

99-377,00-219,00-257

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RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

RESPONSE TYPE: FINAL PARTIAL

REQUESTER

Ms. Kimberly Boggiatto

DATE

JUL 16 2000

PART I. -- INFORMATION RELEASED

- No additional agency records subject to the request have been located.
- Requested records are available through another public distribution program. See Comments section.
- APPENDICES: Agency records subject to the request that are identified in the listed appendices are already available for public inspection and copying at the NRC Public Document Room.
- APPENDICES: Agency records subject to the request that are identified in the listed appendices are being made available for public inspection and copying at the NRC Public Document Room.
- Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 2120 L Street, NW, Washington, DC.
- APPENDICES: Agency records subject to the request are enclosed.
- Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (see comments section) for a disclosure determination and direct response to you.
- We are continuing to process your request.
- See Comments.

PART I.A -- FEES

- AMOUNT * You will be billed by NRC for the amount listed. None. Minimum fee threshold not met.
- \$ You will receive a refund for the amount listed. Fees waived.
- * See comments for details

PART I.B -- INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE

- No agency records subject to the request have been located.
- Certain information in the requested records is being withheld from disclosure pursuant to the exemptions described in and for the reasons stated in Part II.
- This determination may be appealed within 30 days by writing to the FOIA/PA Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Clearly state on the envelope and in the letter that it is a "FOIA/PA Appeal."

PART I.C COMMENTS (Use attached Comments continuation page if required)

SIGNATURE - FREEDOM OF INFORMATION ACT AND PRIVACY ACT OFFICER

Carol Ann Reed

PART II.A – APPLICABLE EXEMPTIONS

APPENDICES
H

Records subject to the request that are described in the enclosed Appendices are being withheld in their entirety or in part under the Exemption No.(s) of the PA and/or the FOIA as indicated below (5 U.S.C. 552a and/or 5 U.S.C. 552(b)).

- Exemption 1: The withheld information is properly classified pursuant to Executive Order 12958.
- Exemption 2: The withheld information relates solely to the internal personnel rules and procedures of NRC.
- Exemption 3: The withheld information is specifically exempted from public disclosure by statute indicated.
 - Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
 - Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
 - 41 U.S.C., Section 253(b), subsection (m)(1), prohibits the disclosure of contractor proposals in the possession and control of an executive agency to any person under section 552 of Title 5, U.S.C. (the FOIA), except when incorporated into the contract between the agency and the submitter of the proposal.
- Exemption 4: The withheld information is a trade secret or commercial or financial information that is being withheld for the reason(s) indicated.
 - The information is considered to be confidential business (proprietary) information.
 - The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.790(d)(1).
 - The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.790(d)(2).
- Exemption 5: The withheld information consists of interagency or intraagency records that are not available through discovery during litigation. Applicable privileges:
 - Deliberative process: Disclosure of predecisional information would tend to inhibit the open and frank exchange of ideas essential to the deliberative process. Where records are withheld in their entirety, the facts are inextricably intertwined with the predecisional information. There also are no reasonably segregable factual portions because the release of the facts would permit an indirect inquiry into the predecisional process of the agency.
 - Attorney work-product privilege. (Documents prepared by an attorney in contemplation of litigation)
 - Attorney-client privilege. (Confidential communications between an attorney and his/her client)
- Exemption 6: The withheld information is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
 - (A) Disclosure could reasonably be expected to interfere with an enforcement proceeding (e.g., it would reveal the scope, direction, and focus of enforcement efforts, and thus could possibly allow recipients to take action to shield potential wrongdoing or a violation of NRC requirements from investigators).
 - (C) Disclosure would constitute an unwarranted invasion of personal privacy.
 - (D) The information consists of names of individuals and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
 - (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
 - (F) Disclosure could reasonably be expected to endanger the life or physical safety of an individual.
- OTHER (Specify)

PART II.B – DENYING OFFICIALS

Pursuant to 10 CFR 9.25(g), 9.25(h), and/or 9.65(b) of the U.S. Nuclear Regulatory Commission regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The person responsible for the denial are those officials identified below as denying officials and the FOIA/PA Officer for any denials that may be appealed to the Executive Director for Operations (EDO).

DENYING OFFICIAL	TITLE/OFFICE	RECORDS DENIED	APPELLATE OFFICIAL		
			EDO	SECY	IG
Joseph R. Gray	Associate General Counsel for Licensing & Regulations	App. H		✓	

Appeal must be made in writing within 30 days of receipt of this response. Appeals should be mailed to the FOIA/Privacy Act Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, for action by the appropriate appellate official(s). You should clearly state on the envelope and letter that it is a "FOIA/PA Appeal."

APPENDIX G
RECORDS BEING RELEASED IN THEIR ENTIRETY
(If copyrighted identify with *)

<u>NO.</u>	<u>DATE</u>	<u>DESCRIPTION/(PAGE COUNT)</u>
1.	11/23/94	Performance Bond for Atlas Corporation. (14 pages)
2.	12/09/97	Letter from Holtkamp to Ostler on Atlas Uranium Mill Tailings Schedule Modification for Required Submittals. (4 pages).
3.	10/23/98	Letter from Sender to Clark stating certain time constraints and deadlines which Atlas Corp faces in its Chapter 11 proceeding. (2 pages).
4.	11/23/98	Email from Gray to Burns on Atlas Hearing attaching an email from Fliegel to Clark on Atlas Hearing. (2 pages).
5.	12/02/98	Letter from Blubaugh to Campbell regarding Babbit, Leavitt and Cannons' visit to Atlas. (4 pages).
6.	12/09/98	Letter from Blubaugh to Campbell expressing their commitment to promptly complete NRC's review of the reclamation plan. (2 pages).
7.	11/16/99	Email from Martz to Surmeier, Gray and Holonich on Time Estimates II attaching an email from Easting to Martz. (4 pages)
8.	12/17/99	Email from Burns to Martz on Atlas - Essig Update. (1 page).
9.	12/30/99	Final Report - Determination of a Safe Level of Ammonia that is Protective of Juvenile Colorado Pikeminnow in the Upper Colorado River, Utah. (26 pages).
10.	01/12/99	Letter from Blubaugh to Chairman Jackson on Source Material License SUA-917. (2 pages) Accession Number 9906020202 CF.
11.	02/12/99	Atlas Corporation's Objection to Utah's Claim for Administrative Expense. (116 pages).

12. 02/12/99 Notice Pursuant to Local Rule 202 and Federal Rule of Bankruptcy Procedure 3007 of Atlas Corporation's Objection to Utah's Claim for Administrative Expense. (2 pages).
13. 02/25/99 Memorandum from Guy and Hoffman to Bourdreaux, Clark, McCue, Holonich and Nordlinger on Atlas Conference Call. (1 page).
14. 02/26/99 Notice Pursuant to Local Rule 202 Atlas Corporation's Amended Motion for Order Abandoning Moab Uranium Tailings Site Pursuant to 10 USC Section 5554(a). (4 pages).
15. 03/11/99 Fax from Jensen to Burns, Holonich and Maldonado attaching Atlas Corporation's estimate of the total Title X claim. (3 pages)
16. 03/14/99 Atlas Asset Summary. (4 pages).
17. 03/17/99 Burns' note on Status of Atlas Bankruptcy Proceeding. (1 page).
18. 03/30/99 Atlas Corporation's Plan of Reorganization. (20 pages).
19. 04/01/99 Letter from Heitler to Tallman, Fuller, Chancellor, Clark and Bartlett enclosing Atlas Corporation's plan of Reorganization. (21 pages).
20. 04/29/99 Moab Uranium Millsite Transfer Agreement. (20 pages).
21. 04/29/99 Atlas Corporation's Motion for Approval of Moab Uranium Millsite Transfer Agreement. (9 pages).
22. 04/29/99 Notice Pursuant to Local Rule 202 and Federal Rule of Bankruptcy Procedure 3007 of Atlas Corporation's Motion for Approval of Moab Uranium Millsite Transfer Agreement. (2 pages).
23. 04/30/99 Joint Disclosure Statement of Atlas Corporation, Atlas Gold Mining Inc. and Atlas Precious Metals Inc. (148 pages).
24. 11/15/99 Email from Schwartz to Gray, Martz and Burns on Trust Language. (4 pages).
25. 11/18/99 Email from Holonich to Schwartz on Atlas. (1 page).
26. 11/30/99 Email from Schwartz to Gray, Martz and Burns on Atlas Trust. (2 pages).

27. 12/11/99 Email from Schwartz to Fliegel on Release Agreements. (4 pages).
28. 01/07/00 Email from Schwartz to Gray and Burns on Atlas and PWC. (1 page).
29. 01/18/00 Email from Cordes to Nordlinger on Atlas. (1 page).
30. 02/03/00 Email from Cordes to Nordlinger on Atlas news item. (1 page).
31. 04/06/00 Letter from Lashway to Fields regarding the Moab Reclamation Trust. (18 pages).
32. 04/26/00 Email from Frye to Cordes on recent news story on Atlas. (1 page).
33. 04/26/00 Email from Schwartz to Gray and Burns on Atlas. (1 page).
34. 06/06/00 Email from Cordes to Fonner on Atlas. (1 page).

APPENDIX H
RECORDS BEING WITHHELD IN PART

<u>NO.</u>	<u>DATE</u>	<u>DESCRIPTION/(PAGE COUNT)/EXEMPTIONS</u>
1	12/14/99	Email from Burns to Jones, Doane, Davis on Courtesy Call by Atlas Trustee. (1 page). Exemption 5 - Attorney-Client.
2.	03/20/00	Memorandum from Schwartz to Gray on What effect would reinitiation of formal consultation have on license number SUA-917. (31 pages). Exemption 5 - Attorney-Client.

PERFORMANCE BOND

Date bond executed: November 23, 1994

Effective date: November 23, 1994

Principal: Atlas Corporation

Type of organization: Corporation

State of incorporation: Delaware

Surety(ies): ACSTAR Insurance Company

NRC Source Material License Number, name address, and reclamation, decommissioning, stabilization, and long-term surveillance and control amount(s) for each uranium recovery facility guaranteed by this bond: SUA - 917

Total penal sum of bond: \$ 6,500,000.00

Surety's bond number: 5652

Not Negotiable
[Signature]
copy

Uranium Mill Site
Atlas Minerals
Highway 191N. Box 1207
Moab, Utah 84532

KNOW ALL PERSONS BY THESE PRESENT, That we, the Principal and Surety(ies) hereto are firmly bound to the U.S. Nuclear Regulatory Commission (hereinafter called NRC), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

WHEREAS, the NRC, an agency of the United States Government, pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and the Uranium Mill Tailings Radiation Control Act of 1978, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 40, Appendix A, Criteria 9 and 10. These regulations, applicable to the Principal, require that a licensee of a uranium recovery facility shall provide assurance that funds will be available when needed in accordance with the approved Reclamation and Decommissioning Plan and also for the long term surveillance and control of the uranium recovery facility.

11

WHEREAS, said Principal is required under these regulations, to have license in order to own or operate each uranium recovery facility identified above, and

WHEREAS, said Principal is required to provide financial assurance for decommissioning, reclamation and long-term surveillance and control as a condition of the license, and

WHEREAS, said Principal shall establish a standby trust fund when a surety bond is used to provide such financial assurance;

NOW, THEREFORE, the conditions of the obligation are such that if the Principal shall faithfully perform reclamation and decommissioning and make arrangements to transfer funds for long-term surveillance and control to an approved regulatory authority, whenever required to do so, of each uranium recovery facility for which this bond guarantees reclamation and decommissioning in accordance with license conditions, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended;

Or, if the Principal shall provide alternate financial assurance, and obtain the NRC's written approval of such assurance, within 30 days after the date notice of cancellation is received by both the Principal and the NRC from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

! } The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by NRC that the Principal has been found in violation of the license conditions of 10 CFR Part 40, Appendix A, for a uranium recover facility for which this bond guarantees performance of reclamation, decommissioning, and long-term surveillance and control, the Surety(ies) or their agents shall either perform in accordance with license requirements, or place the amount guaranteed for the uranium recovery facility into the standby trust fund, as directed by the NRC.

} performance might be by Surety

Upon notification by the NRC that the Principal has failed to provide alternate financial assurance and obtain written approval of such assurance from the NRC during the 90 days following receipt by both the Principal and the NRC of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the uranium recovery facility(ies) into the standby trust fund, as directed by the NRC.

The Surety(ies) hereby waive(s) notification of amendments to decommissioning and reclamation plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the uranium recovery licensee and to the NRC, provided, however, that cancellation shall not occur during the 90 days beginning on the date of receipt of the notice of cancellation by both the Principal and the NRC, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond from the NRC.

In Witness Whereof, The Principal(s) and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies).

Principal ATLAS CORPORATION

[Signature(s)] *David W. Potratz*

[Name(s)] David W. Potratz

[Title(s)] Treasurer and Secretary

[Corporate seal]

Corporate Surety(ies) ACSTAR Insurance Company

[Name(s) and address] 233 Main Street, New Britain, CT 06050

State of incorporation Illinois

Liability Limit: \$ 1,631,000.00

[Signature(s)] *Henry W. Nozko, Jr.*

[Name(s) and title(s)] Henry W. Nozko, Jr. - President

[Corporate Seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: \$ 162,500.00



233 MAIN STREET - P.O. BOX 2350
NEW BRITAIN, CT 06050-2350
(203) 224-2000

POWER OF ATTORNEY

Know all men by these presents: That ACSTAR Insurance Company, a corporation of the State of Illinois, having its principal office in the City of New Britain, Connecticut, pursuant to the following Resolution, which was adopted by the Board of Directors of the said Company on August 31, 1993, to wit:

RESOLVED, That the following Rules shall govern the execution for the Company of bonds, undertakings, recognizances, contracts and other writings in the nature thereof:

- (1) That the Chairman, the President, the Vice President and General Counsel, or any Attorney-in-Fact, may execute for and on behalf of the Company any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof, the same to be attested when necessary by the Corporate Secretary, or any Assistant Corporate Secretary, and the seal of the Company affixed thereto; and that the Chairman or President may appoint and authorize any other Officer (elected or appointed) of the Company, and Attorneys-in-Fact to so execute or attest to the execution of all such writings on behalf of the Company and to affix the seal of the Company thereto.
- (2) Any such writing executed in accordance with these Rules shall be as binding upon the Company in any case as though signed by the President and attested to by the Corporate Secretary.
- (3) The signature of the Chairman or the President of the Company may be affixed by facsimile on any power of attorney granted pursuant to this Resolution, and the signature of a certifying officer and the seal of the Company may be affixed by a facsimile to any certificate of any such power, and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company.
- (4) Such other Officers of the Company, and Attorneys-in-Fact shall have authority to certify or verify copies of this Resolution, the By-Laws of the Company, and any affidavit or record of the Company necessary to the discharge of their duties.

does hereby nominate, constitute and appoint

Henry W. Nozko, Sr., Henry W. Nozko, Jr., Robert H. Frazer, David A. Price, William J. Dykas each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding TWENTY MILLION DOLLARS (\$20,000,000.00) each, and the execution of such writings in pursuance of these presents, such be as binding upon said Company, as fully and amply, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office.

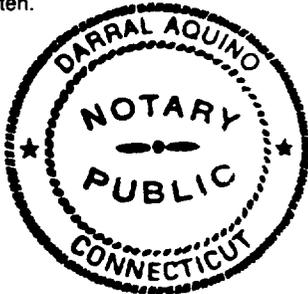
IN WITNESS WHEREOF, Henry W. Nozko, Sr., Chairman and Henry W. Nozko, Jr., President, have hereunto subscribed their names and affixed the corporate seal of the ACSTAR INSURANCE COMPANY this 1st day of November 1993.

ACSTAR Insurance Company
 by Henry W. Nozko, Sr.
 Henry W. Nozko, Sr., Chairman
 by Henry W. Nozko, Jr.
 Henry W. Nozko, Jr., President

STATE OF CONNECTICUT)
) ss. NEW BRITAIN
 COUNTY OF HARTFORD)

On this 1st day of November A.D. 1993, before me, a Notary Public of the State of Connecticut came, Henry W. Nozko, Sr., Chairman and Henry W. Nozko, Jr., President of the ACSTAR Insurance Company, to me personally known to be the individuals and officers who executed the preceding instrument, and they acknowledged that they executed the same, and the seal affixed to the preceding instrument is the corporate seal of said Company; that the said corporate seal and their signatures were duly affixed by the authority and direction of the said corporation, and the Resolution adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of New Britain the day and year first above written.



Darral Aquino
 Notary Public - Darral Aquino

I, the undersigned, Secretary of ACSTAR Insurance Company, do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Secretary and affixed the corporate seal of the Corporation, this 23rd day of November, 1994.

Robert H. Frazer
 Robert H. Frazer Secretary

currency rate, interest rate or residual value guarantees.

