

DEC 16 1993

MEMORANDUM FOR: Joseph J. Holonich, Acting Chief,  
LLUR/LLWM/NMSS

THROUGH: Mike Fliegel, Section Leader  
Special Issues Section  
LLUR/LLWM/NMSS

FROM: Latif Hamdan  
LLUR/LLWM/NMSS

SUBJECT: TRIP REPORT ON VISIT TO URFO

Please find enclosed a trip report on my visit to Uranium Recovery Field Office (URFO) during the period October 25 through November 4, 1993. The report gives an overview of the present status of URFO's licensed uranium-recovery sites and applications for new licenses. In addition, the report includes status-summaries of groundwater corrective action and restoration programs, and other supporting information, for individual sites. The information provided in the report should be useful to headquarter staff assigned to the Title II program during the transition period.

The visit to URFO was very useful and fruitful. I have learned a good deal about URFO's licensing work activities. I have also had the opportunity to see, get first-hand information, and participate in the inspection of a licensed large in-situ solution uranium-recovery site.

Please call if you have any questions or if you need additional information.

(SIGNED) PAUL H. LOHAUS

Latif Hamdan  
LLUR/LLWM/NMSS

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TRIP REPORT  
LATIF HAMDAN'S VISIT TO URFO  
OCTOBER 25 THROUGH NOVEMBER 4, 1993

**Itinerary**

10/25-

11/2 : At URFO's office in Denver; and,

11/2-4 : At Casper, Wyoming (to participate in an inspection of Power Resources Inc.'s in situ solution uranium-recovery facility in south-central Wyoming).

**Purpose of Trip**

As a result of decision to close URFO, the main purpose of this trip was to work with Gary Konwinski and other groundwater specialists on URFO staff, and obtain information on, and assess the status of, URFO's work relevant to groundwater protection at licensed (Title II) uranium recovery and mill tailing sites.

**Main Trip Activities**

- Discussed with Gary Konwinski and other URFO staff the ongoing work relevant to groundwater protection at licensed sites;
- Collected information on licensee files and examined selected files;
- Collected information and documented the status of groundwater protection programs for individual licensed sites; and,
- Visited and participated in the inspection of an in situ solution site that is operated by Power Resources, Inc. in south-central Wyoming,

**Status of Title II Licensing Activities**

Information on the status of uranium-recovery sites and facilities licensed by URFO under the Title II program as of November 1, 1993 is provided in Tables 1 through 4. This information includes an overview of URFO's licensed uranium recovery sites (Table 1); applications for new licenses (Table 2); and summaries of the status of groundwater corrective action/restoration programs for individual mill sites (Table 3) and individual in situ solution sites (Table 4).

URFO currently has a total of 28 licensed sites and facilities, including 20 uranium mill sites, 7 in situ uranium solution sites, and 1 laboratory facility. In addition, URFO has one license application for a new in situ solution site, and expects that it may receive two more applications for other in situ solution operations in the future.

Currently, none of the licensed mill sites is operating for commercial production, four are on a standby status, eleven have decommissioning and reclamation programs in progress, and five are for material possession only. All but one of the licensed mill sites have tailings on-site, and the quantity of tailings per site varies from less than 1 million tons (two sites) to more than 30 million tons (one site). Financial sureties vary from less than \$1 million

(two sites) to more than \$30 million (one site).

Three of the licensed in situ solution sites are operational at present, three are on a standby status, and one is for material possession only. Financial sureties vary from less than \$1 million (three sites) to more than \$10 million (one site).

The licensed laboratory facility belongs to Bingham Environmental of Salt Lake City, Utah, which has recently obtained a license from URFO to possess 11e.(2) byproduct material, so that it may conduct tests to determine the compatibility of the in situ clay at Envirocare's proposed 11e.(2) site in Clive, Utah.

#### Status of Groundwater Corrective Action/Restoration Programs

Summary sheets providing information on groundwater corrective action/groundwater restoration programs, and other supporting information, were prepared for individual mill sites (Table 3), and individual in situ solution sites (Table 4). These tables provide a quick reference that may be used by headquarter staff assigned to the Title II program during the transition period.

The summary sheets in Tables 3 and 4 were prepared based on information provided to me by URFO staff. In time, the corrective action/restoration programs for all of the licensed sites will need to be thoroughly reviewed, based on all of the information for individual sites in URFO files. This will be necessary to objectively assess the status and effectiveness of the groundwater cleanup activities to date, and to review any modifications to existing programs proposed by licensees.

However, some observations can still be made based on presently available information obtained from URFO staff on this trip. Specifically, the available information indicates that a significant number of the licensed sites require corrective action programs (21 sites: 18 mill and 3 in situ solution sites). Corrective action/restoration programs have been started at a total of 16 sites (14 mill sites and 2 in situ solution sites), but all have outstanding issues to be resolved and therefore require rigorous follow up. Corrective action programs have yet to be developed for the remaining 5 sites (4 mills and 1 in situ solution site).

There are therefore outstanding corrective action issues to be resolved at 21 of the 27 licensed sites. Only 6 sites (2 mill and 4 in situ solution sites) have no corrective action, either because corrective action has been completed (1 site), or not required to date (5 sites).

Furthermore, the corrective action programs are impeded by other important factors. It is noted that URFO presently has outstanding ACL applications for three mill sites, and five applications are expected in the near future. URFO

has long asked headquarters for guidance on ACL application reviews, and licensee applicants have been told that the reviews were pending the issuing of the ACL guidance. Issuance of the ACL guidance is currently pending an agreement with the EPA on an acceptable risk level. Further delays in ACL application reviews will impact the scheduling and duration of corrective actions programs at several sites. We need to either expedite the ACL guidance, or proceed to review the ACL applications on a site-specific basis without the guidance.

It is also noted that the assessment of some ongoing and proposed corrective action practices at some sites is pending policy guidance by headquarters on the following matters: (a) disposal of liquid wastes from uranium recovery operations in surface water bodies, through land applications, and by deep well injection; and (b) disposition and decommissioning of liners at uranium mill tailings sites. These policies need to be established before corrective action programs at some licensed sites can be evaluated or concluded.

In addition, we need to start preparing for the taking over of two uranium mill sites that the EPA has also designated as Superfund sites; these are Church Rock and Homestake sites, in New Mexico. Both sites require close follow up and monitoring of their groundwater corrective action programs; and both require active interaction with the EPA and its consultants (in fulfillment of an existing MOU for the former and a MOU soon to be signed for the latter), as well as interaction with the State of New Mexico and the Navajo Nation. We may want to assign headquarter staff to work with URFO on these sites as soon as possible before URFO closes.

We may also want to consider giving a high priority to the following in situ solution sites because they have ongoing commercial production operations, with operational schedules that the licensees will want to meet: Ferret-Crow Butte site, Crawford, Nebraska; Power Resources, Inc.'s Highland site, S. Powder River, Wyoming; and Total Irrigaray/Chris Ranch site, N. Powder River Basin, Wyoming.

