement through this process—evidence that negotiations and their success changed corporate behavior. The District, too, was convinced through its experience detailed here, that the stakeholder process produces better results than any other, including litigation.

1. Stakeholder Involvement

Early in the process, stakeholders learned the importance of identifying who needs to be at the negotiating table and how to get them there. The primary stakeholders learned through this process that anyone impacted by either the problem or the solution needs to be included. When Kennecott and the State of Utah moved forward on the settlement for the Natural Resources

[67] *Abandoned Land Mines Case Study*, at 11.
[68] *Id.*
[69] This can be evidenced by the work done with the local communities in the Monument negotiations during the Clinton administration, the coal bed methane extraction negotiations, the environmental negotiations that took place within the context of the 2002 Winter Olympics, and the investigation of contamination from animal feeding companies.

Damage claim, no one had asked the question of who else should be involved. The District, which would have been directly affected by the settlement, was able to block the court's approval of the settlement, sending all the parties back to the drawing board. The District had information and knowledge regarding some

of the affected water, and its inclusion proved useful throughout later negotiations, and penultimate in reaching a sustainable solution. If additional stakeholders had been included at the beginning, time and money could have been saved. More importantly, important stakeholders, like the District and local landowners, would have had great buy in and trust in the process, as well as in Kennecott and UDEQ, from the beginning.

Ultimately however, because of the negotiations surrounding the claims at the Kennecott site, the primary players in this situation have taken the ideas of stakeholder involvement to heart. Kennecott still uses these processes when addressing issues of environmental stewardship, and the company places a strong emphasis on engaging with stakeholders. To ensure that the right people are at the table, Kennecott "identifies" stakeholders prior to starting negotiations, and then routinely reconsiders throughout the process; if anything changes or new stakeholders become affected, Kennecott can then engage them in discussions.

2. Institutional Attitudes Toward Collaboration

The institutions involved in the Kennecott site cleanup negotiations, and their attitudes toward collaboration were key. Guiding principles for large institutions, such as Enlibra which are easy to communicate and share, are important to assure those on the working level of negotiations can understand the same vision and perspective as those leading the institutions. UDEQ's use of collaboration and the Leavitt Administration's promotion of the use of the

Enlibra principles gave UDEQ an effective institutional perspective from which to address the process. The Enlibra principles emphasize collaborative processes aimed at finding solutions, and these principles were part of every UDEQ employee's performance plan.[70] Each staff member working on either the technical or legal committees focused on avoiding polarization.

Kennecott's corporate decision to become an environmental partner and fully engage in the stakeholder process when dealing with environmental stewardship issues was also paramount. Realizing that approaching all actions through a lens of environmental stewardship has allowed Kennecott to become an effective environmental partner in the state.

3. Individual Personalities

Individuals were also of upmost importance to the success of the Kennecott negotiations. The result of the Kennecott negotiations would likely have been vastly different had management failed to embrace collaboration with multiple stakeholders or if Dianne Nielson had not taken over UDEQ. Both individuals were open to collaborative learning and solutions, which allowed the negotiations, which had been largely unsuccessful to that point, to become effective.

4. Objective Standards

Establishing standards rather than static remediation plans also aided the progression of negotiations. As new information was developed or acquired, and the scope of possible remediation changed, new agreements did not have to be reached, drafted, and approved. Baseline standards were met, and although there were still disagreements about how much remediation may be accomplished, clean up efforts were not stalled.[71] Having objective

[70] *Enlibra Principles Implemented at the DEQ*, MICHAEL O. LEAVITT CENTER FOR POLITICS & PUBLIC SERVICE, *available at* http://leavitt.li.suu,edu/leavitt/?p=618 (last visited Mar. 15, 2013).
[71] Kennecott did believe that less water could feasibly be remediated than the amount represented in the 1995 NRD Consent Decree, but conceded an issue of groundwater recharge amounts in negotiations.

standards, despite changing data or interpretations, offered legitimacy to the process. Kennecott (and the other stakeholders) needed only to meet the standard established in the negotiations to satisfy the requirements of the MOU. These objective standards allowed a very large area of land management to be tackled methodically, and provided parameters which reflected the District and UDEQ's interests, and prevented Kennecott from feeling like it was essentially signing a blank check.

Additionally, objective standards represented a best practice, because there will always be different interpretations of data. In fact, stakeholders never reached an agreement regarding the way they thought the groundwater system operated. However, by creating a matrix to address different levels and types of contamination, negotiators were not boxed into finding a single consensus approach to remediation.

5. The Importance of Fostering Relationships and Building Trust

The process that unfolded took over two decades—and is continuing still—and processes like it, rely on trusting relationships between the parties. Over the decades, personnel have changed, yet stakeholders strived to maintain open communication and good working relationships with one another. The trust that Kennecott earned through its commitment to sustainable remediation allowed for a successful partnership between Kennecott and the City of South Jordan, which led to the creation of the Daybreak residential community.

The fact that Kennecott continued its clean up efforts, even when negotiations stalled, garnered the company's trust with the other stakeholders. That conduct underscored Kennecott as truly interested in remediation of mining-affected areas and not just in avoiding liability. Without that action, it is unclear whether the parties would have been able to restart negotiations

again in the mid-1990s, which lead to a signed Memorandum of Agreement and the implementation of one of the most original and remarkable CERCLA cleanups in history.

6. Focusing on Interests, Not Positions

At one point, legal representatives on various sides became entrenched in their positions and progress stalled. They were essentially given a "time-out," so that progress could continue and the focus on creative solutions and implementation could resume.

This practice served the stakeholders well, by not allowing differing opinions to foreclose everyone from getting the best possible agreement into place.

UDEQ's utilization of the Enlibra principles also emphasized trust by encouraging those involved to "break down barriers" to find solutions, use objective data, and appreciate local concerns.