REINSURANCE AGREEMENT IN FAVOR OF THE UNITED STATES
(See Instructions on reverse)

NOT
NEGOTIABLE
COPY

DIRECT WRITING COMPANY * ACSTAR Insurance Company 233 Main Street New Britain, CT 06050	1A. DATE DIRECT WRITING COMPANY EXECUTES THIS AGREEMENT November 25, 1994
	1B. STATE OF INCORPORATION Illinois

REINSURING COMPANY * United States Fidelity & Guaranty Company 55 Madison Avenue Morristown, NJ 07960	2A. AMOUNT OF THIS REINSURANCE \$ 2,000,000.00
	2B. DATE REINSURING COMPANY EXECUTES THIS AGREEMENT November 23, 1994
	2C. STATE OF INCORPORATION Maryland

3. DESCRIPTION OF BOND DESCRIPTION OF BOND (Type, purpose, etc.) If associated with contract number, date, amount, etc., include name of Government agency involved.) J.S. Nuclear Regulatory Commission Closure Bond Uranium Mill Site SUA-917 Atlas Minerals Highway 191N Coab, Utah		3B. PENAL SUM OF BOND \$ 6,500,000.00
3C. DATE OF BOND November 23, 1994	3D. BOND NO. 5652	
3E. PRINCIPAL * Atlas Corporation 370 17th Street, Suite 3150 Denver, CO 80202		
3F. STATE OF INCORPORATION (If Corporate Principal) Delaware		

AGREEMENT:

a) The Direct Writing Company named above is bound as a surety to the United States of America, on the bond described above, in the above-named is the principal. The bond is given for the protection of the United States and the Direct Writing Company has been assigned to the above Reinsuring Company to be reinsured and counter-secured in the amount shown opposite the name of the Reinsuring Company (referred to as the "Amount of this Reinsurance"), or for whatever amount less than the "Amount of this Reinsurance" the Direct Writing Company is liable to pay under or by virtue of the bond.

b) For a sum mutually agreed upon, paid by the Direct Writing Company to the Reinsuring Company which acknowledges its receipt. The parties to this Agreement covenant and agree to the terms and conditions of this agreement.

TERMS AND CONDITIONS.

The purpose and intent of this agreement is to guarantee and indemnify the United States against loss under the bond to the extent of "Amount of this Reinsurance," or for any less sum than the "Amount of this Reinsurance," that is owing and unpaid by the Direct Writing Company to the United States.

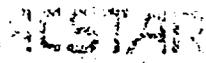
COVENANTS:

If the Direct Writing Company fails to pay any default under the bond equal to or in excess of the "Amount of this Reinsurance," the Reinsuring Company covenants and agrees to pay to the United States, the obligee on the bond, the "Amount of this Reinsurance." If the Direct Writing Company fails to pay to the United States any default for a sum less than the "Amount of this Reinsurance," the Reinsuring Company covenants and agrees to pay to the United States the full amount of the default, or so much thereof that is not paid to the United States by the Direct Writing Company.

The Reinsuring Company further covenants and agrees that in case of default on the bond for the "Amount of this Reinsurance," or for any less sum than the "Amount of this Reinsurance," the United States may sue the Reinsuring Company for the "Amount of this Reinsurance" or for the full amount of the default when the default is less than the "Amount of this Reinsurance."

WITNESSES:

The Direct Writing Company and the Reinsuring Company, respectively, have caused this Agreement to be signed and impressed with their respective corporate seals by officers possessing power to sign this instruments, and to be duly attested to by officers empowered to do so, on the day and date above-written opposite their respective names.



233 MAIN STREET, P.O. BOX 2350
NEW BRITAIN, CT 06050-2350
203) 224-2000

POWER OF ATTORNEY

Know all men by these presents: That ACSTAR Insurance Company, a corporation of the State of Illinois, having its principal office in the City of New Britain, Connecticut, pursuant to the following Resolution, which was adopted by the Board of Directors of the said Company on August 31, 1993, to wit:

RESOLVED That the following Rules shall govern the execution for the Company, of bonds, undertakings, recognizances, contracts and other writings in the nature thereof:

- 1. That the Chairman, the President, the Vice President and General Counsel, or any Attorney-in-Fact, may execute for and on behalf of the Company any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof, the same to be attested when necessary by the Corporate Secretary, or an Assistant Corporate Secretary, and the seal of the Company affixed thereto, and that the Chairman or President may appoint and authorize any other Officer, elected or appointed, of the Company, and Attorneys-in-Fact to so execute or attest to the execution of all such writings on behalf of the Company, and to affix the seal of the Company thereto.
- 2. Any such writing executed in accordance with these Rules shall be as binding upon the Company in any case as though signed by the President and attested to by the Corporate Secretary.
- 3. The signature of the Chairman or the President of the Company may be affixed by facsimile on any power of attorney granted pursuant to this Resolution, and the signature of a certifying officer and the seal of the Company may be affixed by a facsimile to any certificate of any such power, and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company.
- 4. Such other Officers of the Company, and Attorneys-in-Fact shall have authority to certify or verify copies of this Resolution, the By-Laws of the Company, and any affidavit or record of the Company necessary to the discharge of their duties.

does hereby nominate, constitute and appoint

Henry W. Nozko, Sr., Henry W. Nozko, Jr., Robert H. Frazer, David A. Price, William J. Dykas each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding TWENTY MILLION DOLLARS (\$20,000,000.00) each, and the execution of such writings in pursuance of these presents, such be as binding upon said Company, as fully and amply, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office.

IN WITNESS WHEREOF, Henry W. Nozko, Sr., Chairman and Henry W. Nozko, Jr., President, have hereunto subscribed their names and affixed the corporate seal of the **ACSTAR INSURANCE COMPANY** this 1st day of November 1993.

ACSTAR Insurance Company

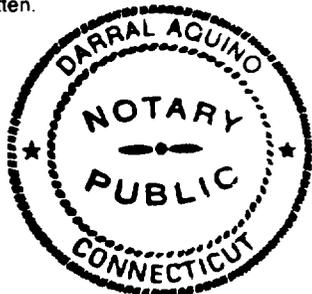
by
Henry W. Nozko, Sr., Chairman

by
Henry W. Nozko, Jr., President

STATE OF CONNECTICUT)
) ss. NEW BRITAIN
COUNTY OF HARTFORD)

On this 1st day of November A.D. 1993, before me, a Notary Public of the State of Connecticut came, Henry W. Nozko, Sr., Chairman and Henry W. Nozko, Jr., President of the **ACSTAR Insurance Company**, to me personally known to be the individuals and officers who executed the preceding instrument, and they acknowledged that they executed the same, and the seal affixed to the preceding instrument is the corporate seal of said Company; that the said corporate seal and their signatures were duly affixed by the authority and direction of the said corporation, and the Resolution adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of New Britain the day and year first above written.



Notary Public - Darral Aquino

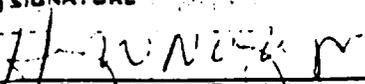
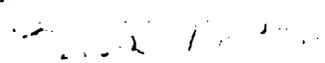
I, the undersigned, Secretary of **ACSTAR Insurance Company**, do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Secretary and affixed the corporate seal of the Corporation, this 25th day of November, 1993.

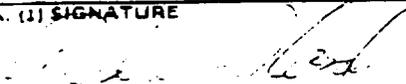
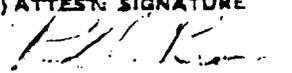
Robert H. Frazer Secretary

currency rate, interest rate or residual value guarantees.

4. DIRECT WRITING COMPANY

A. (1) SIGNATURE 	(2) ATTEST SIGNATURE 	Corporate Seal
B. (1) NAME AND TITLE (Typed) Henry W. Nozko, Jr. President	(2) NAME AND TITLE (Typed) Lisa Norton Secretary	

5. REINSURING COMPANY

A. (1) SIGNATURE 	(2) ATTEST SIGNATURE 	Corporate Seal
B. (1) NAME AND TITLE (Typed) Andrew Nosal Assistant Secretary	(2) NAME AND TITLE (Typed) Paul J. Brauner Vice President, Attorney-In-Fact	

INSTRUCTIONS

This form is to be used in cases where it is desired to cover the excess of a Direct Writing Company's underwriting limitation by reinsurance instead of co-insurance on bonds running to the United States except Miller Act Performance and Payment Bonds. See FAR (48 CFR) 28.202-1 and 53.228(j) and 31 CFR 223.11(b)(i). If this form is used to reinsure a bid bond, the "Penal Sum of Bond" and "Amount of this Reinsurance" may be expressed as a percentage of the bid provided the actual amounts will not exceed the companies' respective underwriting limitations.

Execute and file this form as follows:

Original and copies (as specified by the bond-approving officer), signed and sealed, shall accompany the bond or be filed within the time period shown in the bid or proposal.

One carbon copy, signed and sealed, shall accompany the Direct Writing Company's quarterly Schedule of Excess Risks filed with the Department of the Treasury.

Other copies may be prepared for the use of the Direct Writing Company and the Reinsuring Company. Each Reinsuring Company should use a separate form.

REINSURANCE AGREEMENT IN FAVOR OF THE UNITED STATES

(See Instructions on reverse)

DIRECT WRITING COMPANY * ACSTAR Insurance Company 233 Main Street New Britain, CT 06050		1A. DATE DIRECT WRITING COMPANY EXECUTES THIS AGREEMENT November 25, 1994
INSURING COMPANY * United Coastal Insurance Company 233 Main Street New Britain, CT 06050		1B. STATE OF INCORPORATION Illinois
2A. AMOUNT OF THIS REINSURANCE \$ 869,000.00		2B. DATE REINSURING COMPANY EXECUTES THIS AGREEMENT November 25, 1994
2C. STATE OF INCORPORATION Arizona		3. DESCRIPTION OF BOND 3B. PENAL SUM OF BOND \$ 6,500,000.00
DESCRIPTION OF BOND (Type, purpose, etc.) (If associated with contract number, date, amount, etc., include name of Government agency involved.) U.S. Nuclear Regulatory Commission Closure Bond Uranium Mill Site UA-917 Atlas Minerals Highway 191N Coal, Utah		3C. DATE OF BOND November 23, 1994
		3D. BOND NO. 5652
		3E. PRINCIPAL * Atlas Corporation 370 17th Street, Suite 3150 Denver, CO 80202
		3F. STATE OF INCORPORATION (If Corporate Principal) Delaware

Not Negotiable

COPY

AGREEMENT:

The Direct Writing Company named above is bound as a surety to the United States of America, on the bond described above, in the above-named is the principal. The bond is given for the protection of the United States and the Direct Writing Company has covenanted to the above Reinsuring Company to be reinsured and counter-secured in the amount shown opposite the name of the Reinsuring Company (referred to as the "Amount of this Reinsurance"), or for whatever amount less than the "Amount of this Reinsurance" the Direct Writing Company is liable to pay under or by virtue of the bond.

For a sum mutually agreed upon, paid by the Direct Writing Company to the Reinsuring Company which acknowledges its receipt, the Direct Writing Company covenants to this Agreement covenant and agree to the terms and conditions of this agreement.

TERMS AND CONDITIONS:

The purpose and intent of this agreement is to guarantee and indemnify the United States against loss under the bond to the extent of the "Amount of this Reinsurance," or for any less sum than the "Amount of this Reinsurance," that is owing and unpaid by the Direct Writing Company to the United States.

BEFORE:

If the Direct Writing Company fails to pay any default under the bond equal to or in excess of the "Amount of this Reinsurance," the Direct Writing Company covenants and agrees to pay to the United States, the obligee on the bond, the "Amount of this Reinsurance." If the Direct Writing Company fails to pay to the United States any default for a sum less than the "Amount of this Reinsurance," the Reinsuring Company covenants and agrees to pay to the United States the full amount of the default, or so much thereof that is not paid to the United States by the Direct Writing Company.

The Reinsuring Company further covenants and agrees that in case of default on the bond for the "Amount of this Reinsurance," or for the full amount of the default when the "Amount of this Reinsurance" or for the full amount of the default when the "Amount of this Reinsurance."

WITNESSES:

The Direct Writing Company and the Reinsuring Company, respectively, have caused this Agreement to be signed and impressed with their respective corporate seals by officers possessing power to sign this instruments, and to be duly attested to by officers empowered to do so, on the day and date above-written opposite their respective names.



233 MAIN STREET - P.O. BOX 2350
 NEW BRITAIN, CT 06050-2350
 (203) 224-2000

POWER OF ATTORNEY

Know all men by these presents: That ACSTAR Insurance Company, a corporation of the State of Illinois, having its principal office in the City of New Britain, Connecticut, pursuant to the following Resolution, which was adopted by the Board of Directors of the said Company on August 31, 1993, to wit:

RESOLVED That the following Rules shall govern the execution for the Company of bonds, undertakings, recognizances, contracts and other writings in the nature thereof

- 1) That the Chairman, the President, the Vice President and General Counsel or any Attorney-in-Fact, may execute for and on behalf of the Company any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof, the same to be attested when necessary by the Corporate Secretary or any Assistant Corporate Secretary and the seal of the Company affixed thereto, and that the Chairman or President may appoint and authorize any other Officer (elected or appointed) of the Company and Attorneys-in-Fact to so execute or attest to the execution of all such writings on behalf of the Company and to affix the seal of the Company thereto
- 2) Any such writing executed in accordance with these Rules shall be as binding upon the Company in any case as though signed by the President and attested to by the Corporate Secretary
- 3) The signature of the Chairman or the President of the Company may be affixed by facsimile on any power of attorney granted pursuant to this Resolution, and the signature of a certifying officer and the seal of the Company may be affixed by a facsimile to any certificate of any such power, and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company.
- 4) Such other Officers of the Company, and Attorneys-in-Fact shall have authority to certify or verify copies of this Resolution, the By-Laws of the Company, and any affidavit or record of the Company necessary to the discharge of their duties.

does hereby nominate, constitute and appoint

Henry W. Nozko, Sr., Henry W. Nozko, Jr., Robert H. Frazer, David A. Price, William J. Dykas each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding TWENTY MILLION DOLLARS (\$20,000,000.00) each, and the execution of such writings in pursuance of these presents, such be as binding upon said Company, as fully and amply, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office.

IN WITNESS WHEREOF, Henry W. Nozko, Sr., Chairman and Henry W. Nozko, Jr., President, have hereunto subscribed their names and affixed the corporate seal of the ACSTAR INSURANCE COMPANY this 1st day of November 1993.

ACSTAR Insurance Company

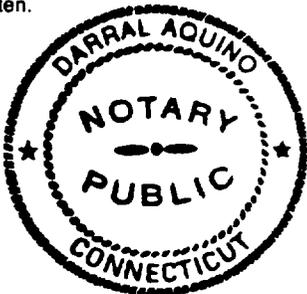
by *Henry W. Nozko, Sr.*
 Henry W. Nozko, Sr., Chairman

by *Henry W. Nozko, Jr.*
 Henry W. Nozko, Jr., President

STATE OF CONNECTICUT)
) ss. NEW BRITAIN
 COUNTY OF HARTFORD)

On this 1st day of November A.D. 1993, before me, a Notary Public of the State of Connecticut came, Henry W. Nozko, Sr., Chairman and Henry W. Nozko, Jr., President of the ACSTAR Insurance Company, to me personally known to be the individuals and officers who executed the preceding instrument, and they acknowledged that they executed the same, and the seal affixed to the preceding instrument is the corporate seal of said Company; that the said corporate seal and their signatures were duly affixed by the authority and direction of the said corporation, and the Resolution adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of New Britain the day and year first above written.



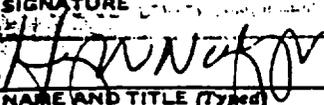
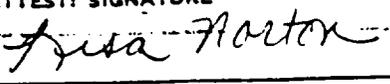
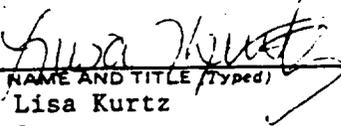
Darral Aquino
 Notary Public - Darral Aquino

I, the undersigned, Secretary of ACSTAR Insurance Company, do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Secretary and affixed the corporate seal of the Corporation, this 25th day of November, 19 94.

R. Frazer
 Robert H. Frazer Secretary

currency rate, interest rate or residual value guarantees.

ACSTAR Insurance Company		4. DIRECT WRITING COMPANY		
(1) SIGNATURE		(2) ATTEST: SIGNATURE		Corporate Seal
				
(1) NAME AND TITLE (Typed)		(2) NAME AND TITLE (Typed)		
Henry W. Nozko, Jr. President		Lisa Norton Secretary		
United Coastal Insurance Company		5. REINSURING COMPANY		
(1) SIGNATURE		(2) ATTEST: SIGNATURE		Corporate Seal
				
(1) NAME AND TITLE (Typed)		(2) NAME AND TITLE (Typed)		
Joseph D. Scollo, Jr. Vice President		Lisa Kurtz Secretary		

INSTRUCTIONS

This form is to be used in cases where it is desired to cover the excess of a Direct Writing Company's underwriting limitation by reinsurance instead of co-insurance on bonds running to the United States except Miller Act Performance and Payment Bonds. See FAR (48 CFR) 28.202-1 and 53.228(j) and 31 CFR 223.11(b)(i). If this form is used to reinsure a bid bond, the "Penal Sum of Bond" and "Amount of this Reinsurance" may be expressed as a percentage of the bid provided the actual amounts will not exceed the companies' respective underwriting limitations.