A high priority should also be given to the following mill sites, due to the complexity of the corrective action programs at these sites: Pathfinder-Lucky MC site, Gas Hills, Wyoming; Quivira-Ambrosia Lake site, Grants, New Mexico; Rio Algom-Lisbon site, Lisbon, Utah; and Umetco-Gas Hills site, Gas Hills, Wyoming.

#### Information on File at URFO

URFO maintains docket files for its licensees. These files contain all of the documentation pertaining to the licenses, mainly including licensee applications submittals and technical documents and reports submitted in support of applications for licenses and license amendments; NRC-generated documents including licenses and license amendments; and relevant correspondence.

In addition, URFO staff have copies of selected license documents which are

kept in staff working files for individual sites. Staff's working files for licensed mill sites typically contain copies of the following records relevant to groundwater protection programs at these sites:

- Original submittal for detection and compliance monitoring;
- Background baseline groundwater quality and groundwater protection standards;
- Corrective action programs, and program amendments;
- Records of annual (and sometimes semi-annual) corrective/restoration action reviews;
- Analytical water quality data from corrective action programs and other monitoring programs;
- Technical documents submitted by licensees in support of licenses and license amendments;
- State file;
- Relevant correspondence;
- License and license amendments;

Staff's working files for licensed in situ solution sites typically contain copies of the following records relevant to groundwater protection programs at these sites:

- Contaminant excursions, and programs for restoration of groundwater quality;
- Background baseline groundwater quality;
- Background hydrogeologic information (water level and potentiometric head maps, sections, logs, pumping test data, etc.);
- Environmental monitoring records;
- Documentation of environmental assessments;
- State permits and annual reviews;
- Relevant correspondence;
- License and license amendments;

It is estimated that about 50 linear feet of shelf space and five 3-foot, 5-drawer file cabinets will be required by headquarter staff to receive URFO's staff working files.

#### Visit to Power Resources, Inc.'s Highland In Situ Solution Site

This visit was made with URFO staff, and involved the following two main activities:

- Participation in a facility inspection, with Pete Garcia and Cynthia Miller-Corbett representing URFO. The facility inspection involved inspection of facilities, operations, procedures, and included a tour of old and new production fields; injection, recovery, and monitoring wells; "header" facilities with injection and recovery apparatus batteries; satellite ion exchange and "bleed" facilities; main processing facility; analytical laboratory; radium settlement ponds; a storage reservoir and land application facility for disposal/irrigation use of "treated" bleed water; and,
- Participation in a meeting with PRI to discuss a license renewal application and other issues pertaining to proposed changes to facility operations, and pending license amendments; Ed Hawkins and Cynthia Miller-Corbett represented URFO at this meeting.

The results of the inspection have been documented in Inspection Report 40-8857/93-01 by URFO. My participation in inspection resulted in identifying one violation with regard to water sample collection procedure followed by PRI staff, which have been documented in the inspection report.

The minutes of the meeting with PRI has been documented by URFO (Docket File No. 40-8857; dated November 12, 1993).

It is also noted that PRI is using land application on a 54-acre site for disposal of partially treated bleed water, after the water is passed through radium settling ponds and collected in a surface reservoir of a 25-million gallon capacity. In addition, wastewater from uranium production in the main processing facility is also discharged by injection into an abandoned oil well that is reportedly 9,500-10,000 feet deep; the wastewater injection is made at an average rate of 40 gpm, 6-7 hours a day. Both disposal methods are apparently authorized in the license for this site. However, such disposal practices have not been generically approved by NRC or URFO, and requests have been received by URFO to use similar disposal practices at other sites. URFO has requested headquarters for guidance on the generic application of such disposal practices, and the request is currently under review and evaluation. The decision may impact PRI as well as other licensees.

My participation in this visit to PRI's Highland In Situ Solution Facility

was a very useful and fruitful experience. It gave me an opportunity to see and obtain first-hand knowledge about this site, which is one of three licensed sites commercially operating at present, and one that headquarter staff may soon be taking over from URFO staff.

#### Acknowledgement

I would like to acknowledge with appreciation the assistance, cooperation, and input I received on this trip from all of URFO's staff. I want to particularly thank Gary Konwinski, Cynthia Miller-Corbett, Pete Garcia, and Ed Hawkins; Gary Konwinski coordinated the entire effort to provide the information used in preparing the summary of the status of URFO's activities in the attached tables.

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LIST OF TABLES

- Table 1: Overview of Licensed Uranium-Recovery Facilities
- Table 2: Applications for New Licenses
- Table 3: Status of Licensed Mill Sites
- Table 4: Status of Licensed In-Situ Solution Sites



Table 1: Overview of Licensed Uranium Recovery Facilities  
(As of Nov 1, 1993)

Characteristic	Status	Type and Number of Facility		
		Mills	In-Situ Solution	Total
Commercial Operation	Operational: Commercial Production	0	3	3
	Standby	4	3	7
	Material Possession Only	5	1	6
	Decommissioning/Reclamation in Progress	11	0	11
Financial Surety (\$ Million)	< 1	2	3	5
	1-5	6	1	7
	5-10	5	2	7
	10-15	4	1	5
	15-20	2	0	2
	20-25	0	0	0
	25-30	0	0	0
30-35	1	0	1	
Quantity of Tailings (million tons/yr)	< 1	2	NOT APPLICABLE	2
	1-5	7		7
	5-10	5		5
	10-15	3		3
	15-20	0		0
	20-25	2		2
	25-30	0		0
30-35	1	1		
Safety Evaluation Report	Completed	15	6	21
	Under Preparation	0	1	1
	None Prepared	5	0	5
Environmental Report	Completed	19	6	25
	Under Preparation	0	0	0
	None Prepared	0	1	1
	Information Not Available	1	0	1
Environmental Impact Statement	Completed	14	2	16
	Under Preparation	5	0	5
	None Prepared	0	5	5
	Information Not Available	1	0	1

TABLE 1  
CONTINUED

Environmental Assessment	Completed	13	5	18
	Under Preparation	0	0	0
	None Prepared	7	2	9
Tailings Disposal Relative to Grade	Above Grade	19	NOT APPLICABLE	19
	Below Grade	0		0
	Information Not Available	1		1
Liner under Tailings	Liner Installed	4	NOT APPLICABLE	4
	No Liner Installed	15		15
	Information Not Available	1		1
Ore/Waste Storage Areas	Liner Installed	0	NOT APPLICABLE	0
	No Liner Installed	16		16
	Information Not Available	4		4
Underground Drinking Water Sources	Present	8	6	14
	Not Present	11	0	11
	Information Not Available	1	1	2
Exempted Aquifers	Present	0	5	5
	Not Present	20	2	22
	Information Not Available	0	0	0
Present/Potential Uses of Groundwater	Drinking Water Use	0	0	7
	Stock Watering & Wildlife	12	0	12
	None	0	8	8
Groundwater Restoration/Corrective Action	Ongoing	12	1	13
	None Practiced to Date	3	2	5
	None Required to Date	5	4	9
ACLs	Applied for	3	0	3
	Application Expected	6	0	6
	None to Date	11	7	18