Execute and file this form as follows:

Original and copies (as specified by the bond-approving officer), signed and sealed, shall accompany the bond or be filed within the time period shown in the bid or proposal.

One carbon copy, signed and sealed, shall accompany the Direct Writing Company's quarterly Schedule of Excess Risks filed with the Department of the Treasury.

Other copies may be prepared for the use of the Direct Writing Company and the Reinsuring Company. Each Reinsuring Company should use a separate form.

REINSURANCE AGREEMENT IN FAVOR OF THE UNITED STATES
(See Instructions on reverse)

1. DIRECT WRITING COMPANY*		1A. DATE DIRECT WRITING COMPANY EXECUTES THIS AGREEMENT	
ACSTAR Insurance Company 233 Main Street New Britain, CT 06050		November 25, 1994	
2. REINSURING COMPANY*		1B. STATE OF INCORPORATION	
Transatlantic Reinsurance Company 80 Pine Street New York, NY 10005		Illinois	
3. DESCRIPTION OF BOND		2A. AMOUNT OF THIS REINSURANCE	
3A. DESCRIPTION OF BOND (Type, purpose, etc.) (If associated with contract number, date, amount, etc., include name of Government agency involved.)		\$ 2,000,000.00	
U.S. Nuclear Regulatory Commission Closure Bond Uranium Mill Site SUA-917 Atlas Minerals Highway 191K Moab, Utah		2B. DATE REINSURING COMPANY EXECUTES THIS AGREEMENT	
		November 23, 1994	
		2C. STATE OF INCORPORATION	
		New York	
		3B. PENAL SUM OF BOND	
		\$ 6,500,000.00	
		3C. DATE OF BOND	3D. BOND NO.
		November 23, 1994	5652
		3E. PRINCIPAL*	
		Atlas Corporation 370 17th Street, Suite 3150 Denver, CO 80202	
		3F. STATE OF INCORPORATION (If Corporate Principal)	
		Delaware	

NOT NEGOTIABLE

COPY

AGREEMENT:

(a) The Direct Writing Company named above is bound as a surety to the United States of America, on the bond described above wherein the above-named is the principal. The bond is given for the protection of the United States and the Direct Writing Company has applied to the above Reinsuring Company to be reinsured and counter-secured in the amount shown opposite the name of the Reinsuring Company (referred to as the "Amount of this Reinsurance"), or for whatever amount less than the "Amount of this Reinsurance" the Direct Writing Company is liable to pay under or by virtue of the bond.

(b) For a sum mutually agreed upon, paid by the Direct Writing Company to the Reinsuring Company which acknowledges its receipt, the parties to this Agreement covenant and agree to the terms and conditions of this agreement.

TERMS AND CONDITIONS:

The purpose and intent of this agreement is to guarantee and indemnify the United States against loss under the bond to the extent of the "Amount of this Reinsurance," or for any less sum than the "Amount of this Reinsurance," that is owing and unpaid by the Direct Writing Company to the United States.

THEREFORE:

1. If the Direct Writing Company fails to pay any default under the bond equal to or in excess of the "Amount of this Reinsurance," the Reinsuring Company covenants and agrees to pay to the United States, the obligee on the bond, the "Amount of this Reinsurance." If the Direct Writing Company fails to pay to the United States any default for a sum less than the "Amount of this Reinsurance," the Reinsuring Company covenants and agrees to pay to the United States the full amount of the default, or so much thereof that is not paid to the United States by the Direct Writing Company.

2. The Reinsuring Company further covenants and agrees that in case of default on the bond for the "Amount of this Reinsurance," or more, the United States may sue the Reinsuring Company for the "Amount of this Reinsurance" or for the full amount of the default when the default is less than the "Amount of this Reinsurance."

WITNESS:

The Direct Writing Company and the Reinsuring Company, respectively, have caused this Agreement to be signed and impressed with their respective corporate seals by officers possessing power to sign this instrument, and to be duly attested to by officers empowered thereto, on the day and date above-written opposite their respective names.

* Items 1, 2, 3E—Furnish legal name, business address and ZIP Code.
NSN 7540-01-025-6085
PREVIOUS EDITION USABLE

STAR Insurance Company		4. DIRECT WRITING COMPANY		
(1) SIGNATURE		(2) ATTEST SIGNATURE		Corporate Seal
(1) NAME AND TITLE (Typed)	Henry W. Nozko, Jr. President	(2) NAME AND TITLE (Typed)	Lisa Norton Secretary	
STAR Insurance Company		5. REINSURING COMPANY		
(1) SIGNATURE		(2) ATTEST SIGNATURE		Corporate Seal
(1) NAME AND TITLE (Typed)	Christopher L. Gallagher, Asst. V.P.	(2) NAME AND TITLE (Typed)	Joseph Guardo, Asst. Secretary	

INSTRUCTIONS

This form is to be used in cases where it is desired to cover the excess of a Direct Writing Company's underwriting capacity by reinsurance instead of co-insurance on bonds running to the United States except Miller Act Performance Payment Bonds. See FAR (48 CFR) 28.202-1 and 53.228(j) and 31 CFR 225.11(b)(i). If this form is used to issue a bid bond, the "Peril Sum of Bond" and "Amount of this Reinsurance" may be expressed as a percentage of the bid provided the actual amounts will not exceed the companies' respective underwriting limitations.

Execute and file this form as follows:

The original and copies (as specified by the bond-approving officer), signed and sealed, shall accompany the bond or be filed within the time period shown in the bid or proposal.

A carbon copy, signed and sealed, shall accompany the Direct Writing Company's quarterly Schedule of Excess Reinsurance filed with the Department of the Treasury.

Separate copies may be prepared for the use of the Direct Writing Company and the Reinsuring Company. Each Reinsuring Company should use a separate form.

2

LEBOEUF, LAMB, GREENE & MACRAE
L.L.P.

A LIMITED LIABILITY PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

NEW YORK
WASHINGTON
ALBANY
BOSTON
DENVER
HARRISBURG
HARTFORD
JACKSONVILLE

1000 KEARNS BUILDING
136 SOUTH MAIN STREET
SALT LAKE CITY, UT 84101
(801) 320-6700
FACSIMILE (801) 359-8256

WRITER'S DIRECT DIAL
(801) 320-6747

LOS ANGELES
NEWARK
PITTSBURGH
PORTLAND, OR
SALT LAKE CITY
SAN FRANCISCO
BRUSSELS
MOSCOW
ALMATY
LONDON
(A LONDON-BASED
MULTINATIONAL PARTNERSHIP)

December 9, 1997

VIA HAND DELIVERY

Don Ostler, P.E.
Executive Secretary
Utah Water Quality Board
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Re: Atlas Uranium Mill Tailings, Moab, Utah: Schedule Modification for
Required Submittals: Notice to Submit Required Schedule in 30 Days.

Dear Mr. Ostler:

This letter is in response to your letter of November 20, 1997, requiring Atlas Corporation to submit a proposed schedule for submission of a Ground Water Contaminant Investigation Report ("GWCIR") and Ground Water Corrective Action Plan ("GWCAP") for the Atlas Uranium Mill Tailings at Moab, Utah. Your letter indicates that the reason for modifying the decision of the Division of Water Quality ("DWQ") deferring submittal of the schedule is that the Nuclear Regulatory Commission ("NRC") has yet to issue its Final Environmental Impact Statement ("FEIS") and that resolution of water quality issues "does not appear to be achievable through the NRC process." The DWQ's decision deferring the schedule is set forth in its letter to Atlas of January 8, 1997, and is the result of an earlier meeting between Atlas, DWQ and the Division of Radiation Control ("DRC").

Y/a

Don Ostler, P.E.
December 5, 1997
Page 2

For the reasons set forth below, Atlas disagrees that there is a need to modify the substance of the January 8, 1997 letter. However, in the spirit of cooperation, Atlas has enclosed a schedule for submittal of the GWCIR and GWCAP. In doing so, Atlas expressly reserves the right to challenge the authority of the State of Utah to require the GWCIR and GWCAP and does not in any way waive any rights it may have in the appropriate court to do so.

You will note that the enclosed schedule for addressing water quality issues at the site was prepared to qualify NRC's concerns and regulatory requirements. The schedule should also satisfy the substantive requirements or concerns to the DWQ. The schedule is subject to change depending on the NRC's approval or modification of the schedule. Any such change required by NRC should be deemed to be incorporated automatically into the enclosed schedule.

It should be stressed that Atlas more than shares the State's frustration with the slow pace of the NRC process. Atlas has been working very hard to bring the NEPA review to a conclusion. The belated demand of the U.S. Fish & Wildlife Service ("FWS") that a study be performed on the impact on endangered species in the Colorado River is a significant source of delay. We are concerned, as well, that much of the delay in the issuance of the FEIS is a result of requests and demands of NRC by the State of Utah. Additional delay may be due to informal participation by the State in the formal consultation process between NRC and FWS. The submittal of a schedule inconsistent with that required by the NRC for addressing water quality would further contribute to the delays.

Although Atlas is submitting a schedule, we wish to state briefly why the requirement to submit a schedule is inappropriate for a number of reasons. First, there appears to be very little recognition of the contribution of sources upstream from the tailings pile to contaminant loading in the Colorado River. In other words, there appears to be little consideration of or communication about the existing environmental baseline in the River. Second, existing contamination in the River due to Atlas is largely the result of past operations. Significantly, the mass of data and analysis prepared in connection with the Atlas tailings has clearly indicated that there is no significant threat to human health or the environment, particularly if the NRC proposal is implemented. Third, any state ground and/or surface water requirement which differs from a requirement of the NRC either in substance or timing poses very serious legal issues. The two major issues relate to the exclusion of byproduct material under NPDES/UPDES requirements and the NRC's preemptive jurisdiction over nonradiological components of byproducts material.

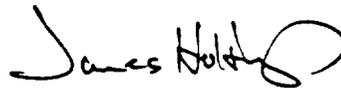
Don Ostler, P.E.
December 5, 1997
Page 3

No one is more frustrated at the pace of inaction by the NRC than is Atlas; however, we do not believe it would be in anyone's interest to require Atlas to undertake actions which might result in further delays or take other steps which would result in such delays.

As a final matter, Atlas does not intend by this letter to modify its request for a hearing before the Utah Water Quality Board and the Utah Radiation Control Board which it made in its October 15, 1996 responses to the September 12, 1996 letter from DWQ and DRC which required the submittal of the schedule for the GWCIR and GWCAP. Atlas' requests for a hearing are still pending, and, as indicated in its earlier responses, will be withdrawn by Atlas upon resolution of the issues of concern to Atlas.

If you have any questions, please let me know or call Richard Blubaugh of Atlas Corporation at (303) 629-2436.

Very truly yours,



James A. Holtkamp

cc w/encl: Richard Blubaugh
Anthony Thompson, Esq.
Grand Ohland
Bill Sinclair
Joseph J. Holonich
Fred G. Nelson, Esq.

3

Marla: I have given copies to Holmrich & Fliegel, Steve

KATCH, SENDER & WASSERMAN, P.C.
ATTORNEYS & COUNSELORS AT LAW
1899 BROADWAY, SUITE 2305
DENVER, COLORADO 80202

TELEPHONE
(303) 286-1888
TELECOPIER
(303) 286-7600

HARVEY SENDER, P.C.
ALSO MEMBER OF NEW MEXICO BAR

October 23, 1998

Robert Clark, Esq.
Assistant U. S. Attorney
1961 Stout St. #1100
Denver, CO 80294

RE: Atlas Corporation

Dear Mr. Clark:

I am writing this letter to convey certain time constraints and deadlines which Atlas Corporation faces in its Chapter 11 proceeding and to discuss the imperative need for an expeditious resolution and approval of the reclamation plan for the Debtor's site at Moab, Utah.

The Debtor filed its petition for relief under Chapter 11 of the Bankruptcy Code on September 22, 1998. The Creditors Committee was formed at the organizational meeting of creditors held on October 2, 1998. The meeting of creditors to be held pursuant to Section 341 of the Bankruptcy Code has been scheduled for October 27, 1998.

The Debtor's exclusive right to file a plan of reorganization will expire, unless otherwise extended by Order of the Bankruptcy Court, on January 22, 1999. The Debtor's ability to formulate a plan of reorganization and to prepare a disclosure statement is dependent upon its ability to obtain expeditious approval of the reclamation plan for the Moab, Utah. In order to have sufficient time to formulate and draft its plan of reorganization within the exclusivity period, the Debtor must obtain approval of its reclamation plan by January 5, 1999.

The ability to obtain expeditious approval of its reclamation plan is critical to the Debtor's ability to successfully reorganize. The Debtor has obtained a post-petition loan in the amount of \$750,000, which has been approved by the Bankruptcy Court. The post-petition loan will provide the Debtor with sufficient operating capital to operate through Mid-January 1999. The Debtor has further filed a motion with the Bankruptcy Court seeking approval of the sale of the Debtor's interest in Cornerstone Industrial Minerals Corporation under the terms of Deposit Agreement executed with Seven Peaks Mining, Inc. The Debtor anticipates that the sale, if approved and closed, will generate

4/3

OCT-23-98 FRI 02:54 PM

FAX NO.

P. 03/03

net funds for the Bankruptcy Estate in the approximate amount of \$2,100,000. The Debtor estimates that the Cornerstone sale will close in mid-January, 1999. These funds may be available to fund operating expenses.

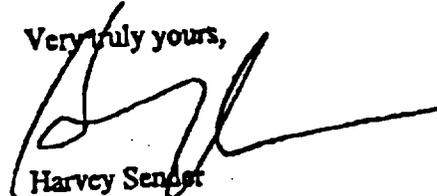
The Unsecured Creditors Committee and the Office of the United States Trustee have expressed concerns and reservations about the length of time the Debtor should be able to utilize assets of the Bankruptcy Estate, to maintain operations including preserving the site at Moab, Utah. They have further expressed concerns as to whether the funds from the Cornerstone sale should be utilized for these purposes. There are real concerns that if the Debtor is not able to obtain expeditious approval of a reclamation plan, and thus is unable to propose a plan of reorganization by early 1999, that the Creditors Committee and/or the United States Trustee will seek conversion of the case to preserve the remaining assets for the unsecured creditors. If the case is converted to Chapter 7, the Debtor's ability to fund its reclamation obligations at Moab would be limited to its bond in the amount of \$6,500,000.

At this point, the Creditors Committee and the United States Trustee concur that it is in the best interest of all parties that the Debtor be given an opportunity to reorganize. They support the Debtor's efforts to reorganize, provided that the Debtor is able to establish that it can expeditiously finalize its reclamation obligations and propose a plan of reorganization. It is critical to the Debtor's ability to reorganize and to fulfill its obligations under the reclamation plan that we work expeditiously to obtain approval of the plan by January 5, 1999.

The other timing issue relates to the need of a third party contractor, i.e. Harding Lawson Associates ("HLA"), to complete the majority of the work by the end of 2002 to have access to the Title X funds. In order to meet that schedule, HLA will need to begin work by sometime in the spring of 1999. Any agreement with HLA and Emsource will be part of a plan of reorganization. Approval of a plan will take approximately 90 days after it is filed. Therefore, a plan based upon a HLA agreement needs to be filed by late January or February 1999.

If Atlas is able to obtain NRC approval of the reclamation plan and then bankruptcy court approval of the plan of reorganization, the amount available to accomplish the reclamation plan would be approximately \$20,000,000. If, on the other hand, Atlas can not obtain approval and is forced to convert to a Chapter 7, the amount available to accomplish any reclamation, including holding the property, would be reduced to \$6,500,000. If you have any questions, comments or suggestions, please contact me.

Very truly yours,



Harvey Sender

cc: Greg Shafer
Tony Thompson, Esq.

4

From: Joseph Gray
To: SGB1
Date: Tue, Nov 23, 1999 5:19 PM
Subject: Fwd: Atlas hearing

I don't really want to see this kind of stuff, tho I will call it a procedural/status matter that doesn't give me a separations problem. Nevertheless, you may want to think about PWC's involvement in our agency hearings (spending trust money on that kind of thing) and let the staff know about any views you may have on what the trustee ought to be doing.

1/4

From: Myron Fliegel
To: Lisa Clark
Date: Tue, Nov 23, 1999 3:16 PM
Subject: Atlas hearing

Lisa:

A suggestion was made that we request a delay in the hearing. Atlas Corp. has not been participating in the hearing because of the bankruptcy. A trustee (PricewaterhouseCoopers) has recently been named and the license should be transferred to PWC next month. PWC will have to live with whatever decisions come out of the hearing. It can be argued that PWC should have the opportunity to review the situation and decide if it wants to participate in the next phase of the process, and if so, to what extent. In order to do that, an extension for the next filing would have to be granted to allow PWC to review the hearing record, consult with counsel and make a decision. I would think at least 30 days and, if possible, 60 days would be reasonable.

Mike

CC: Daniel Gillen, Dennis Dambly, Joseph Holonich, ...



5

ATLAS CORPORATION |

Republic Plaza, 370 Seventeenth Street, Suite 3050
Denver, CO 80202
Telephone: (303) 629-2440 Fax: (303) 629-2445

RICHARD E. BLUBAUGH
Executive Vice President

December 2, 1998

Mr. Bradley Campbell
Executive Office of the President
Council on Environmental Quality
Washington, D.C. 20503

Dear Mr. Campbell:

This letter follows up the November 23, 1998 visit to the Atlas uranium mill and tailings site by Secretary Babbitt, Governor Leavitt and Congressman Cannon. Atlas welcomed the visit with the hope that it would be an opportunity to find a resolution to the continuing controversy over how to treat the tailings pile left on Atlas' property from its uranium milling operation. Perhaps we read too much into the November 20, 1998 article in The Salt Lake Tribune that stated the Governor and the Secretary would like to find a solution that would please everyone.

It was disappointing, indeed, to hear the Secretary repeat the same old misinformation about the characteristics of the site even though Atlas has made very large investments of time and money to assure that scientifically correct information was provided to NRC and the administrative record. Atlas is not alone in its efforts to focus attention on the facts of science. The EPA has stated that, "[o]n-site reclamation/stabilization does not pose a threat to the Colorado River in terms of the river's capacity to serve as a water supply for the production of drinking water."¹ Also, EPA has stated that even if the site were to become a Superfund site, "[o]n-site reclamation would be equally, if not more, likely" than moving the pile. By the nature of our visitors last Monday it is apparent that those who desire a political resolution are doing their best to put science in the back seat and look only to their own agenda.

Atlas' understanding was that in late 1993, pursuant to the National Environmental Policy Act (NEPA), an Environmental Impact Statement (EIS) would be performed by the U.S. Nuclear Regulatory Commission (NRC), and that this scientific and technical evaluation would be the basis for a final decision on Atlas Corporation's proposed reclamation plan. Rather than challenge this decision in the legal arena at that time, Atlas opted to cooperate in an effort to expedite the review, a review the company felt would validate the proposed plan and establish the clean up liability for the company's Moab, Utah property.

¹ William P. Yellowtail, EPA Regional Administrator, Region 8; April 10, 1998

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Atlas Uranium Mill and Tailings
11/23/98 Site Visit Follow up
December 2, 1998

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As you know, the EIS has not been issued as a final decision document, now nearly five years later. Atlas has incurred millions of dollars of expense in professional fees for attorneys and consultants in order to address, in the most definitive manner possible, questions about inactive faults, seismicity and stability, surface water hydrology, probable maximum floods, rock fall hazards, sand dune migration, groundwater hydrology, soil moisture, radon emanation coefficients, rock durability, permeability, seepage rates, etc., etc. Atlas made these studies available to all interested parties and even held a public information meeting in Moab to discuss questions interested parties might have. Atlas has complied with all requests for information from the NRC and has responded to questions directed to the company by the public.

NRC has reviewed Atlas' studies at length and has sent its scientists and engineers, as well as those of its consultant, Oak Ridge National Laboratory, to the site and surrounding environs, numerous times, to investigate these matters independently. The NRC standards are no less, and no different than those promulgated by the Environmental Protection Agency (EPA) for these types of sites. NRC determined in March 1997 that Atlas' proposed plan satisfied the regulatory requirements. Atlas assumes that the final approval to proceed will likely be issued when the final EIS is published. If this final approval is then subject to political intervention then one has to ask, "Was this intense scientific scrutiny necessary if the final decision was going to be one of political expediency?"

It is common knowledge that NRC is the independent agency which Congress authorized to regulate radioactive waste disposal, which includes uranium mill tailings sites like the one owned by Atlas Corporation. The recommendation to transfer this site to the Department of Energy (DOE) is based on yet more misinformation. In fact, as I am sure you know, NRC approved the reclamation plans proposed by the Department of Energy (DOE) for the Title I uranium tailings sites. The NRC regulates both Title I and Title II sites under the Uranium Mill Tailings Radiation Control Act of 1978. The major difference affecting why piles have been moved is simply that DOE has chosen to respond more agreeably to political requests to relocate certain tailings piles than would a private sector company like Atlas. Evidently, the taxpayers do not object as strenuously as shareholders if their money is spent to satisfy political agendas.

The proponents for moving the tailings pile have made a number of allegations since 1993 that have resulted in delays and increased costs to Atlas and have effectively stalled the licensing process of the U.S. Nuclear Regulatory Commission (NRC). What was to be a fast-track NEPA process that would have resulted in a license amendment in 12 to 14 months has now taken nearly five years. Atlas filed for relief under Chapter 11 of the Bankruptcy Code September 22, 1998, partly as a result of not being able to resolve the uncertainty of liability associated with the Moab site. It is obvious to the management of Atlas Corporation that the recent intervention by Secretary Babbitt is, wittingly or not, merely a continuation of this strategy of continuing to find some reason to delay a final action on this matter, thus making the demise of Atlas more of a certainty. With Atlas out of the way, federal legislation would

Atlas Uranium Mill and Tailings
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also be a certainty and not a matter of debate, at least that appears to be the mindset of those favoring removal of the pile.

Perhaps we should analyze this strategy a little closer. A key question for public policy-makers is, "What happens if Atlas Corporation converts to a Chapter 7 bankruptcy and is unable to reclaim the site?" The answer is not clear. It is likely that federal legislation would still be necessary to provide the requisite funding, unless, of course, the site gets listed on the NPL and becomes a Superfund site. However, contrary to the desires of those who would see the pile moved, EPA has already indicated that it would most likely support capping the pile in place just as it did at the Sharon Steel site. What is clear in this case is that the time required to resolve the who, what, where and how will be significant. As much as ten years might be needed for legislation, another design, EIS and the public participation process; then another ten to twelve years would be necessary to implement the removal action; a total of twenty or more years. Meanwhile, the alleged contamination decried by the Grand Canyon Trust and others would continue, potentially resulting in impacts to the river and the fish, if there truly are any, that would be worse because of the delay. Because there would be no protective cap during the period necessary to reach resolution and take action, more precipitation would infiltrate the tailings and ultimately reach the river. What the claimants of the litigation fail to address is that moving the pile does not result in quicker environmental benefits to water quality. In fact, water quality could very well be more degraded for a longer period of time by the relocation effort.

Atlas Corporation is working diligently to fulfill its obligation even while in the bankruptcy process by working closely with NRC and its independent contractors who are attempting to complete work on the arrangement to transfer liability, provided there are no delays or added costs. Atlas believes that proceeding expeditiously with its plan, which has been subjected to intense scrutiny by NRC and its independent contractors, will provide protection to public health and the environment required by law and regulation. The initial motivation for the Uranium Mill Tailings Radiation Control Act (1978) was the threat to human health from radon gas emanated from the tailings. Moving the pile has been shown to present higher risks to human health than the capping design by as much as fivefold, primarily due to the release of radon gas and accidents involving workers and the public.

Even those who desire to see the tailings pile moved would surely agree that there is benefit to human health and the environment if Atlas is allowed to proceed immediately with the dewatering component of the reclamation plan. This action alone would mean that less contaminants are likely to enter the groundwater and, subsequently, the Colorado River. And, if efforts to secure authorizing legislation and the necessary funding takes one or two years, the reclamation activities will add protective cover to the pile thus reducing radon emanation and precipitation infiltration. These activities would not be considered an irretrievable commitment of resources since the benefits to human health and the environment in the interim would be significant and the added cost to a relocation effort would be insignificant.

Atlas Uranium Mill and Tailings
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A follow up question for policy-makers might be, "If Atlas Corporation is not able to pay for the relocation of the pile, and that is the desired objective, who is going to pay?" This question is easier to answer. Even in its demise Atlas would contribute, but probably no more than the \$6.5 million surety bond. The additional funds would have to come from federal taxpayers and, most likely, state taxpayers as well.

Is the benefit to be derived from moving the pile likely to be worth the cost? This question may have more than one answer. Atlas understands that to some parties this is not simply a question of science and technology any longer, although it should be. We also recognize that you will be a participant in the formulation of any resolution to this matter. We trust that the information provided herein will be helpful as the debate and deliberations continue. Let me reiterate that time is of the essence to Atlas and its ability to formulate a reorganization plan under Chapter 11 of the Bankruptcy Code. Atlas can be a large part of the resolution of this issue. On the other hand, Atlas can be just a historical footnote. We hope you will agree that Atlas' continuing involvement is desirable and necessary to the closing of the Atlas uranium mill and tailings site.

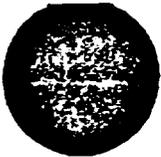
Please do not hesitate to call the undersigned should you have any questions, would like additional information, or if you would like to meet with Atlas management. Atlas urges you to take whatever action you can to support Atlas' proposal to proceed with its reclamation plan in order to provide the environmental and human health benefits required by law. Even if the political will is to move the tailings pile, these remedial actions will be beneficial during the interim period necessary to obtain the legislative authority and the ultimate implementation of any removal plan.

Very truly yours,



Richard E. Blubaugh

cc: Gregg Shafter
Molly McUsic
Hugh Thompson

**ATLAS CORPORATION** |

Republic Plaza, 370 Seventeenth Street, Suite 3050
Denver, CO 80202
Telephone: (303) 629-2440 Fax: (303) 629-2445

RICHARD E. BLUBAUGH
Executive Vice President

December 9, 1998

VIA FACSIMILE: (202) 456-6546

Mr. Bradley Campbell
Associate Director
Toxics and Environmental Protection
Council on Environmental Quality
722 Jackson Place, NW
Washington, DC 20503

Dear Mr. Campbell:

By letter of December 2, 1998, Atlas Corporation wrote to you to express our commitment to achieving prompt completion of NRC review and approval of the reclamation plan for our Moab, Utah mill tailings site. As expressed in that letter, Atlas has invested significant resources to achieve final closure of the site. It is essential that we bring the process to a close if our company is to fulfill our regulatory obligations and survive the bankruptcy process. Because the NRC process is the only one currently available to Atlas to achieve final closure, and because the relevant evidence demonstrates that on-site closure complies with the pertinent regulatory requirements and can be successfully achieved, Atlas will continue to pursue reclamation pursuant to our current plans to the best of our abilities.

Although Atlas must and will continue with the NRC process, we also understand that certain involved federal agencies are exploring a legislative option in that process as well, so long as it is clear that our interests are being adequately protected. We appreciate Secretary Babbitt's interest in pursuing a consensus-based and equitable result. It must be understood that to achieve such consensus, the interests of Atlas cannot be made secondary to the goal of some parties to achieve removal of the pile at any cost. While continuing to pursue site closure by capping the pile in place, we will work with you and the other appropriate parties to craft a legislative proposal that protects our interests. At a minimum, this will require that Atlas be absolved of all responsibility and liability for the pile after Atlas transfers appropriate assets and resources to the federal government. We also recommend that, if the acquisition of federal funds to move the pile is to require some years to complete, it is advisable to allow Atlas to proceed with capping of the pile to address public health and environmental issues on an interim basis. The incremental cost of moving the pile after it has been capped would be inconsequential to the overall effort.

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Mr. Bradley Campbell
Legislative Approach
December 9, 1998

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Our support for this approach is time-sensitive. Atlas cannot tolerate further delay in bringing this matter to a close. If legislation is not forthcoming in the very short term, it will not be of any value to us. Please be sure to contact us at such time as the federal government is prepared to move forward with affirmative steps to proceed with such an option.

Please contact me with any questions you may have regarding the elements of legislation that Atlas considers to be essential. In the meantime, we will continue to press forward, as we are obligated to do, with the NRC site reclamation process.

Very truly yours,



Richard E. Blubaugh

cc: Gregg B. Shafter, Atlas
Molly McUsic, DOI
Hugh Thompson, NRC
Anthony Thompson, SPP&T
Harvey Sender, S&W
Don Baur, PC

7

From: Stephanie Martz
To: John Surmeier, Joseph Gray, Joseph Holonich, Ma...
Date: Tue, Nov 16, 1999 10:53 AM
Subject: Fwd: Time estimates II

Attached is the time estimate I received from Keith Eastin. As you will see, this looks like a huge chunk of money in a relatively short time frame.

H/7

From: <keith.e.eastin@us.pwcglobal.com>
To: OWFN_DO.owf5_po(SRM1)
Date: Tue, Nov 16, 1999 10:10 AM
Subject: Time estimates II

DRAFT - CONFIDENTIAL
 Moab Reclamation Trustee
 Preliminary Time estimates

PHASE 1 ? FAMILIARIZATION AND ORGANIZATION (12/15/99 ? 2/15/00)

1. Organizational conferences with NRC and State of Utah
2. Trust administrative details
3. Cost and accounting system established
4. Develop budget parameters
5. Commence cataloging and analyzing ?hundreds? of boxes of Atlas documents relating to the Site
6. Develop contracting plan
 - Qualifications, factors, weighting and scope of work
 - Interview contractors and other professionals
 - Select contractor(s) and have them in place
7. Interviews and analysis with technical and professional personnel regarding realistic milestone dates to be included in future amendment of license
8. Define assets ? prospects for monetizing
9. Establish ?working office? in Moab, Utah
10. Prepare and attend ?community? meeting(s)
11. Site visit(s)

Estimated Two Month Staffing:

WBA	40 hrs	@\$295	\$11,800
KEE	240 hrs	@\$295	\$70,800
Constr. Mgr.	20 hrs	@\$295	\$5,900
TEP	240 hrs	@\$295	\$70,800
Staff	320 hrs	@\$195	\$62,400
Staff	320 hrs	@\$195	\$62,400
Constr. Staff	20 hrs	@\$195	\$3,900

Estimated Total through 2/15/00 \$288,000

PHASE 2 ? INITIAL OPERATING STAGE (2/16/00 ? 6/15/00)

1. Collecting assets and defining asset monetization plan
2. Commence design phase

3. Cataloging and analyzing Atlas documents

Estimated Four Month Staffing:

WBA	8 hrs	@\$295	\$2,360/mth
KEE	60 hrs	@\$295	\$17,700/mth
TEP	60 hrs	@\$295	\$17,700/mth
Staff	80 hrs	@\$195	\$15,600/mth

Estimated Monthly Total \$53,360

Estimated Total 2/16/00 ? 6/15/00 \$213,440

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by smtp (GroupWise SMTP/MIME daemon 4.1 v3)
; Tue, 16 Nov 99 10:44:36 EST

Received: from nrc.gov
by smtp-gateway SMTPœ id KAA25277
for <srn1@nrc.gov>; Tue, 16 Nov 1999 10:45:03 -0500 (EST)

From: keith.e.eastin@us.pwcglobal.com

Received: by oak.us.pw.com; id KAA03119; Tue, 16 Nov 1999 10:45:26 -0500

Received: from moss.us.pw.com(10.9.16.183) by oak.us.pw.com via smap (4.1)
id xmaa26502; Tue, 16 Nov 99 10:10:39 -0500

Received: from intlnamsmtp20.us.pw.com by moss.us.pw.com (PMDf V5.1-12 #U3018)
with SMTP id <0FLA0016OQCI2D@moss.us.pw.com> for srm1@nrc.gov; Tue,
16 Nov 1999 10:14:42 -0500 (EST)

Received: by
intlnamsmtp20.us.pw.com(Lotus SMTP MTA v1.2 hotfix6 (702.3 8-27-1998))
id 8525682B.005338B8 ; Tue, 16 Nov 1999 10:09:00 -0500

Date: Tue, 16 Nov 1999 09:10:06 -0600

Subject: Time estimates II

To: srm1@nrc.gov

Message-id: <8525682B.00534688.00@intlnamsmtp20.us.pw.com>

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Content-type: text/plain; charset=iso-8859-1

Content-disposition: inline

Content-transfer-encoding: quoted-printable

X-Lotus-FromDomain: AMERICAS-US@INTL

8

From: Stephen Burns
To: Stephanie Martz
Date: Fri, Dec 17, 1999 1:51 PM
Subject: Re: Atlas - Essig Update

Good enough - I presume we all recall why we took \$5.25 m cash rather than the bond: a) it nixed any litigation between ACSTAR and us over whether the bond was payable as well as nixed continued bankruptcy litigation during which we would have no funds (moreover, future payment from the bond would have to be discounted to reflect the present value of \$5.25 m in order to make any comparison valid; b) we received interest in other assets (i.e., Title X receivables from DOE) that would put additional cash (\$1.25-1.5 m) by mid-2000; c) because we entered into an overall settlement, we received real and other property interests for the trust with some, if not immediately liquid, value.