TABLE 1  
CONTINUED

Surficial reclamation	Completed or Nearing Completion	1	NOT APPLICABLE	1
	Started and Ongoing	15		15
	Not Started	4		4
Long-Term Surveillance Plan	Submitted	1	0	1
	Not Submitted to Date	19	7	26
Issues Requiring Attention & Resolution	Significant	16	6	22
	Routine	3	1	4
	None	1	0	1

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Table 2: Applications for New Licenses

(As of November 1, 1993)

FACILITY: HYDRO RESOURCES - CROWNPOINT, NM

A: Groundwater Information/Issues

Serial Number	Licensee & Location	License #	Facility Type	Leaching Process
APPLIC-1	HYDRO RESOURCES-CROWN POINT Crownpoint, NM	None Issued to Date.	In-Situ Solution	Hydrogen Peroxide (Oxygen)
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• A license application has been filed with URFO;</li> <li>• This is an application for a multiple-site commercial ISL;</li> <li>• NRC has lead in preparing EIS;</li> <li>• Expect a complex coordination process involving the State of New Mexico, Bureau of Indian Affairs, Bureau of Land Management, EPA, Navajo Nation, and the public;</li> <li>• Potentially very difficult and complex issues to be resolved.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Joel Grimm</p>				

TABLE 2  
CONTINUED

FACILITY: HYDRO RESOURCES - CROWNPOINT, NM

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	Under preparation.
Environmental Report (ARE) Prepared ?	Y	Part of multiple application document.
Environmental Impact Statement (EIS) Prepared ?	Y	Under Preparation.
Environmental Assessment (EA) Prepared ?	NA	
Any Surface Impoundments ?	Y	Brine evaporation ponds proposed.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	
Any Surface/Site Reclamation in Progress ?	NA	
Long-Term Surveillance Plan Submitted ?	NA	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	NA	

TABLE 2  
CONTINUED

FACILITY: BIAVA-NOSE ROCK, Crownpoint, NM

A: Groundwater Information/Issues

Serial Number	Licensee & Location	License #	Facility Type	Leaching Process
APPLIC-2	BIAVA-NOSE ROCK; Crownpoint, NM	None Issued to Date.	In-Situ Solution	Not Available at this time.
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• License application is only a possibility;</li> <li>• Remote possibility of a ISL license issuance.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Joel Grimm</p>				

TABLE 2  
CONTINUED

FACILITY: BIAVA-NOSE ROCK, Crownpoint, NM

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	NA	License application has not been submitted.
Environmental Report (ARE) Prepared ?	NA	
Environmental Impact Statement (EIS) Prepared ?	NA	
Environmental Assessment (EA) Prepared ?	NA	
Any Surface Impoundments ?	NA	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	NA	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	NA	
Any Present or Potential Uses of Groundwater ?	NA	
Any Surface/Site Reclamation in Progress ?	NA	
Long-Term Surveillance Plan Submitted ?	NA	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	NA	

TABLE 2  
CONTINUED

FACILITY: SOLUTION MINING - POWDER RIVER BASIN, WY

A: Groundwater Information/Issues

Serial Number	Licensee & Location	License #	Facility Type	Leaching Process
APPLIC-3	SOLUTION MINING - POWDER RIVER BASIN S. Powder River, WY	NONE	In-Situ Solution	Not Available at This Time
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• License application has not been filed, but there is a possibility that it may be filed in the future.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Cynthia Miller-Corbett.</p>				



TABLE 2  
CONTINUED

FACILITY: SOLUTION MINING - POWDER RIVER BASIN, WY

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	NA	License application has not been submitted.
Environmental Report (ARE) Prepared ?	NA	
Environmental Impact Statement (EIS) Prepared ?	NA	
Environmental Assessment (EA) Prepared ?	NA	
Any Surface Impoundments ?	NA	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	NA	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	NA	
Any Present or Potential Uses of Groundwater ?	NA	
Any Surface/Site Reclamation in Progress ?	NA	
Long-Term Surveillance Plan Submitted ?	NA	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	NA	

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Table 3: Status of Licensed Mill Sites  
(As of November 1, 1993)

Site: ANC-GAS HILLS

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-1	ANC-GAS HILLS Gas Hills, WY	SUA-667	5.9	3.009 M	Acid leaching
<u>Site-Specific Groundwater Standards</u>					
<ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• ACL application received in 1989.</li> </ul>					
<u>Status of Corrective Action/Groundwater Restoration</u>					
<ul style="list-style-type: none"> <li>• Corrective action program is underway and involves retrieval and disposal of contaminated groundwater into evaporation pond.</li> </ul>					
<u>Issues Requiring Attention/Remarks</u>					
<ul style="list-style-type: none"> <li>• Site/tailings remediation planned for completion in 1995, but by a submittal dated 10/21/1993, licensee requested an amendment to reschedule reclamation milestones, request is under review;</li> <li>• Enhancement of CAP to be investigated;</li> <li>• Annual CAP review;</li> <li>• Action needed on ACL application.</li> </ul>					
<u>Staffing</u>					
Present Project Manager: Cynthia Miller-Corbett					

KEY:

NA: Not applicable and/or not available.  
 ACL: Alternative Concentration Limit.  
 CAP: Corrective Action Program.  
 ALARA: As Low As Reasonably Achievable.  
 TPD: Tons Per Day.  
 EA: Environmental Assessment.  
 TER: Technical Evaluation Report.  
 NPDES: National Pollution Discharge Elimination System.  
 cy: Cubic Yards.  
 gpm: Gallons Per Minute.

TABLE 3  
CONTINUED

Site: ANC-GAS HILLS

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ER) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	
Environmental Assessment (EA) Prepared ?	Y	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	N	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Stock/Wildlife
Surface/Site Reclamation in Progress ?	Y	Interim cover placed.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: ARCO-BLUE WATER

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-2	ARCO-BLUE WATER Grants, NM.	SUA-1470	24.2	31.2 M	Initially alkaline leach; however, most tails generated using acid leach.
<p><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• ACL application received in 1989.</li> </ul>					
<p><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Corrective action program has been implemented and ALARA has been demonstrated for the constituent levels that have been realized; however, ACL application has not been acted upon, and URFO therefore plans to inform licensee to reactivate corrective action.</li> </ul>					
<p><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings remediation planned for completion 1995;</li> <li>• Modifications to CAP to be investigated;</li> <li>• Annual CAP review;</li> <li>• Action needed on ACL application.</li> </ul>					
<p><u>Staffing</u></p> <p>Present Project Manager: Pete Garcia</p>					

TABLE 3  
CONTINUED

Site: ARCO-BLUE WATER

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	N	Detailed technical review memos prepared in 1986.
Environmental Report (ARE) Prepared ?	Y	Submitted to the State in support of license renewal.
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	N	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	Y	Evaporation ponds, being reclaimed.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Livestock use.
Surface/Site Reclamation in Progress ?	Y	Interim cover placed; radon barrier under construction.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: ATLAS-MOAB

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-3	ATLAS-MOAB Moab, Utah	SUA-917	10.6	\$ 6.5 M	Alkaline leach circuit and acid leach circuit (600 TPD each); Atlas is known for fine grind tails.
<u>Site-Specific Groundwater Standards</u>					
<ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• ACL application received in 1989.</li> </ul>					
<u>Status of Corrective Action/Groundwater Restoration</u>					
<ul style="list-style-type: none"> <li>• CAP consists of tailings dewatering, which is still active, but considered minimal;</li> <li>• Other corrective action measures have been evaluated but not implemented to date due to low benefit/cost considerations.</li> </ul>					
<u>Issues Requiring Attention/Remarks</u>					
<ul style="list-style-type: none"> <li>• Site/tailings remediation planned for completion 1996;</li> <li>• EA/TER review and follow up;</li> <li>• Annual CAP review;</li> <li>• Background for Radium-226 concentration in soil have yet to be established (needed to establish standard);</li> <li>• Standard for Radon-226 established at 6 pCi/l (above the 3 pCi/l normal standard) in consideration of the site characteristics (air traps can form locally);</li> <li>• ACL standard to be assessed.</li> </ul>					
<u>Staffing</u>					
Present Project Manager: Dana Ward					

TABLE 3  
CONTINUED

Site: ATLAS-MOAB

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	February, 1981
Environmental Report (ARE) Prepared ?	Y	April, 1993
Environmental Impact Statement (EIS) Prepared ?	Y	1979
Environmental Assessment (EA) Prepared ?	Y	A new EA is currently under preparation.
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	Y	Small water pond.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Discharge to river.
Surface/Site reclamation in Progress ?	Y	Mill structure down; 65% of interim cover placed.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: EXXON-HIGHLANDS

A. Groundwater Corrective Action

Serial number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-4	EXXON-HIGHLANDS S. Powder River, WY	SUA-1139	11.3	\$ 2.15 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• ACL application is expected in January, 1994.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Contaminated groundwater recovered through several pumping wells, at low discharge rates; recovered water is disposed in two clay-lined evaporation ponds on tailings surface.</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings reclamation in progress;</li> <li>• A submittal requesting approval to end recovery of contaminated groundwater was received October 21, 1993;</li> <li>• Annual CAP review;</li> <li>• Expect a ACL application review in 1994.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Cynthia Miller-Corbett</p>					



TABLE 3  
CONTINUED

Site: EXXON-HIGHLANDS

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	1978 & 1982.
Environmental Impact Statement (EIS) Prepared ?	Y	1973
Environmental Assessment (EA) Prepared ?	Y	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	NA	
Other Surface Impoundment ?	Y	Reservoir.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	NA	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	NA	
Surface/Site Reclamation in Progress ?	Y	Tailings cover placed, except for wick area as part of seepage mitigation system.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: GRACE ENGY-GRACE

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-5	GRACE ENGY-GRACE Three heap-leach sites at different locations in New Mexico, under same license	SUA-1480	0	\$ 0	Hydrogen Peroxide (Oxygen)
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background (average of measured baseline groundwater quality in background wells).</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• None as of November 1, 1993;</li> <li>• Need for groundwater characterization to be determined.</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• All three sites need to be reclaimed;</li> <li>• Commission is likely to issue order to secure reclamation plan from licensee;</li> <li>• Licensee may be a run-away operator.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Dawn Jacoby</p>					

TABLE 3  
CONTINUED

Site: GRACE ENGY-GRACE

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION / REMARKS
Safety Evaluation Report (SER) Prepared ?	N	
Environmental Report (ARE) Prepared ?	NA	Not Known
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	N	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	N	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	N	May be livestock use.
Surface/Site Reclamation in Progress ?	N	
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: HOMESTAKE-MILAN

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (M <sup>3</sup> /Year)	Surety (\$ Million)	Leaching Process
MIL-6	HOMESTAKE-MILAN Grants, NM	SUA-1471	22.0	\$ 20 M	Alkaline.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Huge injection/recovery system for treatment of contaminated groundwater; recovered water is disposed in a 23-acre lined evaporation pond with a 100-acre sprinkler system on the tailings pile;</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings reclamation planned for completion in 1996;</li> <li>• Expect modifications to reclamation plan;</li> <li>• Need to follow up on mill decommissioning, plan already approved;</li> <li>• Need to follow up on cleanup of wind-blown materials (cleanup plan already approved);</li> <li>• Annual CAP review;</li> <li>• EPA Superfund site, requires coordination with the EPA.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Pete Garcia</p>					

TABLE 3  
CONTINUED

Site: HOMESTAKE-MILAN

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	N	Detailed technical review memos prepared in 1986.
Environmental Report (ARE) Prepared ?	Y	Submitted to State in support of license renewal.
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	N	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	N	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Stock/Domestic
Surface/Site Reclamation in Progress ?	Y	Placement of interim cover and cutback slopes started.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: KENNECOTT-SWEETWATER

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-7	KENNECOTT-SWEETWATER Red Desert, WY	SUA-1350	2.4	\$ 4.557 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Most metals &amp; radionuclides are at or near standards;</li> <li>• Corrective action program "maturing".</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings reclamation planned for completion in 2007;</li> <li>• Site has a 40-acre synthetic-lined tailings impoundment, and liner is in poor condition;</li> <li>• Annual CAP review;</li> <li>• Mill is in a standby mode at present, but could restart commercial production in 1994/95;</li> <li>• Corrective action program needs to be formulated and implemented.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Paul Michaud</p>					

TABLE 3  
CONTINUED

Site: KENNECOTT-SWEETWATER

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	December, 1978.
Environmental Assessment (EA) Prepared ?	N	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	Y	Evaporation pond, with pond bottom and sides lined with synthetic liner. Additional evaporation ponds may be required if commercial production is resumed.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	Good aquifer with good quality water; yields 200 gpm.
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Livestock use.
Surface/Site reclamation in Progress ?	N	Standby facility; commercial production may resume.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: PATHFINDER-LUCKY MC

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-8	PATHFINDER-LUCKY MC Gas Hills, WY	SUA-672	10.7	\$ 10.091 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• Site will need ACLs</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Complex CAP involving tailings dewatering, and freshwater injection and recovery of contaminant seepage into groundwater;</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings reclamation planned for completion in 1998;</li> <li>• Modification to reclamation plan is expected;</li> <li>• Soil cleanup plan need to be approved;</li> <li>• Annual CAP review;</li> <li>• ACL review will be needed.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Pete Garcia</p>					