CC: jrg, Maria Schwartz

H/S

9

**Determination of a Safe Level of Ammonia that is Protective of
Juvenile Colorado Pikeminnow in the Upper Colorado River, Utah**

by

James F. Fairchild and Ann L. Allert
Columbia Environmental Research Center
Biological Resources Division, USGS
4200 New Haven Rd
Columbia, MO 65201
phone 573-876-1871
Fax 573-876-1896
email James_Fairchild@usgs.gov

and

Janet Mizzi, Ronnette Reisenburg, and Bruce Waddell
U.S. Fish and Wildlife Service
Ecological Services, Utah Field Office
145 East 1300 South, Suite 404
Salt Lake City, UT 84115
801-524-5001

Dec. 30, 1999

Final Report

1998 Quick Response Program

A/9

Determination of a Safe Level of Ammonia that is Protective of Juvenile Colorado Pikeminnow in the Upper Colorado River, Utah

Final Report

1998 Quick Response Program

Partner Agency and Region: U.S. Fish and Wildlife Service Region 2 (Salt Lake City Office)

Principle Introduction Investigators: James F. Fairchild and Ann L. Allert

INTRODUCTION

Various sections of the un-impounded portions of the Upper Colorado River above Lake Powell have been declared critical habitat (Fed. Reg. 59:13374-13400) for four endangered fish species: Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), humpback chub (*Gila cypha*), and bonytail chub (*Gila elegans*). The U.S. Fish and Wildlife Service, under the auspices of Section 7 of the Endangered Species Act, must seek to protect these species and determine if any private, State, or Federal activities could jeopardize remaining populations of these endangered species.

The abandoned Atlas Mill Uranium Tailings Pile, located on the western bank of the Upper Colorado River near Moab, Utah, is a perceived threat to endangered fish species of the Upper Colorado River (USFWS 1998). This tailings pile lies in the immediate vicinity of critical habitat for both the Colorado pikeminnow and the razorback sucker. The U.S. Nuclear Regulatory Commission, in cooperation with other Federal and State agencies, is currently evaluating several options for long-term stabilization of the tailings pile (e.g. capping, removal, etc.) based on several environmental, economic, and legal factors.

In early 1998 the U.S. Fish and Wildlife Service requested that the Columbia Environmental Research Center (CERC), Biological Resources Division (BRD), U.S. Geological Survey (USGS), Columbia, MO provide research and technical assistance to determine the potential adverse impacts of the tailings pile to the endangered fish species of the Upper Colorado River. Subsequently, the Central Region of the USGS/BRD provided \$20,000 in funding to the CERC via the Quick Response Program to facilitate research and technical assistance to the U.S. Fish and Wildlife Service. This final report presents the background information, research results, and conclusions derived from this Quick Response Project.

History of the Atlas Mill Facility:

The Atlas Mill Tailings Pile is located on the west bank of the Upper Colorado River in the 100-year flood plain. The property and facilities were originally owned by the Uranium Reduction Company and regulated by the Atomic Energy Commission, precursor to the Nuclear Regulatory Commission (NRC). The mill and site were acquired by the Atlas Corporation in 1962. Atlas Corporation ceased operation of the mill and ore milling in 1984.

Milling of ore at the Atlas site has resulted in a large tailings pile located approximately 230 m from the west bank of the Upper Colorado River and 3.7 km northwest of Moab, Utah. The pile occupies about 53 ha of land and is about 0.8 km in diameter and 28.65 m high. The pile rises to an elevation of 1,237 m above mean sea level with a height of about 27 m above the surface of the Colorado River terrace, which is approximately 1,210 m above mean sea level at the south side of the pile nearest the river (USFWS 1998).

Current drainage from the pile has been estimated by Oak Ridge National Laboratory (ORNL) in Grand Junction, Colorado to be between 25 and 75 liters per minute and could take up to 270 years to drain the pile; similarly, it is estimated that concentrations of contaminants in the adjacent ground water will not reach a steady state for approximately 240 years (ORNL, 1998 a). The ground water contamination plume extends beyond the Atlas property to the south and is over 1,700 m wide and 10 m deep and discharges directly into the Colorado River (ORNL, 1998 b). The plume for some contaminants (ammonia, uranium, molybdenum and nitrates) is mature and these constituents have been discharging to the river since the early 1970's (ORNL, 1998 c). The U.S. Fish and Wildlife Service believes that for other contaminants (e.g., selenium) the plume has not fully reached the bank of the Colorado River (USFWS, 1998).

Atlas Corporation activities at the Atlas site are currently covered by NRC Source Material License SUA-917 and regulated under the Title II Uranium Mill Tailings Radiation Control Act of 1978. The Atlas Corporation was previously involved in the process of closing and reclaiming the Atlas site. However, in 1998 the company declared bankruptcy and was not able to complete a Corrective Action Plan (CAP) for approval by the NRC. Thus, the remedial action plan for the site remains incomplete.

Significance of Research to the USFWS and other Management Agencies:

The USFWS Utah Field Office has been assessing the proposed reclamation of the Atlas Mill Tailings Pile since 1983. At that time the Utah Field Office expressed its concern in a letter to the Assistant Regional Director concerning a review of the Emergency and Remedial Response Information System Inventory and identified concerns about possible effects on Colorado pikeminnow and razorback sucker. On June 26, 1997, the Service issued a draft jeopardy biological opinion (DBO) to the Nuclear Regulatory Commission. Since issuance of the DBO, the Service, Council of Environmental Quality (CEQ), Department of Interior (DOI), and Service solicitors have all been working with the NRC and the Trustees to resolve the issues and determine the best means of reclamation of the Site. The Service has since issued a revised draft biological opinion (RDBO) on April 14, 1998 to the Region 6 Regional Office (RO) and is awaiting comments to finalize the opinion. The RDBO concluded jeopardy to the four endangered Colorado River fishes from the contaminated leachate leaking into the Colorado River from the

tailings pile. The RDBO included three reasonable and prudent alternatives to avoid jeopardy: (1) expedite planning and implementation of a groundwater corrective action plan; (2) defer the decision on capping the pile until expeditiously arranged bioassay studies could be conducted to more effectively determine cleanup levels required to remove jeopardy to listed species and; (3) payment of a depletion fee to the Colorado River Recovery Program to offset the impacts of the 154.3 acre-foot water depletion identified for the proposed action (USFWS, 1998).

Data collected by ORNL further supports the Service's biological RDBO in concluding that the Atlas Mill Tailings Pile is a site-specific point source of ammonia and that the proposed capping of the pile in place may jeopardize the continued existence of razorback sucker and Colorado pikeminnow due to the continued leaching of contaminated groundwater into the Colorado River (ORNL, 1998 b). Additionally, the proposed action will result in the destruction or adverse modification of designated critical habitat for the Colorado pikeminnow and razorback sucker (USFWS, 1998).

The current RDBO jeopardy opinion has been based on the best available data and opinion of Service resource professionals. Based on the precarious existence of the Colorado River fishes and the fact that the Site is located near a suspected fish nursery area, the Service has determined that the level of take anticipated under the proposed reclamation action could impact population numbers and recruitment and is sufficient to jeopardize the continued existence of these species (USFWS, 1998). All three constituent elements of designated critical habitat for Colorado pikeminnow and razorback sucker will be adversely modified: 1) water that is of good quality; 2) physical habitat potentially habitable by fish during all life stages; and 3) a biological environment capable of providing a food supply for the endangered fishes (USFWS, 1998). The Service feels that the proposed reclamation project activities could result in continued input of contaminated water into the Colorado River mixing zone until an acceptable groundwater corrective action plan is approved and implemented.

The development of the corrective action plan is dependent on a determination of a criterion or safe concentration of ammonia that is protective of Colorado pikeminnow and other endangered fishes in the river. This protective concentration must then be compared to measured ammonia concentrations in the river to conduct a site-specific risk assessment. The collective results of these studies will be used by the U.S. Fish and Wildlife Service in assisting the NRC and other Federal and State agencies in developing effective remedial action plans for the site which protect remaining populations of endangered fishes in the Upper Colorado River.

Objectives:

This study had three objectives:

- 1) Conduct spatial mapping to determine the distribution of ammonia, metal, and radiochemical concentrations in the Upper Colorado River adjacent to and below the Atlas Mill Tailings Pile in order to estimate exposures to endangered fishes,
- 2) Conduct toxicity testing with early life stages of fathead minnows and Colorado pikeminnow to determine the concentration of ammonia that is protective of endangered fishes in the Upper Colorado River, and
- 3) Compare the toxicity of ammonia to measured environmental concentrations to conduct a site-

specific risk assessment.

METHODS

Site mapping for contaminant concentrations:

Water was collected in a regular grid framework extending from 500 m above to 1,000 m below the Moab Wash. The Moab Wash lies adjacent to the Atlas site and represents a major seasonal hydrologic input. Ammonia is the major contaminant known to be directly associated with the tailings pile and was used as a primary variable for mapping. A differentially-corrected global positioning system was used to establish a sampling grid arranged in a regularly-distributed pattern (Figure 1). Groundwaters (e.g. water removed from a porewater pit dug in shoreline soil to 30cm depth within a meter of the shore) were collected as grab samples. Surface and bottom grab samples were collected at each grid intersection and refrigerated until analyzed for ammonia, metals, and radiochemicals. In addition, water samples were analyzed in-situ for temperature, pH, dissolved oxygen and conductivity using a Hydrolab Datasonde 3 Multiparameter Water Quality Instrument. Ammonia was analyzed on-site using a Technicon Autoanalyzer II System using a salicylate/nitroprusside colorimetric reaction (detection limit 0.1 mg/L total ammonia). Ammonia concentrations were calculated based on a 5-pt standard curve. Precision and accuracy were determined based on triplicate analysis of independent, certified Hach and Orion ammonia standards on each day. All samples were analyzed within 24 h of sampling. All ammonia concentrations were expressed as $\text{NH}_3\text{-N}$.

Water samples for analysis of dissolved metals (ICP-MS analysis of 30 metals) and radiochemicals (total alpha, total beta, and selected gamma constituents) were stored on ice (temp. $<4^\circ\text{C}$) and shipped via overnight mail to the National Air and Radiation Environmental Laboratory (NAREL) in Montgomery, AL. Analysis of metals and radiochemicals were conducted according to NAREL's U.S. Environmental Protection Agency (USEPA) methods.

Toxicity Testing:

Toxicity testing was conducted using larval fathead minnows and juvenile Colorado pikeminnow. Toxicity testing was conducted according to standard procedures as described by the U.S. EPA Effluent Toxicity Procedures (USEPA, 1994) and the American Society for Testing and Materials (ASTM, 1997).

Ammonia was delivered as ammonium chloride (J.T. Baker Chemical Co., Phillipsburg, NJ). Seven-day static renewal studies (Colorado pikeminnow) and 72 h static renewal studies (Colorado pikeminnow and fathead minnow) were conducted. Ten juvenile Colorado pikeminnow (approximately 60 days old) were exposed in 1000-ml beakers (800 ml test volume) containing one of two water sources: 1) Colorado River Water, or 2) CERC well water. This comparison was conducted to determine if the source of water (i.e. site-specific conditions) has an effect on the toxicity of ammonia. Approximately 200 L of Colorado River Water was collected from above the Moab Tailings Pile (i.e. low in ammonia) and was shipped on ice ($\leq 4^\circ\text{C}$) in polyethylene carboys

to the CERC. Water was stored at $\leq 4^{\circ}$ C until use. Four days prior to the study the 60-d old Colorado pikeminnow and larval fathead minnow were acclimated to respective test waters (i.e. either well or Colorado River water). Then, the toxicity tests were initiated. Ammonia was delivered in an 50% dilution series ranging from 0 - 64 mg/L (total ammonia) consisting of eight concentrations (e.g. 64, 32, 16, 8, 4, 2, 1, and 0 mg/L); each concentration was tested in triplicate. Larval fathead minnow (<48 h old) and juvenile Colorado pikeminnow (approximately 60 d old) were tested in side-by-side experiments in well water (72h exposure) using the same experimental design to test the effects of ammonia across species and water sources.

Exposure containers (1000-ml beakers containing 800-ml test water) were maintained at constant temperature (25° C) under a 16h:8 h light:dark photoperiod. Test concentrations were renewed daily by siphoning approximately 90% of water from each beaker prior to replacement with fresh solution. Total ammonia was measured daily in both newly renewed and removed test waters to determine the accuracy and precision of the ammonia exposures. The pH (Orion Model 940 Meter), dissolved oxygen (YSI Model 54 Meter), and temperatures (YSI Model 54 Meter) were measured daily in the 64, 16, 1, and 0 mg/L treatments prior to renewal (e.g. 24-h old exposure water). Un-ionized ammonia, the toxic form, was calculated based on temperature and pH according to Thurston et al. (1977). Alkalinity, hardness, and conductivity were measured in the 64, 16, 1, and 0 mg/L concentrations of both source waters at the beginning and end of the test. All water quality measures were conducted using CERC Standard Operating Procedures, which are developed in accordance with methods recommended by the APHA (1995) and manufacturers recommendations. Fish were fed brine shrimp nauplii *ad libitum* two times per day at least 6 h apart. At the end of the study the fish were euthenized using MS-222 and immediately dried (60° C) and weighed for final weights.

Similar testing procedures were used to determine the on-site toxicity of actual site water (e.g. containing ambient ammonia, metals, and radiochemicals) on juvenile Colorado pikeminnow. Samples from 9 sites (30 L total water per site), selected across a range of measured ammonia concentrations, were sampled and placed on ice. A 7-d static renewal study (25° C) was conducted in a mobile testing trailer maintained under a 16h:8 h light:dark schedule. Ten Colorado pikeminnow (90 days old) were tested in each of 3 replicate beakers per site. Mortality, ammonia, pH, dissolved oxygen, and temperature were determined daily. Alkalinity, conductivity, and hardness were determined every other day. Radiochemicals and metals were sampled once from each batch of site water. Fish were fed brine shrimp *ad libitum* two times per day at least 6 h apart. At the end of the study the fish were euthenized using MS-222 and immediately dried (60° C) and weighed for final weights.

Analytical Chemistry:

All analytical chemistry was conducted according to standardized procedures described by the USEPA (1994), ASTM (1997), or the American Public Health Association (APHA, 1995). Analysis of metals and radiochemicals was conducted by the EPA-National Air and Radiation Environmental Laboratory (NAREL; Montgomery, AL) according to standard USEPA procedures.

Data analysis:

Data were analyzed using the Statistical Analysis System (SAS 1990) to determine means and standard deviations. Either probit or non-linear interpolation were used to calculate LC50 values (Snedocor and Cochran 1969). Chronic incipient mortality (i.e. predicted 7, 14, 30, 60, and 90-day responses at 0.01, 0.05, 0.10, 0.50, 1.0, and 5% mortality) was calculated using the accelerated life testing procedures of Sun et al. (1995).

RESULTS

Review of historical water quality information:

Previous water quality measurements performed by the Utah Department of Environmental Quality (UDEQ) have identified a site-specific source of contaminated ground water entering the Colorado River from beneath the tailings pile. The primary source was identified as the Moab Wash located at the northernmost area of the tailings pile. This source exceeds Water Quality Standards for at least five parameters, including total ammonia, dissolved manganese, dissolved molybdenum, and dissolved vanadium (Table 1) (UDEQ, 1996). In addition, levels of gross alpha and total uranium levels in groundwater below the Atlas site exceed those measured upstream (Table 1). These data were used to select the spatial mapping locations described below.

Spatial Mapping of Contaminants:

Field assessments of the distribution of ammonia concentrations in the Upper Colorado River adjacent to the Atlas Mill Tailings Pile were conducted over a 10-d period during August, 1998. Discharge during this period was approximately 3,000 CFS which is typical of the post snow-melt period when post-larval and juvenile Colorado pikeminnow are most likely to use shallow backwater areas such as the area adjacent to Moab Wash. For sampling locations refer to Figure 1.

Samples of ground water adjacent to the river exceeded Utah State Water Quality Standards for total ammonia by a factor of up to 500 under worst-case conditions. Groundwater

measured at the immediate confluence of Moab Wash with the Upper Colorado River contained 477 mg/L total ammonia (Figure 2). Total ammonia concentrations in shoreline groundwaters increased downstream of Moab Wash and were measured at 685 mg/L (100 m downstream) and 771 mg/L (200 m downstream), respectively (Figure 2). Note that these are undiluted groundwaters immediately adjacent to the stream.

Concentrations of total ammonia measured at nearshore areas (i.e. in the river at the bank-water interface) were measured at concentrations up to 224 mg/L at a station located 100 m downstream of Moab Wash (Table 2; Figure 3); this site was strongly influenced by groundwaters entering the river directly from soil fissures located at the tamarisk root line. Concentrations of total ammonia at the bank interface decreased at downstream locations (e.g. 200 m downstream, 35 mg/L; 300 m downstream, 19 mg/L; and 400 m downstream, 5 mg/L). Concentrations of total ammonia were also elevated at the 1-m (i.e. lateral distance from bank) locations (Figures 2 and 3). For example, concentrations of 33, 21, 14, 4, and <1 mg/L total ammonia were measured at 100, 200, 300, 400, and >500m downstream, respectively (Figure 3). Measurements taken at the 10-m lateral location exceeded 0.5 mg/L total ammonia at only one location (100 m downstream) (Figure 3). Thus, it was evident that ammonia concentrations greatly exceed State Water Quality Standards (4-d chronic level of 0.32 mg/L total ammonia assuming pH=8.5 and temperature of 25° C) during the sampling period but were confined to a zone of less than 10 m from the western shore (Atlas Side of River). Ammonia concentrations upstream of the Moab Wash were below detection limits. However, a shore pore sample was measured at 117 mg/L at a site 100 m above the Moab Wash (Figure 2) which may reflect some influence of groundwater due to lateral migration across the alluvial plain.

Total ammonia, un-ionized ammonia, metals, and radiochemicals are presented from a subset of the survey sites in Tables 3 and 4. Total ammonia concentrations in surface waters greatly exceeded the 4-day chronic Utah Water State Water Quality Criterion for total ammonia (0.32 mg/L total ammonia at pH=8.5 and T=25°C) adjacent to the Moab Wash and exceeded concentrations known to be toxic to Colorado pikeminnow (see below). Copper exceeded water quality criterion concentrations in shore pore water at two sites: Moab Wash; and the site located approximately 100 m below Moab Wash (Table 3). Manganese was measured at one surface water site near Moab Wash and at several pore water sites at levels exceeding the 40 ug/L criterion value (Table 3). Zinc exceeded the water quality criterion levels at one porewater site below the Moab Wash (Table 3). Selected radiochemicals were elevated above background levels in both surface and ground water at two sites: Moab Wash and 100 m downstream of the Moab Wash (Table 4).

Nearshore water samples indicated that total ammonia concentrations were highly correlated ($r^2=0.98$, $p\leq 0.01$) with conductivity (Table 2). Temperature and dissolved oxygen remained within levels suitable for survival of Colorado pikeminnow. The levels of pH reached 8.69 in two areas near Moab Wash, and were measured at up to pH=9 in some backwaters during late evening. An increase of pH from 8.5 to 9 (at 25 °C) would result a doubling of the percentage of un-ionized ammonia (the toxic form) under these conditions (Thurston et al. 1977).

Toxicity testing:

Ammonia was toxic to Colorado pikeminnow in well water at 18 mg/L total ammonia (72h LC50) (Table 5) or 1.17 mg/L un-ionized ammonia (72h LC50 adjusted for pH and temperature) (Table 6). The standard surrogate species the fathead minnow was twice as sensitive as pikeminnow to total ammonia (9 mg/L 72h LC50) (Table 5) and to un-ionized ammonia (0.61 mg/L; 72h LC50 corrected for temperature and pH) (Table 6). Ammonia was toxic to both species within one hour at the high concentration of 64 mg/L total ammonia and within 12 hours at 32 mg/L total ammonia. The 16 mg/L concentration resulted in 20% mortality. The data further indicated that Colorado pikeminnow were only half as sensitive to ammonia (adjusted for pH and temperature) in Colorado River water (2.21 mg/L un-ionized ammonia; 72-h LC50) compared to fish tested in CERC well water (1.17 mg/L un-ionized ammonia; 72-h LC50) (Table 6).

Accelerated life testing procedures (Sun et al. 1995) were used with the data to predict the concentration of ammonia lethal to 0.01, 0.05, 0.10, 0.5, 1, and 5% of Colorado pikeminnow at various chronic exposure intervals (Table 7) to predict a no-effect concentration of ammonia. The chronic 90-day minimal effect level for mortality (i.e. projected 0.01% population mortality) was calculated to be 2.66 mg/L and 0.17 mg/L for total and un-ionized ammonia, respectively, in Colorado River water. These concentrations are frequently exceeded in the Moab Wash area (Tables 2 and 3; Figures 2 and 3). However, note that the current water quality criterion for ammonia for Class 3B waters of Utah (e.g. 0.32 mg/L total ammonia; 0.05 mg/L un-ionized ammonia at pH 8.5 and 25°C) appear to be protective of Colorado pikeminnow (Table 3)

On-site tests with environmental samples indicated that groundwater samples from below Moab Wash resulted in toxicity within 30 minutes due to the high level of ammonia (e.g. >500 mg/L total ammonia). Dilutions of these test waters were acutely toxic at 12.5% dilution which was the lowest dilution tested (Figure 4).

No surface waters were toxic to Colorado pikeminnow in the on-site test under the conditions tested. However, surface waters from four field locations between Moab Wash and 100 yds downstream (i.e. Moab Wash Surface 1; Moab Wash Surface 2; Downstream 1-50 m; and Downstream 2-100m) contained between 1.4 and 1.7 mg/L un-ionized ammonia (Figure 4) which approaches the threshold for mortality determined in laboratory toxicity tests (2.21 mg/L 72-h LC50 in Colorado River water). Many of the fish exhibited altered, punctuated swimming behavior during the test which indeed indicates that water from these sites was approaching levels inducing acute toxicity. Other areas containing higher concentrations of ammonia were located but not until after the tests were initiated (e.g., site 100 m downstream of Moab Wash; Tables 2 and 3).

Comparisons of the standard laboratory and on-site field tests revealed that fish were sensitive at the same approximate concentrations of ammonia. These results further indicate that ammonia is the primary contaminant of concern and that other contaminants (e.g. copper, zinc, and radiochemicals) were not present at individually toxic concentrations and further did not contribute to any apparent additive or synergistic activity of the site waters.

DISCUSSION

Ammonia appears to be the major contaminant of concern in the vicinity of the Atlas site. Ammonia primarily exists in two forms: un-ionized (NH_3) and the ionized ammonium ion (NH_4). The relative distribution of the two forms is controlled by pH and temperature. It is the un-ionized form of ammonia which is most toxic (USEPA 1999).

Acute exposure of fish to un-ionized ammonia can cause loss of equilibrium, hyperexcitability, and increased respiration in fishes (WHO, 1986). Chronic exposure of fish to un-ionized ammonia has been shown to reduce egg hatching, growth, and development, and can cause pathological changes in gills, liver, and kidney (WHO, 1986). Chronic data for the effects of un-ionized ammonia on razorback suckers and Colorado pikeminnow are not available. However, Mayes et al. (1986) determined that un-ionized ammonia decreased hatching and survival of larval fathead minnows at 0.26 mg/L. Thurston et al. (1986) determined that chronic exposure to 0.91 mg/L un-ionized ammonia resulted in decreased survival, growth, and reproduction of fathead minnows, and that at 0.21 mg/L exposures, adult fatheads commonly exhibited brain lesions. Further, Le-Ruyet Person et al. (1997) determined that 28-d exposure of juvenile turbot (*Psetta maotica*) to un-ionized ammonia resulted in significantly decreased growth at concentrations as low as 0.1 mg/L due to decreased food intake. Pathological changes (e.g. gill hyperplasia; necrosis; and tissue disintegration) have been observed at un-ionized ammonia concentrations \leq 0.1 mg/L (Flis, 1963; Smith and Piper, 1974).

The results of this study indicated that Colorado Pikeminnow were sensitive to un-ionized ammonia at 1.17 mg/L (measured 72-h LC50). These data are similar to the results of Dwyer (1998) that indicated that un-ionized ammonia was toxic to juvenile razorback suckers, Colorado pikeminnow, and the standard surrogate test species the fathead minnow at concentrations as low as 1.040, 0.229, and 0.227 mg/L, respectively (7-d LC50, un-ionized ammonia) (Table 8). Calculated projections indicate that pikeminnow could be sensitive to un-ionized ammonia as low as 0.17 $\mu\text{g/L}$ (90-d LC0.01; calculated according to Sun et al. 1995). A comparison of these effects levels to measured exposure data in the immediate vicinity of the Atlas Mill Tailings Pile indicates that endangered fish populations are at risk to the effects of ammonia. However, existing water quality criteria for ammonia, if enforced, should be protective of Colorado pikeminnow.

Several dissolved inorganic constituents, including molybdenum and vanadium, have previously been measured at levels which exceed published State or National Water Quality Standards near the Moab Wash (Utah DEQ 1999; Table 1). However, concentrations of these constituents do not approach levels that have been demonstrated in the laboratory as acutely toxic to razorback suckers or Colorado pikeminnow. For example, Hamilton and Buhl (1997) studied the effects of vanadium on Colorado pikeminnow and razorback sucker and determined 96-h LC50s of 7.8 and 8.8 mg/L, respectively, indicating a margin of safety of well over 100. Molybdenum is toxic to fathead minnows at 360 mg/L (Eisler, 1989) and acute toxicities of other dissolved inorganics including uranium, boron, arsenate, and zinc generally exceed 10 mg/L (Hamilton, 1997; Hamilton and Buhl, 1997). However, data on chronic toxicity of these elements to Colorado pikeminnow and razorback suckers are not available. Although others have suggested that synergistic effects may be possible (Hamilton and Buhl 1997; Irwin et al. 1997) there was no apparent additive or synergistic activity in the on-site studies that we conducted.

Selenium concentrations in water adjacent to the Atlas Mill Tailings Pile range from 1-4 $\mu\text{g/L}$ as total selenium, which approaches the Water Quality Criterion of 5 $\mu\text{g/L}$ (USEPA 1987). Selenium is of particular concern in the western United States due to its propensity to undergo

organic transformations which lead to biomagnification in aquatic food webs (Hamilton, 1998). Concentrations of selenium above 5 ug/L have been shown to result in reproductive failure and developmental abnormalities in fish and birds (Hermanutz et al., 1992; Lemly et al., 1993). However, our data provides no indication that selenium from the Atlas Mill Tailings Pile is elevated to levels of localized concern.

Colorado pikeminnow populations now only occupy a portion of historical habitats in the Upper Colorado River Basin in Colorado, New Mexico, Utah and Wyoming (USFWS, 1996). The most important rearing area in the Colorado River for young-of-year Colorado pikeminnow is between Moab, Utah and the confluence with the Green River (USFWS, 1996). In a mark-recapture study of Colorado pikeminnow, 21 of 51 (41%) fish in this sampling reach were caught in the Moab Valley area between river miles 57 and 65 (Osmundson et al., 1997).

The Atlas Mill Tailings Pile site is located at the top of the Moab Valley at River Mile 64. The Colorado River Fisheries Project implemented an Interagency Standardized Monitoring Program in 1986 to monitor population trends of the Colorado pikeminnow and humpback chub (*Gila cypha*) in the Colorado River Basin. Low numbers of Colorado pikeminnow (between 1 and 28 fish) were consistently collected between 1986 and 1996 near the Atlas mill tailings site between river miles 68-49. Both adults and subadults were collected in Moab Wash and directly below the tailings pile. Young-of-year Colorado pikeminnow sampling between river miles 48-84 collected anywhere from 0 to 53 pikeminnow at any one site (Osmundson et al., 1997).

A potential spawning site for Colorado pikeminnow exists upstream of the Atlas site above Westwater Canyon. Larval Colorado pikeminnow are consistently found from above Moab to the confluence of the Colorado River with the Green River. This includes the Upper Colorado River section in the vicinity of the Atlas Mill Tailings Pile. The geomorphological and hydrological characteristics of the Upper Colorado River significantly change in the Moab Valley and produce shallow, low velocity nursery habitat for larval and young-of-year Colorado pikeminnow and significant numbers have been observed in this section of the river (UDWR, 1998). Further, the standardized monitoring data has shown that the average size of larval and young-of-year Colorado pikeminnow collected below the Atlas site is smaller than larval and young-of-year fish collected in the Green River system; however, at this time these differences cannot be attributed to the influence of ammonia from the Atlas Mill Tailings Pile (USFWS 1998).

SUMMARY AND RECOMMENDATIONS

Acute toxicity testing indicated that Colorado pikeminnow were sensitive to un-ionized ammonia at concentrations of 1.17 mg/L (72h LC50). Accelerated life testing procedures indicated that Colorado pikeminnow could be sensitive to 90-d chronic exposures as low as 0.17 mg/L un-ionized ammonia. However, the current Utah Water Quality Criteria for ammonia (e.g. 0.05 mg/L unionized ammonia at pH=8.5 and temperature of 25°C) appear to be protective of Colorado pikeminnow populations based on the limited data in existence. However, ammonia criteria concentrations and ammonia concentrations causing mortality of Colorado pikeminnow are exceeded for a distance of over 300 m in nearshore surface and porewaters. Levels of other constituents, including copper, manganese, and zinc are elevated in some areas but do not appear

to approach levels of concern.

Additional studies are needed. An Off-refuge Proposal, based on the results of this Quick Response Study, was submitted to the U.S. Fish and Wildlife Service and was successfully funded to continue studies for an additional 2 years. Ammonia levels in interstitial pore waters are suspected of being higher than surface waters. Studies planned for 1999 and 2000 are examining the significance of interstitial ammonia exposures (e.g., Ankley et al. 1990) due to the intimate contact of Colorado pikeminnow with the substrate following larval drift and deposition. In addition, chronic effects of ammonia on growth, mortality, and behavior of Colorado pikeminnow are being determined to refine the risk assessment and determine concentrations of ammonia that are protective at the individual level of population organization. The collective results of these studies will be used by the U.S. Fish and Wildlife Service in assisting the NRC and other Federal and State agencies in developing effective remedial action plans for the Site which will protect remaining populations of endangered fishes in the Upper Colorado River.

ACKNOWLEDGEMENTS

We wish to thank Richard Graham, U.S. Environmental Protection Agency, Denver, CO and Michael Clark, U.S. Environmental Protection Agency, Montgomery, AL, for their analysis of radiochemical and metals data. We also thank Dan Carnegie, Nathan Darnall, David Hughes, Patty Kohn, Curt Gately, Steve Olson, Linda Sappington, and Rex Sohn for field and laboratory assistance on this project. This project was funded in part by the USGS BRD 1998 Quick Response Program.

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Table 1. Metals and radiation measurements taken in the vicinity of the Moab Tailings Pile by the Utah Department of Environmental Quality on April 11, 1996¹ (UDEQ 1996).

Site	Total Ammonia (mg/L)	Un-ionized Ammonia (ug/L)	Molybdenum (ug/L)	Manganese (ug/L)	Vanadium (ug/L)	Gross Alpha (pCi/L)	Total Uranium (pCi/L)
CR ² Hwy 191	0.132	0.01	8	8	<40	12	3
Atlas Seep	219.00	5.85	1550	3470	96	720	825
CR 0.0 mi BS ³	3.57	0.09	10	14	<40	50	5
CR 0.25 mi BS	0.00	0.00	7	<5	<40	20	5
CR 0.5 mi BS	0.14	0.01	7	9	<40	19	3
CR 1.0 mi. BS	0.13	0.01	3	50	<40	19	5
Criteria value⁴	1.29	0.02	40	40	60	15	20

¹Data from Nov. 8, 1996 letter from Utah Department of Environmental Quality to Mr. Myron Fliegel, Uranium Recovery Branch, NRC, Washington, D.C.

²CR refers to within Colorado River.

³BS refers to distance below entry of seep into river.

⁴Criteria from various sources obtained from Utah Department of Environmental Quality (1999). Ammonia criteria for 4-day average concentration based on pH of 8.0 and temperature of 15 degrees C for Class 3B river. Criteria do not exist for fish and wildlife for all constituents; thus, sources and resource categories may vary. Data are for comparison purposes only.

Table 2. Water quality of nearshore samples (at shallow bank/water interface) at various locations during 1998 Quick Response Study. Refer to Figure 1 for station locations.

Site	Lateral Location (m from shore)	Total NH ₃ (mg/L)	Un-ionized NH ₃ (mg/L) ¹	pH	Temp (°C)	Conductivity (umhos)	Dissolved Oxygen (mg/L)
Island	nearshore	0	0	8.54	24.2	1057	6.74
East side 1	nearshore	0	0	8.47	26.6	1097	8.2
East side 2	nearshore	0	0	8.38	23.8	1067	7.41
Upstream 100 m	nearshore	0	0	8.58	25.0	1190	8.7
Upstream 200 m	nearshore	0	0	8.69	25.5	1200	8.3
Moab Wash	nearshore	21	4.7	8.69	25.5	1200	8.3
Downstream 100m	nearshore	224	18.9	8.03	31	7100	4.8
Downstream 200m	nearshore	35	2.84	8.12	28	2150	9.8
Downstream 300m	nearshore	19	1.75	8.22	26	1700	8.5
Downstream 400m	nearshore	5	0.58	8.38	24.5	1288	8.3
Downstream 500m	nearshore	1	0.15	8.51	24.3	1230	7.04
Downstream 700m	nearshore	1	0.13	8.47	23.9	1101	7.81
Downstream 800m	nearshore	0	0	8.48	23.59	1103	7.23
Downstream 900m	nearshore	0	0	8.35	24.5	1100	7.19
Downstream 1000m	nearshore	0	0	8.49	24.4	1009	7.6

¹Calculated based on pH and temperature (Thurston et al. 1974).

Table 3. Ammonia and metals measurements taken in the vicinity of the Atlas Mill Tailings Pile during the August 1998 Quick Response Study. Criteria are 4-day averages for wildlife in Class 3B waters.