TABLE 3  
CONTINUED

Site: PATHFINDER-LUCKY MC

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	
Environmental Assessment (EA) Prepared ?	Y	
Disposal Below Grade ?	Y	Natural depression below grade.
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	N	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Livestock use.
Surface/Site Reclamation in Progress ?	Y	All tailings are covered with an interim cover.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: PATHFINDER-SHIRLEY BASIN

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-9	PATHFINDER-SHIRLEY BASIN Shirley Basin, WY	SUA-442	7.1	\$ 5,941 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40;</li> <li>• Site may need ACLs for a small number of constituents.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Minimal CAP involving seepage recovery, freshwater injection, and sprinkler evaporation loss;</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings reclamation planned for completion in 2006;</li> <li>• EA for mill reclamation/decommissioning needs to be issued;</li> <li>• Mill decommissioning plan needs to be approved;</li> <li>• Mill reclamation plan need to be approved;</li> <li>• ACL review may be needed;</li> <li>• Annual CAP review.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Pete Garcia</p>					

TABLE 3  
CONTINUED

Site: PATHFINDER-SHIRLEY BASIN

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	
Environmental Assessment (EA) Prepared ?	Y	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	N	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	N	
Surface/Silt Reclamation in Progress ?	Y	Placement of interim cover and evaporation of solution in progress.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: PETROTOMICS-SHIRLEY BASIN

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-10	PETROTOMICS-SHIRLEY BASIN Shirley Basin, WY	SUA-551	6.4	\$ 5.032 M	Acid leach.
<u>Site-Specific Groundwater Standards</u>					
<ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> </ul>					
<u>Status of Corrective Action/Groundwater Restoration</u>					
<ul style="list-style-type: none"> <li>• Licensee was authorized to implement an injection/recovery CAP because seepage/recovery was not effective; but in a recent meeting, licensee requested time to develop a chemical "redox" program instead, and a formal request for this purpose is forthcoming.</li> </ul>					
<u>Issues Requiring Attention/Remarks</u>					
<ul style="list-style-type: none"> <li>• Site/tailings reclamation planned for completion in 1995;</li> <li>• Amendment needed to modify CAP for both the Upper Wind River sand and the Main River sand-treated as two different aquifers with apparent communication beneath a portion of the tailings impoundment.</li> <li>• Amendments are expected to modify (a) requirements for groundwater analyses, and (b) radiation safety program (applications for these amendments have not yet been submitted by licensee);</li> <li>• Annual CAP review.</li> </ul>					
<u>Staffing</u>					
Present Project Manager: Cynthia Miller-Corbett					

TABLE 3  
CONTINUED

Site: PETROTOMICS-SHIRLEY BASIN

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	9/94, in support of license renewal.
Environmental Report (ARE) Prepared ?	Y	3/81, in support of license renewal.
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	Y	2/93, in support of evaporation pond construction; and, 9/84, in support of license renewal.
Disposal Below Grade ?	NA	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	N	Not on immediate property.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	N	
Surface/Site Reclamation in Progress ?	Y	
Surface/Site Reclamation Completed ?		
Tailings Cover Placed; Rock or Vegetative Cover ?		
Long-Term Surveillance Plan Submitted ?		
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?		

TABLE 3  
CONTINUED

Site: PLATEAU-SHOOTARING CANYON

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-11	PLATEAU-SHOOTARING CANYON Ticaboo, UT	SUA-1371	0.050	\$ 2.296 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• No groundwater contamination noted to date; this is the only site with a detection monitoring program still operating.</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings reclamation planned for completion in 2000;</li> <li>• Mill may be on a standby status.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Joel Grimm</p>					

TABLE 3  
CONTINUED

Site: PLATEAU-SHOOTARING CANYON

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	
Environmental Assessment (EA) Prepared ?	Y	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	Y	Synthetic.
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	N	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Stock watering.
Surface/Soil Reclamation in Progress ?	N	Mill on standby.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: QUIVIRA-AMBROSIA LAKE

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-12	QUIVIRA-AMBROSIA LAKE Grants, NM	SUA-1473	33.0	\$ 16.646 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• ACLs applied for sometime ago.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• CAP somewhat complex in that licensee uses mine dewatering CAP, with some the dewatering is discharged as part of a NPDES permit.</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings reclamation planned for completion in 1997;</li> <li>• Reclamation of tailings pond no.1 is ongoing;</li> <li>• Mill may be on a standby status.</li> <li>• Annual CAP review.</li> <li>• ACL review will be needed; URFO's staff review of licensee's submittal indicates that proposed ACLs inadequate and ALARA has not been demonstrated (licensee doesn't know that).</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Pete Garcia</p>					



TABLE 3  
CONTINUED

Site: QUIVIRA-AMBROSIA LAKE

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	N	Detailed technical review memos prepared in 1986.
Environmental Report (ARE) Prepared ?	Y	Submitted to State in support of license renewal.
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	N	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	Y	Series of evaporation ponds lined; New pond planned on top of tailings will also be lined.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Stock watering.
Surface/Site Reclamation in Progress ?	Y	Radon barrier placement on pond #1 in progress.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: RIO ALGOM-LISBON

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-13	RIO ALGOM-LISBON Lisbon, UT	SUA-1119	3.3	\$ 3.573 M	Carbonate leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• ACLs may be required.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Complex CAP involving two aquifers; huge fracture systems; recovery of seepage-contaminated groundwater, and disposal of recovered water into clay lined evaporation ponds;</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Annual CAP review;</li> <li>• Site/tailings reclamation planned for completion in 1996;</li> <li>• Mill decommissioning plan has not been approved.</li> <li>• ACL review may be required.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Dana Ward</p>					

TABLE 3  
CONTINUED

Site: RIO ALGOM-LISBON

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	9/84
Environmental Report (ARE) Prepared ?	Y	12/92; 11/82
Environmental Impact Statement (EIS) Prepared ?	Y	4/76
Environmental Assessment (EA) Prepared ?	Y	3/93; 9/83
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	NA	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	NA	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Stock watering.
Surface/Site Reclamation in progress ?	Y	Interim cover; mill has not been decommissioned.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: SOHIO WSTN-L-BAR

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-14	SOHIO WSTN-L-BAR Bibo, NM	SUA-1472	1.2	\$ 2.070 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>* Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>* ACLs will be needed.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>* CAP involves dewatering and recovery of tailings solution from two horizontal drains installed in tailings impoundment, at a rate of 5-8 gpm; recovered solution is disposed into an evaporation pond; system may have to operate indefinitely.</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>* Site/tailings earthwork completed in 1992; but the following are open issues that are presently under staff review and remain to be settled:               <ul style="list-style-type: none"> <li>- Radon cover continues to settle; licensee will be required to place additional cover once settlement is complete;</li> <li>- Riprap on face of impoundment is still an open issue, under review by staff;</li> <li>- Licensee has failed to maintain adequate construction and testing records and to meet QA/QC records, and to correlate the nuclear densitometer with the sand cone.</li> </ul> </li> <li>* ACL review will be needed.</li> <li>* Annual CAP review.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Raymond Gonzales</p>					