Site	Total Ammonia (mg/L)	Un-ionized Ammonia (mg/L)	Manganese (ug/L)	Copper (ug/L)	Zinc (ug/L)
Surface Waters					
CERC well water reference	0.3	0.05	15	2	8
Colorado River Hwy 191 reference	0.2	0.03	22	4	8
Courthouse Wash reference	0.4	0.01	28	5	5
Center Island reference	0.0	0	1	3	40
East side river reference site 1	0.0	0	6	6	4
East side river reference site 2	0.0	0	7	4	3
Moab Wash site 1	21	2.9	53	6	8
Moab Wash site 2	224	42	24	5	25
Pore Waters					
Courthouse Wash pore	0.5	0.06	145	8	48
Center Island pore reference	0.0	0	38	4	18
East side river reference pore 1	0.0	0	6	4	18
East side river reference pore 2	0.0	0	8	5	8
Moab Wash pore	477	19.43	28	77	12
Moab Wash pore 100 m downstream	685	58.20	42	286	71
Criteria value ¹	0.32 ²	0.05	40	12	110

¹Criteria from Utah Department of Environmental Quality (1999) for Class 3B river and personal communications with Loren Morton (Utah DEQ). Criteria do not exist for fish and wildlife for all constituents; sources and resource categories may vary. Data are for comparison purposes only.

²4-d chronic average ammonia criteria based on pH of 8.5 and temperature of 25 degrees C for Class 3B river.

Table 4. Radiochemical measurements taken in the vicinity of the Atlas Mill Tailings Pile during the August 1998 Quick Response Study.

Site	Gross Alpha	Gross Beta	U234	U235	U238	Th227	Th238	Th230	Th232
Surface Waters									
Col. Riv. Hwy 191 reference	7	0	2.64	0.1	1.44	0	0	0	0
Courthouse Wash reference	0	40	3.21	0.1	0.2	0	0	0	0
Center Island reference	0	15	0.6	0	0.3	0	0	0	0
East side river reference site 1	0	18	3.2	0.2	1.9	0	0	0	0
East side river reference site 2	5.6	0	3.4	0.1	2.0	0	0	0	0
Moab Wash site 1	54	12	0.3	1.8	0.3	0	0	0	0
Moab Wash site 2	21	0	0.2	1.0	0.2	0	0	0	0
Pore Waters									
Courthouse Wash pore	7	0	1.0	0	0.6	0	0	0	0
Center Island pore reference	8	0	1.0	0	0.7	0	0	0	0
East side river reference pore 1	0	8	4.1	0.1	2.9	0	0.1	0.2	0.1
East side river reference pore 2	0	28	7.7	0.4	6.7	0	0.1	4.5	0.1
Moab Wash pore	905	601	0	0.3	0	0.1	0	0.3	0.1
Moab Wash pore 100 m downstream	170	116	0.1	0.5	0.1	0	0	0.1	0
Criteria value ¹	15	50	NA ²	NA	NA	NA	NA	NA	NA

¹Criteria from Utah Department of Environmental Quality (1999).

²Not available at time of report; pending from Utah Department of Environmental Quality.

Table 5. Sensitivity of Colorado pikeminnow and fathead minnows to total ammonia (mg/L) at various time intervals of exposure.

Species	water type	LC50 (95% C.I.)			
		9h	24h	48h	72h
Colorado pikeminnow ¹	ECRC well	23 (14-37)	21 (15-31)	19 (14-28)	18 (10-31)
fathead minnow ¹	ECRC well	24 (18-32)	19 (16-24)	13 (11-16)	9 (7-12)
Colorado pikeminnow ²	Colorado River	40 (32-64)	35 (32-64)	33 (32-64)	33 (32-64)

¹LC50 determined using Probit Analysis.

²LC50 determined using non-linear interpolation.

Table 6. Sensitivity of Colorado pikeminnow and fathead minnows to un-ionized ammonia (mg/L) at various time intervals of exposure.

Species	water type	LC50 (95% C.I.)			
		9h	24h	48h	72h
Colorado pikeminnow ¹	ECRC well	1.54 (0.96-2.50)	1.43 (1.01-2.09)	1.30 (0.92-1.88)	1.17 (0.69-2.07)
fathead minnow ¹	ECRC well	1.62 (1.23-2.17)	1.29 (1.05-1.60)	0.89 (0.73-1.08)	0.61 (0.45-0.84)
Colorado pikeminnow ²	Colorado River	2.65 (2.14-4.27)	2.33 (2.14-4.28)	2.21 (2.14-4.28)	2.21 (2.14-4.28)

¹LC50 determined using Probit Analysis.

²LC50 determined using non-linear interpolation.

Table 7. Chronic mortality of Colorado pikeminnow at various rates calculated using the method of Sun et al. (1995). Data are based on the results of 7-d static renewal studies using 90-d old fish.

Time and Mortality	Total Ammonia			Un-ionized Ammonia		
	LC50 (mg/L)	Lower Limit (mg/L)	Upper Limit (mg/L)	LC50 (mg/L)	Lower Limit (mg/L)	Upper Limit (mg/L)
7 DAYS						
5%	15.38	10.98	19.76	1.02	0.73	1.32
1%	10.93	6.88	14.98	0.730751085	0.46	1
0.50%	9.44	5.6	13.21	0.63	0.37	0.88
0.10%	6.74	3.43	10.06	0.45	0.22	0.67
0.05%	5.83	2.75	8.91	0.38	0.13	0.59
0.01%	4.163	1.69	6.77	0.27	0.1	0.44
14 DAYS						
5%	13.62	9.34	17.91	0.91	0.62	1.19
1%	9.68	5.81	13.52	0.64	0.38	0.9
0.50%	8.36	4.77	12.01	0.55	0.31	0.8
0.10%	5.972	2.86	9.08	0.39	0.19	0.6
0.05%	5.165	2.29	8.04	0.34	0.15	0.53
0.01%	3.687	1.32	6.05	0.24	0.08	0.4
30 DAYS						
5%	11.918	7.78	16.09	0.79	0.52	1.07
1%	8.472	4.85	12.18	0.56	0.32	0.81
0.50%	7.323	3.94	10.72	0.48	0.26	0.71
0.10%	5.226	2.32	8.19	0.34	0.15	0.54
0.05%	4.52	1.86	7.19	0.3	0.12	0.47
0.01%	3.226	1.02	5.4	0.21	0.07	0.36
60 DAYS						
5%	10.556	6.61	14.51	0.7	0.44	0.97
1%	7.503	4.06	10.95	0.5	0.27	0.73
0.50%	6.486	3.27	9.702	0.43	0.21	0.64
0.10%	4.628	1.94	7.36	0.3	0.12	0.48
0.05%	4.003	1.51	6.44	0.26	0.1	0.43
0.01%	2.857	0.89	4.86	0.19	0.05	0.32
90 DAYS						
5%	9.832	5.92	13.62	0.65	0.39	0.91
1%	6.989	3.69	10.38	0.46	0.24	0.68
0.50%	6.041	2.93	9.14	0.4	0.19	0.61
0.10%	4.311	1.74	6.88	0.28	0.11	0.46
0.05%	3.728	1.33	6.04	0.24	0.09	0.4
0.01%	2.662	0.76	4.57	0.17	0.04	0.3
Criteria	0.8 ¹					

¹Criteria and un-ionized ammonia calculations based on pH of 8.1 and temperature of 25C.

Table 8. Sensitivity of razorback sucker, Colorado pikeminnow, and fathead minnow to total and un-ionized ammonia determined by Dwyer (1998).

Species	7-d LC50 Total Ammonia (mg/L) ¹	7-d LC50 Un-ionized Ammonia (mg/L) ²
Razorback sucker	12.3 - >17	1.04
Colorado pikeminnow	4.44 - 22.6	0.229
Fathead minnow	7.34 - >17	0.277

¹ Range of 2 or more tests.

² Calculated from lowest total ammonia value measured.

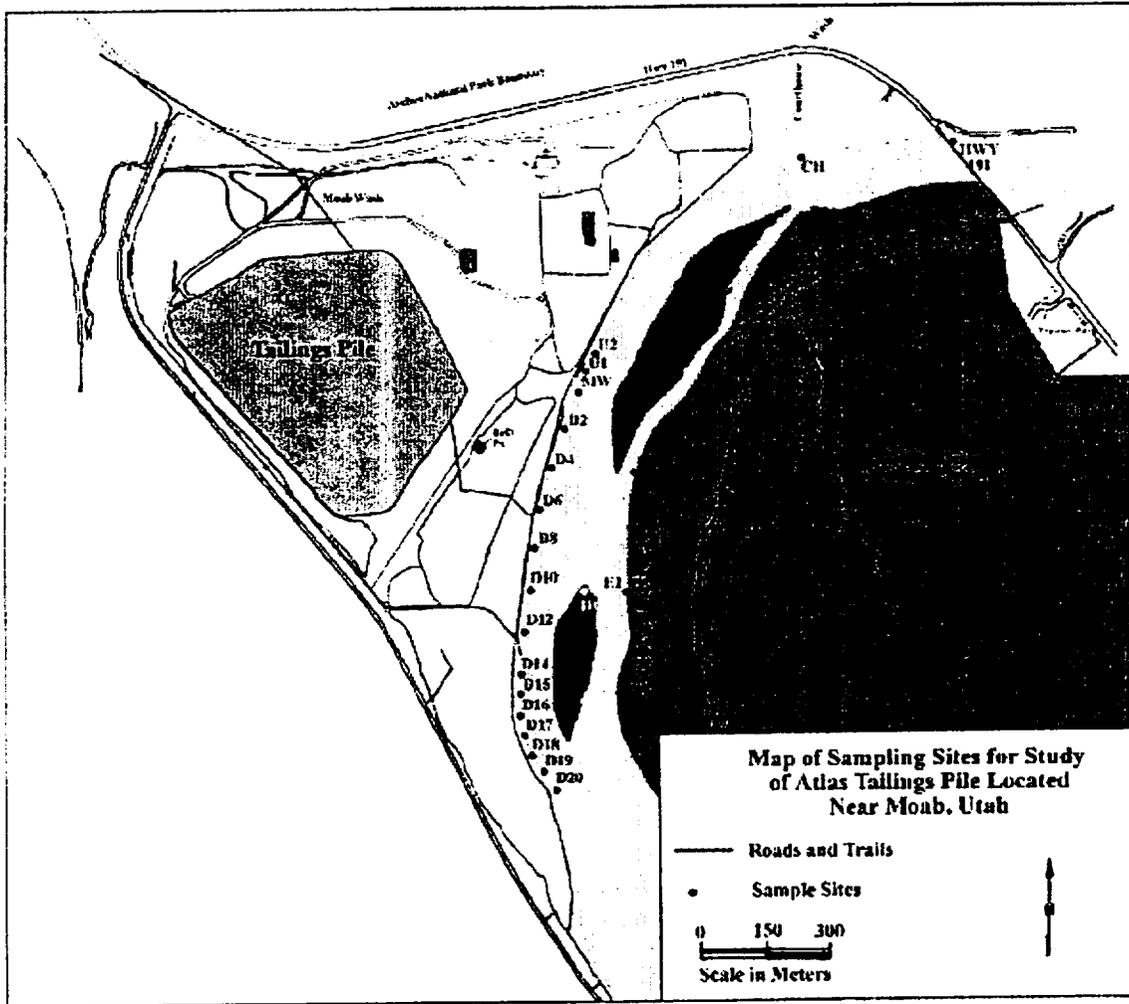


Figure 1. Map of sampling locations for 1998 Quick Response Study. Note that each sample location represents a 50-m increment upstream (U), downstream (D) of Moab Wash (MW). For example, D2 is located 100 m downstream of Moab Wash. Upstream (U) and east side of river (E) considered reference stations.

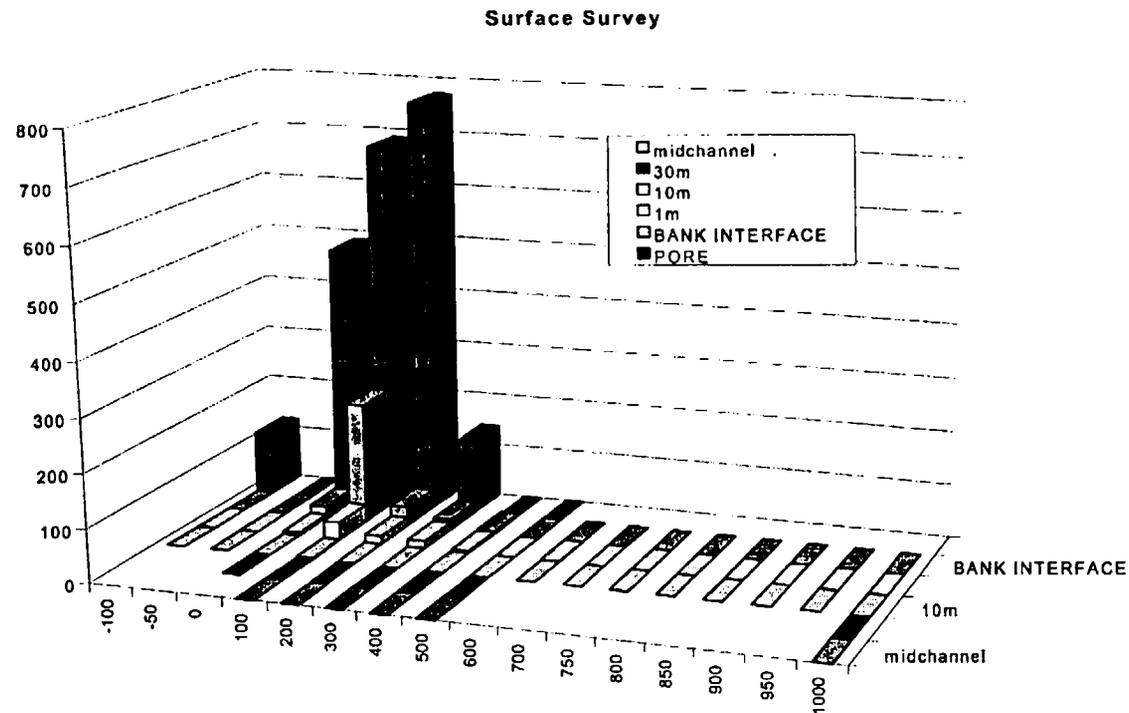


Figure 2. Spatial locations of total ammonia concentrations (mg/L) during 1998. Numbers on Y axis are ammonia concentrations. Numbers along X axis are meters upstream or downstream of Moab Wash. Numbers on Z axis are meters from the bank interface. Pore water samples were taken from pit on bank located approximately 0.5 m from edge of river.

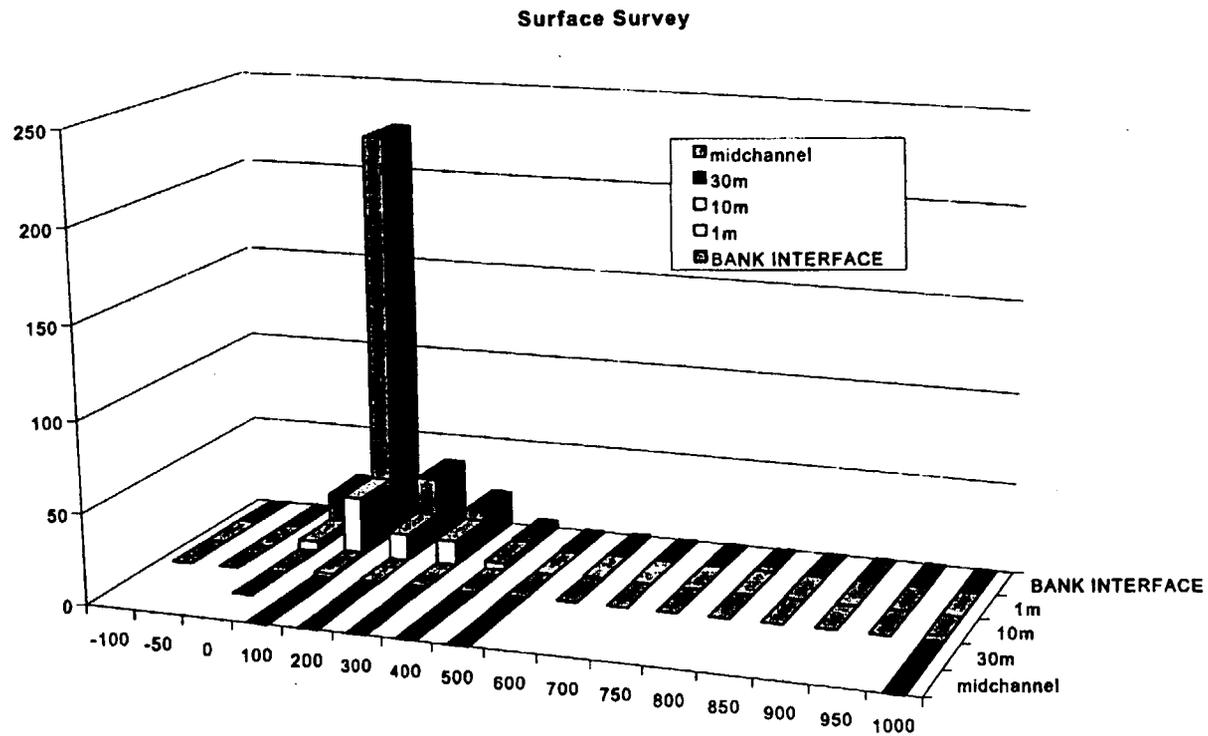


Figure 3. Spatial locations of total ammonia concentrations (mg/L) during 1998. Numbers on Y axis are ammonia concentrations. Numbers along X axis are meters upstream or downstream of Moab Wash. Numbers on Z axis are meters from the bank interface. Note that pore water samples are omitted from this graph.