TABLE 3  
CONTINUED

Site: SOHIO WSTM-L-BAR

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	N	After resuming regulatory authority of site in 6/86, NRC documented safety requirements in memos to docket, but a formal SER was not prepared.
Environmental Report (ARE) Prepared ?	Y	ARE was prepared and submitted to the State of New Mexico in 1982; ARE was updated and submitted to NRC in a supplement dated 1/93.
Environmental Impact Statement (EIS) Prepared ?	Y	The State of New Mexico prepared a report on the environmental impacts, but report did not address reclamation & decommissioning.
Environmental Assessment (EA) Prepared ?	N	NRC may have to prepare an EA although the site has basically been reclaimed.
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	Ore storage areas have been reclaimed.
Other Surface Impoundment ?	Y	Several evaporation ponds have been constructed on top of tailings as part of the CAP.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	N	
Any Surface/Site Reclamation in Progress ?	N	Site reclamation plan was approved in 5/89.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: TVA-EDGEMONT

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-15	TVA-EDGEMONT Edgemont, SD	SUA-816	3.5	\$ 0	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• None.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Groundwater corrective action has been completed.</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site/tailings reclamation has virtually been completed; however, some elements of the plan are under staff review to ensure current criteria have been met.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Gary Konwinski</p>					

TABLE 3  
CONTINUED

Site: TVA-EDGEMONT

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	
Environmental Assessment (EA) Prepared ?	Y	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	Y	Composite clay.
Any Liner in Ore-Storage Areas ?	NA	
Other Surface Impoundment ?	NA	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	N	
Any Surface/Site Reclamation in Progress ?	Y	Reclamation completed, presently under NRC staff review.
Long-Term Surveillance Plan Submitted ?	Y	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: UMETCO-GAS HILLS

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-16	UMETCO-GAS HILLS Gas Hills, WY	SUA-648	9.2	\$ 10.053 M	Sulfuric acid, resin in pulp, solvent extraction process (heap leach).
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• ACLs will be needed.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• CAP somewhat complex as it involves the following corrective actions in two aquifers: freshwater injection; recovery of contaminant seepage, and disposal of recovered water in evaporation pond; ion exchange treatment, and reverse osmosis.</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site reclamation plan to be completed by 1995;</li> <li>• Mill is completely gone;</li> <li>• Survey needs to be conducted to release site for unrestricted use. Site reclamation planned</li> <li>• Some work still needs to be completed on the riprap cover for the tailings disposal areas.</li> <li>• ACL review will be needed.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Dana Ward</p>					



TABLE 3  
CONTINUED

Site: UMETCO-GAS HILLS

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	4/87
Environmental Report (ARE) Prepared ?	Y	2/93 (for reclamation).
Environmental Impact Statement (EIS) Prepared ?	Y	7/80
Environmental Assessment (EA) Prepared ?	N	Not for recent reclamation activities.
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	Completely decontaminated.
Other Surface Impoundment ?	N	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Stock/Wildlife.
Any Surface/Site Reclamation in Progress ?	Y	
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: UMETCO-WHITE MESA

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-17	UMETCO-WHITE MESA Blanding, UT	SUA-1358	2.2	\$ 5.474 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• No CAP has been formulated yet, issue is presently under review;</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site reclamation planned for completion in 2005;</li> <li>• CAP needs to be formulated;</li> <li>• Groundwater section in the EA for license renewal has not been completed, waiting for additional information from licensee;</li> <li>• DOE may transfer Monticello wastes to White Mesa;</li> <li>• State of Utah is watching every move at White Mesa, State is therefore to be kept informed of all developments.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Dana Ward</p>					

TABLE 3  
CONTINUED

Site: UMETCO-WHITE MESA

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	8/89, for operation.
Environmental Report (ARE) Prepared ?	Y	6/85; 1/85
Environmental Impact Statement (EIS) Prepared ?	Y	5/79
Environmental Assessment (EA) Prepared ?	Y	9/85, for license renewal.
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	Y	
Any Liner in Ore-Storage Areas ?	N	
Other Surface Impoundment ?	N	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	N	
Any Surface/Site Reclamation in Progress ?	N	
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: UNC-CHURCH ROCK

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-18	UNC-CHURCH ROCK Gallup, NM	SUA-1475	3.6	\$ 9.402 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• APLs will be needed.</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Contaminated groundwater recovery from three different aquifers underway;</li> <li>• Very complex site; to coordinate corrective action with EPA, State, and Navajo Nation, as per MOU;</li> <li>• Site will need fresh water injection;</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Site reclamation plan approved; target completion date 1997;</li> <li>• Site to be released for unrestricted use; amendment pending.</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Gary Konwinski</p>					

TABLE 3  
CONTINUED

Site: UNC-CHURCH ROCK

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	
Environmental Assessment (EA) Prepared ?	Y	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	NA	
Other Surface Impoundment ?	Y	Evaporation pond on top of tailings.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	N	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	N	
Any Surface/Site Reclamation in Progress ?	Y	
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 3  
CONTINUED

Site: UNION PAC-BEAR CREEK

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-19	UNION PAC-BEAR CREEK S. Powder River, WY	SUA-1310	4.7	\$ 11.296 M	Acid leach.
<u>Site-Specific Groundwater Standards</u>					
<ul style="list-style-type: none"> <li>• Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>• ACLs will be needed.</li> </ul>					
<u>Status of Corrective Action/Groundwater Restoration</u>					
<ul style="list-style-type: none"> <li>• CAP consists of removal of contaminated groundwater and fresh water injection, with evaporation loss;</li> </ul>					
<u>Issues Requiring Attention/Remarks</u>					
<ul style="list-style-type: none"> <li>• Site reclamation plan approved; target completion date 1997;</li> <li>• Site to be released for unrestricted use; amendment pending.</li> </ul>					
<u>Staffing</u>					
Present Project Manager: Dawn Jacoby					

TABLE 3  
CONTINUED

Site: UNION PAC-BEAR CREEK

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	
Environmental Assessment (EA) Prepared ?	Y	
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	Reclaimed.
Other Surface Impoundment ?	Y	Clay-lined evaporation ponds on tailings.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Stock watering.
Any Surface/Site Reclamation in Progress ?	Y	
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government; State or Federal ?	N	

TABLE 3  
CONTINUED

Site: WNI-SPLIT ROCK

A. Groundwater Corrective Action

Serial Number	Licensee & Location	License #	Tailings (Million cy/ton)	Surety (\$ Million)	Leaching Process
MIL-20	WNI-SPLIT ROCK S. Powder River, WY	SUA-056	7.7	\$ 14.5 M	Acid leach.
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>* Background and/or Maximum Concentration Limits in Criterion 5C of Appendix A, 10 CFR Part 40.</li> <li>* ACLs will be needed (application submitted in 1989 and sent back to licensee).</li> </ul>					
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>* CAP consists of removal of contaminated groundwater and its disposal in lined evaporation pond;</li> </ul>					
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>* Site reclamation planned for completion in 1996; approved reclamation plan is being modified; modifications will include realignment of diversion ditches and changes in radon cover design;</li> <li>* Stephanie Baker of WNI works very closely with NRC;</li> <li>* Day Loma heap leach site, which is in WNI's license, will be an item to work on this winter;</li> </ul>					
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Dana Ward</p>					



TABLE 3  
CONTINUED

Site: WNI-SPLIT ROCK

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	2/80
Environmental Report (ARE) Prepared ?	Y	3/93, for reclamation plan.
Environmental Impact Statement (EIS) Prepared ?	Y	2/80
Environmental Assessment (EA) Prepared ?	Y	5/93, for reclamation plan.
Disposal Below Grade ?	N	
Any Liner Under Tailings ?	N	
Any Liner in Ore-Storage Areas ?	N	Concrete pad.
Other Surface Impoundment ?	Y	Two evaporation ponds for CAP water storage.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Domestic; stock watering; and discharge to Sweetwater River.
Any Surface/Site Reclamation in Progress ?	Y	Since 1990.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

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Table 4: Status of Licensed In-Situ Solution Sites

(As of November 1, 1993)

Site: EFN-RENO CREEK

A. Groundwater Restoration

Serial Number	Licensee & Location	License #	Leaching Process	Surety (\$ Million)
SOL-1	EFN-RENO CREEK N. Powder River, WY	SUA-1558	NA	\$. 020
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Not applicable at this time, since present license is for possession only (of contaminated resin); a license for commercial operation has not yet been issued.</li> </ul>				
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Not Applicable at this time.</li> </ul>				
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Present license is for possession only (of contaminated resin);</li> <li>• Resin is stored in drums (about three semi-trailer loads) at a former R&amp;D ISL site, which has been decontaminated and decommissioned;</li> <li>• A license application for a commercial ISL operation is expected to be submitted in the fourth quarter of 1993;</li> <li>• May require an EIS for issuance of license for a commercial ISL.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Gary Konwinski</p>				

KEY:

NA: Not applicable and/or not available.  
 ISL: In-Situ Solution Leach.

TABLE 4  
CONTINUED

Site: EFN-RENO CREEK

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	N	
Environmental Report (ARE) Prepared ?	N	
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	N	
Any Surface Impoundments ?	Y	Proposed evaporation ponds.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	Y	Solution zone.
Any Present or Potential Uses of Groundwater ?	Y	Stock watering.
Any Surface/Site Reclamation in Progress ?	N	
Long-Term Surveillance Plan Submitted ?	NA	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	NA	

TABLE 4  
CONTINUED

Site: FERRET-CROW BUTTE

A. Groundwater Restoration

Serial Number	Licensee & Location	License #	Leaching Process	Surety (\$ Million)
SOL-2	FERRET-CROW BUTTE CRAWFORD, NE	SUA-1534	Hydrogen Peroxide (Oxygen)	\$ 5 M
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background (average of measured baseline groundwater quality in background wells).</li> </ul>				
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• No groundwater restoration has been implemented to date;</li> <li>• Proposal pending to dispose of waste water by surface irrigation.</li> </ul>				
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Initial licensing action had intense opposition by the local community; which may surface again due to proposed surface irrigation for disposal of waste water.</li> <li>• Need to coordinate licensing action with the State of Nebraska (Department of Environmental Quality), who has a concurrent jurisdiction over this site.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Joel Grimm</p>				

TABLE 4  
CONTINUED

Site: FERRET-CROW BUTTE

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	Upon licensing, 12/89
Environmental Report (ARE) Prepared ?	Y	Upon applying, 10/87
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	Y	Upon licensing, 10/87
Any Surface Impoundments ?	Y	Lined 15-acre evaporation pond, with leak detection system.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	Y	State permit (Nebraska DEQ)
Any Present or Potential Uses of Groundwater ?	Y	Water from overlying aquifer useable for drinking, irrigation, and livestock.
Any Surface/Site Reclamation in Progress ?	N	
Long-Term Surveillance Plan Submitted ?	NA	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	NA	

TABLE 4  
CONTINUED

Site: PATHFINDER-NORTH BUTTE

A. Groundwater Restoration

Serial Number	Licensee & Location	License #	Leaching Process	Surety (\$ Million)
SOL-3	PATHFINDER-NORTH BUTTE Pumkin Buttes, WY	SUA-1540	Hydrogen Peroxide (Oxygen)	\$ 0.184 M
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• None established to date.</li> </ul>				
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Not required so far; commercial operation has not started.</li> </ul>				
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Starting commercial operation is pending the meeting of the conditions/requirements by licensee; license</li> <li>• It is expected that licensee will submit proposal to begin commercial operation in 1994;</li> <li>• Disposal by surface irrigation/deep well injection may be an issue for this site.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Gary Konwinski</p>				

TABLE 4  
CONTINUED

Site: PATHFINDER-NORTH BUTTE

B. Supporting information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	Y	
Any Surface Impoundments ?	Y	Evaporation ponds.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	Y	Solution zone.
Any Present or Potential Uses of Groundwater ?	Y	Stock watering
Any Surface/Site Reclamation in Progress ?	N	
Long-Term Surveillance Plan Submitted ?	NA	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	NA	

TABLE 4  
CONTINUED

Site: POWER RES-HIGHLAND

A. Groundwater Restoration

Serial Number	Licensee & Location	License #	Leaching Process	Surety (\$ Million)
SOL-4	POWER RES-HIGHLAND S. Powder River, WY	SUA-1511	Hydrogen Peroxide (Oxygen)	\$ 6 M
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Upper Control Limits for indicator constituents are used to identify excursion, but background baseline groundwater quality for individual constituents represent groundwater restoration goals.</li> </ul>				
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Ongoing and continuing, may require years to complete;</li> <li>• Restoration efforts to date have focussed on controlling excursion outside the solution zone area.</li> <li>• Proposal for disposal of waste water through surface irrigation is presently under review.</li> </ul>				
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• License renewal application (presently under review);</li> <li>• Proposal by licensee to use deep aquifers at the site as a source of water supply;</li> <li>• Proposal to use irrigation for disposal of waste water;</li> <li>• Proposal to modify sampling program for baseline groundwater quality for new fields planned for development (presently under review);</li> <li>• Closure of radium settling pond;</li> <li>• Installation of new dryer and scrubber system.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Cynthia Miller-Corbett</p>				



TABLE 4  
CONTINUED

Site: POWER RES-HIGH NO

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	11/91, for revised license; 7/87, for revised license application; License renewal application presently under review will involve SER and EA update.
Environmental Report (ARE) Prepared ?	Y	12/85, in support of license application.
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	Y	10/91, in support of revised license application; 7/87, in support of license application.
Any Surface Impoundment ?	Y	Radium settling ponds; Purge storage reservoirs.
Any Underground Drinking water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	NA	To date, no; however, amendment to withdraw from an aquifer below the solution zone is under review.
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Probably for livestock.
Any Surface/Site Reclamation in Progress ?	N	
Long-Term Surveillance Plan Submitted ?	NA	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	NA	

TABLE 4  
CONTINUED

Site: RIO ALGOM- SMITH RANCH

A. Groundwater Restoration

Serial Number	Licensee & Location	License #	Leaching Process	Surety (\$ Million)
SOL-5	RIO ALGOM- SMITH RANCH S. Powder River, WY	SUA-1548	Hydrogen Peroxide (Oxygen)	\$ 7.5 M
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background (average of measured baseline groundwater quality in background wells).</li> </ul>				
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Not applicable since the site has not yet been operated.</li> </ul>				
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• License has been issued for commercial production, but operation has not started.</li> <li>• State of Wyoming and Bureau of Land Management interested in preservation of portion of historical Bozeman Trail near well field.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Joel Grimm</p>				

TABLE 4  
CONTINUED

Site: RIO ALGOM- SMITH RANCH

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	4/91
Environmental Report (ARE) Prepared ?	Y	1988
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	Y	4/91
Any Surface Impoundment ?	Y	Lined evaporation ponds.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	Y	
Any Present or Potential Uses of Groundwater ?	Y	Livestock use.
Any Surface/Site Reclamation in Progress ?	N	
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

TABLE 4  
CONTINUED

Site: TOTAL-IRIGARAY/CHRIS RANCH

A. Groundwater Restoration

Serial Number	Licensee & Location	License #	Leaching Process	Surety (\$ Million)
SOL-6	TOTAL-IRIGARAY/CHRIS RANCH N. Powder River, WY	SUA-1341	Hydrogen Peroxide (Oxygen)	\$ 8.022 M
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• Background (average of measured baseline groundwater quality in background wells).</li> </ul>				
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Groundwater restoration is ongoing and continuing at both main processing plant (Irigaray) and satellite facility (Christensen Ranch).</li> </ul>				
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• This is a huge ISL facility consisting of a main processing plant and a satellite facility;</li> <li>• This is a complex license that has already involved many and restoration issues, and corresponding license amendments; groundwater quality</li> <li>• A very active license, which at times is poorly managed;</li> <li>• This license is up for renewal, which is expected to be a huge/major undertaking.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Gary Konwinski</p>				

TABLE 4  
CONTINUED

Site: TOTAL-IRIGARAY/CHRIS RANCH

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	Y	
Environmental Assessment (EA) Prepared ?	Y	
Any Surface Impoundments ?	Y	Evaporation ponds.
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	Y	Solution zone.
Any Present or Potential Uses of Groundwater ?	Y	Stock watering.
Any Surface/Site Reclamation in progress ?	N	
Long-Term Surveillance Plan Submitted ?	NA	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	NA	

TABLE 4  
CONTINUED

Site: U.S. ENERGY-GREEN MOUNTAIN

A. Groundwater Restoration

Serial Number	Licensee & Location	License #	Leaching Process	Surety (\$ Million)
SOL-7	U.S. ENERGY-GREEN MOUNTAIN Gas Hills, WY	SUA-1524	Ion Exchange of Mine Dewatering Discharge	\$ 0.077 M
<p style="text-align: center;"><u>Site-Specific Groundwater Standards</u></p> <ul style="list-style-type: none"> <li>• None set at this time.</li> </ul>				
<p style="text-align: center;"><u>Status of Corrective Action/Groundwater Restoration</u></p> <ul style="list-style-type: none"> <li>• Report on surface remediation has been submitted; no groundwater restoration is required at this time.</li> </ul>				
<p style="text-align: center;"><u>Issues Requiring Attention/Remarks</u></p> <ul style="list-style-type: none"> <li>• Decommissioning plan under review; likely that the license will be terminated.</li> </ul>				
<p style="text-align: center;"><u>Staffing</u></p> <p>Present Project Manager: Paul Michaud</p>				

TABLE 4  
CONTINUED

Site: U.S. ENERGY-GREEN MOUNTAIN

B. Supporting Information on File

ITEM	YES/NO	EXPLANATION/REMARKS
Safety Evaluation Report (SER) Prepared ?	Y	
Environmental Report (ARE) Prepared ?	Y	
Environmental Impact Statement (EIS) Prepared ?	N	
Environmental Assessment (EA) Prepared ?	Y	
Any Surface Impoundments ?	NA	
Any Underground Drinking Water Sources (i.e., as per EPA guidelines in 40 CFR 144.7 & 144.3) ?	Y	
Any Exempted Aquifers (as per EPA guidelines in 40 CFR 144.7 & 146.04) ?	N	
Any Present or Potential Uses of Groundwater ?	Y	Stock watering.
Any Surface/Site Reclamation in Progress ?	N	Decommissioning plan submitted for NRC review.
Long-Term Surveillance Plan Submitted ?	N	
Has Site/Tailings Ownership Been Transferred to the Government: State or Federal ?	N	

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DEC 18 1993

MEMORANDUM FOR: Ramon E. Hall, Director  
Uranium Recovery Field Office  
Division of Radiation Safety  
and Safeguards, Region IV

FROM: Joseph J. Holonich, Acting Chief  
Uranium Recovery Branch  
Division of Low-level Waste Management  
and Decommissioning  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: NEW SURETY FOR ATLAS CORPORATION-LICENSE NO. SUA-917

Norwest Bank Denver, N.A. has provided to the U.S. Nuclear Regulatory Commission an Irrevocable Standby Letter of Credit Number S800222 (LOC), at the request and for the account of Atlas Corporation, up to the aggregate amount of \$6,500,000.00 (six million, five hundred thousand and 00/100 dollars). This LOC, provided to replace Bank of America Letter of Credit No. 119907, has been found to be satisfactory to the Division of Low-Level Waste Management and Decommissioning.

The NRC staff has reviewed the surety instrument provided by Norwest Bank using the guidance in the "Technical Position on Financial Assurances For Reclamation, Decommissioning, and Long-Term Surveillance and Control of Uranium Recovery Facilities," which was issued in October 1988. The language in the LOC is consistent with Appendix B to the Technical Position (Recommended Wording for an Irrevocable Standby Letter of Credit), although minor modifications were incorporated. All changes were evaluated and reviewed by the Office of the General Counsel and found legally acceptable.

If you have any questions, they should be addressed to Allan Mullins of my staff at (301) 504-2578.

(SIGNED) PAUL H. LOHAUS

Joseph J. Holonich, Acting Chief  
Uranium Recovery Branch  
Division of Low-level Waste Management  
and Decommissioning  
Office of Nuclear Material Safety  
and Safeguards

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You may proceed to amend License No. SUA-917 to reflect the change in the surety. If you have any questions, they should be addressed to Allan Mullins of my staff at (301) 504-2578.

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cc: Richard Blubaugh  
 Atlas Corp.

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