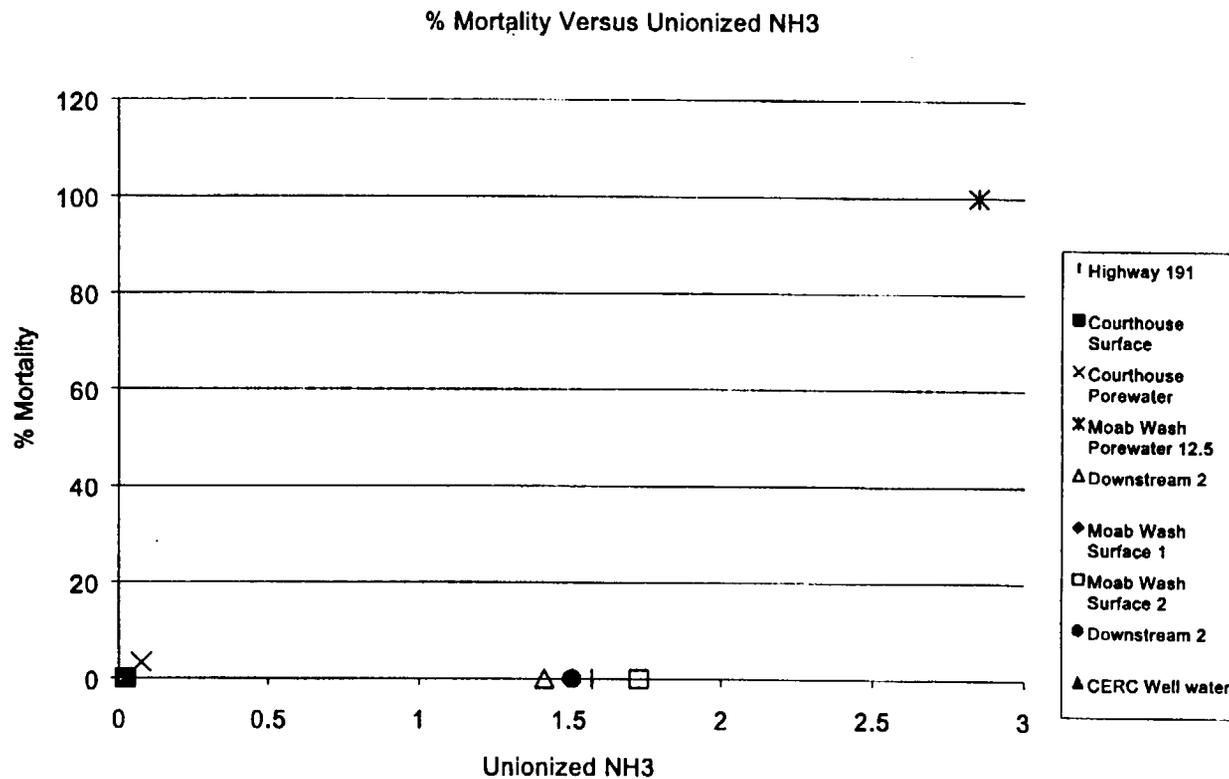


Figure 4. Response of Colorado pikeminnow over 7 day chronic exposure of field-collected water in 1998. The data indicates that un-ionized ammonia entering the river as ground water was toxic to Colorado pikeminnow and that surface waters from 4 locations were approaching the laboratory-measured 72h LC50 (2.21 mg/L un-ionized ammonia) of ammonia in Upper Colorado River water.

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ATLAS CORPORATION

Republic Plaza, 370 Seventeenth Street, Suite 3000
Denver, CO 80202
Telephone: (303) 629-2440 Fax: (303) 629-2445

RICHARD E. BLUBAUGH
Executive Vice President

January 12, 1999

VIA FACSIMILE: (301) 415-1757

The Honorable Dr. Shirley Jackson
Chairman
U.S. Nuclear Regulatory Commission
Two White Flint North
Rockville, Maryland 20852-2738

Re: Source Material License SUA-917, Docket 40-3453

Dear Madam Chairman:

We have been informed by NRC staff that, on your instructions, the technical evaluation report (TER) will be amended to be consistent in every respect with the final EIS, and then the revisions to the TER are to be made subject to public comment. The impact to the schedule is approximately one month. Being unable to elicit a clear understanding as to the reason and timing for this decision from the staff, we hereby request an explanation from your office. This unprecedented action is a surprise to us. Amending or supplementing the final TER has not been discussed with us before today.

We are well advised that not only is this procedure unprecedented, it is unnecessary. Even if it is determined that changes to the TER are necessary, it is not necessary to solicit public comment when the changes contemplated are minor administrative changes, are not substantive and do not change the substance of the TER; which we understand to be the case here. While Atlas Corporation's management appreciates that the final EIS is essentially complete, we must object to your decision to again delay the final licensing action. While you, no doubt, are aware of the history behind this licensing action, it must be emphasized that Atlas has been given assurance after assurance by NRC that this licensing process was going to be completed in so many months or weeks until finally we now are talking about years, more than ten years from the initial licensing action and nearly five years from the commencement of this EIS. It would seem that this is long enough for public scrutiny on this licensing action.

We were informed of yet another delay with the issuance of the final EIS, which we had been told we could expect January 13, 1998. Apparently a "glitch" will result in a delay of a few more days while the corrections are made by NRC's consultant. We do try to be patient.

On October 1, 1998, Atlas, its counsel and the independent contractors met with NRC staff to discuss plans for fulfilling our obligation even though the company had just filed for relief under Chapter 11 of the Bankruptcy Code. Shortly after that meeting we were told that it

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REC'D BY C. J. ORR
65 JAN 13 1999

The Honorable Dr. Shirley Jackson
Atlas' TER
January 12, 1999

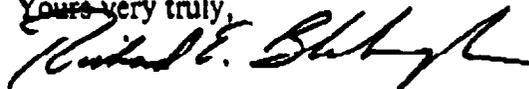
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looked reasonably probable that the final EIS would be available in December. Nothing was said about amending the TER. After your visit to the Site in December, we learned that the final EIS would be delayed a few weeks. Nothing was said about amending the TER. Even if amending the TER is required, distributing minor administrative changes for public comment is not. The effort, cost and time involved is not necessary. The licensee will be significantly harmed if this process results in yet more delay. In fact, the objectives of reclaiming the site and cleaning up groundwater contamination could be in serious jeopardy if this procedure is followed. However, the plaintiffs in *Grand Canyon Trust, et al v. Secretary of Interior, FWS and NRC* will be pleased as they will have prevailed in obtaining the delay (stay) without intervention from the Court.

Atlas Corporation strongly objects to the unnecessary action of amending the TER and reissuing it for public comment. We respectfully request that the NRC reconsider this decision. Of the options available to NRC, Atlas suggests that, 1) NRC not amend the TER, rather address any changes necessary in the actual license amendment; or, 2) NRC amend the TER, note therein that the changes made were not substantive, and not seek public comment. Alternatively, NRC could shorten the review period to fifteen days on the basis that only the changes need to be reviewed, not the whole document.

Atlas requests that it receive your response to this petition - to reconsider this procedural decision - at the earliest opportunity. This matter will affect management's decisions pertaining to the reorganization plan and the bankruptcy. Your attention to this request is appreciated.

Yours very truly,



Richard E. Blubaugh

cc: The Honorable Senator Robert Bennett
The Honorable Senator Orrin Hatch
The Honorable Representative Chris Cannon
The Honorable Commissioner Jeffrey S. Merrifield
The Honorable Commissioner Greta J. Dicus
The Honorable Commissioner Nils J. Diaz
The Honorable Commissioner Edward McGaffigan, Jr.
Joseph Holonich
Gregg B. Shafter
Tony Thompson, Esq.
Harvey Sender, Esq.
Grant Ohland
Dale Edwards

2/12/99 MS //

UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF COLORADO

IN RE:)	
)	
ATLAS CORPORATION,	)	Case No. 98-23331 DEC
a Delaware corporation	)	Chapter 11
EI#: 15-5503312)	
)	
ATLAS GOLD MINING INC., a Nevada Corp.	)	Case No. 99-10889 CEM
EI#:84-1023843	)	Chapter 11
)	
ATLAS PRECIOUS METALS INC., a Nevada	)	Case No. 99-10890 SBB
Corp., EI#: 87-0400332	)	Chapter 11
)	
Debtors.	)	(Jointly Administered Under
	)	Case No. 98-23331 DEC)

ATLAS CORPORATION'S OBJECTION TO
UTAH'S CLAIM FOR ADMINISTRATIVE EXPENSE

The Debtor in Possession, Atlas Corporation, by and through its counsel, Sender & Wasserman, P.C. and Shaw Pittman Potts & Trowbridge, and for its Objection to Utah's Claim for Administrative Expense, hereby states as follows:

I. FACTS

Utah's large administrative expense claim arises out of the battle over the final disposal and containment of a uranium tailings pile at a former uranium processing mill owned by Atlas in Moab, Utah. While Atlas has not processed any uranium at the site since 1984, it has been diligently working with the Nuclear Regulatory Commission (the "NRC") and other government agencies since the 1970's to reclaim the site in accordance with relevant NRC regulations. Unfortunately, despite Atlas' best efforts, the process of reclamation at the site has been thwarted since the early 1990's as Atlas and the NRC have attempted to deal with the concerns of Utah, the United States National Parks Service, the United States Department of the Interior, the Environmental Protection Agency

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("EPA"), the United States Fish and Wildlife Service, environmentalists, and residents. Atlas has never delayed this process and has at every juncture provided all interested parties with its plans, studies, and related correspondence to clean up the site in accordance with applicable NRC regulations.

In the late 1940's, a uranium boom occurred on the Colorado Plateau in the Four Corners area where Colorado, Utah, New Mexico, and Arizona meet, including in Moab. By 1956, over 600 producers were shipping ore from the Four Corners. To meet this demand, the Uranium Reduction Company constructed the Moab Uranium Mill (the "Mill") in 1956 under license and direction from the Atomic Energy Commission ("AEC"). Atlas Corporation purchased the Mill in 1962 and formed Atlas Minerals Division to operate the site. Atlas placed the Mill's uranium tailings pile at its current location pursuant to AEC direction. Between 1956 and 1970, the Mill processed over 5.9 million tons of uranium ore for the AEC and, at its peak, processed 1.8 million tons per year. The Mill produced uranium and vanadium concentrates until Atlas placed it on standby in March 1984 due to a depressed uranium market. Atlas closed the Mill, located 2.5 miles northwest of Moab, in 1988.

Atlas is currently awaiting approval of its modified reclamation plan for the Mill by the NRC, the successor agency to the AEC. It is this reclamation plan, as modified over the past 18 years, that is related to the administrative expense claim of the State of Utah. Every reclamation plan that Atlas has submitted has had three objectives: (1) decommissioning the Mill, (2) reclamation of the tailings impoundment and surrounding area, and (3) groundwater corrective action. Atlas has already completed the decommissioning phase, with the exception of the old administrative building, has

placed an interim earth cover approximately two feet thick on top of the tailings pile, and has been implementing a groundwater corrective action since 1990.

The two areas of the greatest public concern over the years have dealt with objectives 2 and 3: tailings impoundment and groundwater corrective action. During its operation, the Mill contained a tailings pile, then filled with water, but since dried to a large extent. One of the byproducts of uranium ore processing is the production of mill tailings (“tailings”). Tailings are the waste from uranium processing, have no uses, and contain trace amounts of radiological and non-radiological materials. During the Mill’s operation, tailings were disposed in the tailings pile. It should be remembered that the tailings contain nothing approaching the radiation contained in, for example, spent fuel rods from nuclear power plants. Rather, the tailings contain only trace elements of the naturally-occurring uranium chain, uranium decay products, and other elements and compounds from the milling process found in uranium ore mined near Moab.

In 1976, the NRC, the federal agency that regulates active uranium mills, ruled that all licensed operating uranium mills, including the Mill, would be reviewed under the National Environmental Policy Act (NEPA) of 1969. The review included a Full Environmental Statement (the “1979 FES”), which the NRC completed in January 1979. (See 1979 FES, relevant portions attached hereto as Exhibit A). The 1979 FES included information not only on radiological materials that might affect the environment, but also non-radiological materials that resulted from the processing of uranium ore and the effect of such byproduct materials on groundwater at or near the Mill. The 1979 FES concluded that only a minor deterioration of groundwater and river water could be expected due to liquid seepage from the pile. (*Id.* at 7-1). The 1979 FES also stated that seepage into groundwater was expected to be lower in the future because less water was needed to

transport tailings to the pile. (Id. at 3-10). The NRC gave various Utah agencies a draft copy of the Environmental Impact Statement in 1978, but Utah made no comments regarding the NRC's findings on groundwater contamination. (Id. at A-43). As a condition of Atlas' license, The NRC also required Atlas to monitor groundwater contamination near the pile. (Id. at 4-4).

In 1978, Congress enacted the Uranium Mill Tailings Radiation Control Act of 1978 ("UMTRCA"), 42 U.S.C. §§ 2014, 2021-22, 2092, 2111, et seq., and 7901 et seq., which granted The NRC exclusive regulatory control of active uranium mill tailings sites in order to enforce decontamination, decommissioning, and reclamation standards for such piles at such sites. Pursuant to UMTRCA, Atlas began the reclamation process in the early 1980's, before the Mill closed, and submitted a reclamation plan in 1981 which would place a permanent cap on the tailings pile. The NRC approved the plan in 1982. After the Mill closed in 1988, Atlas began preparations to reclaim the pile and permanently dispose of the tailings.

Since approval of the initial plan in 1982, federal reclamation requirements have changed and Atlas has submitted two modifications to the plan, one in 1988 and another in 1992. Atlas began building an interim cover over the pile in 1989 and completed it in 1995. By that time, the sands in the pile had largely drained, except for the seasonal precipitation that collects during the winter months. In July 1993, after reviewing Atlas' 1992 modifications, the NRC published a finding of no significant impact ("FONSI") in the Federal Register in anticipation of approving the revised plan and indicating the NRC's intent to modify Atlas' license at the Mill and allow Atlas to proceed with reclamation. (Final Technical Evaluation Report for the Proposed Revised Reclamation Plan for Atlas Corporation Moab Mill, U.S. Nuclear Regulatory Agency, March 1997, relevant portions attached hereto as Exhibit B, at 1-4 (hereinafter "Final TER")). At this point, the reclamation

process ground to a halt as various parties and agencies that had never objected to proposed reclamation plans in 1981 and 1988 or to the 1979 FES suddenly began complaining that the 1992 plan was unacceptable. Some parties wanted to remove the entire tailings pile, while others had concerns about groundwater contamination and radiation.

The NRC rescinded the FONSI in October 1993 after it received various objections from the public and other agencies and decided to prepare a second Environmental Impact Statement (the "second EIS") in 1994. (*Id.* at 1-4, 1-5). The NRC released a draft of the second EIS in January 1996 and received various comments from interested persons and agencies. (*Id.*; *see* Draft Environmental Impact Statement Related to Reclamation of the Uranium Mill Tailings at the Atlas site, Moab, Utah, U.S. Nuclear Regulatory Agency, January 1996, relevant portions attached hereto as Exhibit C). A final draft of the second EIS has been expected at various times, as indicated by the NRC, throughout 1997, 1998, and 1999. In 1994, the NRC stated publicly that the second EIS would be placed on a fast track and would be completed within one year. It is now five years, and no second EIS has been published.

In January 1996, the NRC also released a draft Technical Evaluation Report ("TER"), which is the NRC's independent evaluation of the revised reclamation plan's technical elements vis-a-vis compliance with its regulatory criteria and guidelines. In the draft TER, the NRC listed issues that needed to be resolved before it would give final approval. Atlas and the NRC resolved those issues, and the NRC issued a final TER in March 1997 in which it finally approved the Atlas reclamation plan. (*See* Final TER, Exhibit B).

As part of its license for the site, Atlas operates a groundwater compliance monitoring and corrective action program. The program includes the establishment of groundwater quality

standards, point-of-compliance wells, sampling frequency and points, the analysis of groundwater for certain materials, and consolidation. The NRC expects Atlas to file an expedited groundwater corrective action program after issuance of a final EIS and the on-site reclamation plan is approved.

The current reclamation plan proposed for the tailings pile impoundment and surrounding areas is designed to mitigate all foreseeable potential hazards and to provide a safe reclamation through passive controls for the next 1000 years. All contaminated materials and soils will be placed in the tailings impoundment, which is a 130-acre area contained in a nearly circular embankment. The site will be dewatered, re-contoured, capped with both a sandy soil layer and clay, and then covered by rock armoring. This plan will control radon and airborne particulate emissions and provide the required long-term stability.

Atlas anticipates that the proposed reclamation can be completed within four years of final approval. Once the reclamation is deemed complete by the NRC, Atlas' license will be terminated, the site will become the property of the federal or state government, pursuant to UMTRCA, and the taker (presumably the United States Department of Energy ("DOE")) will be responsible for maintaining and monitoring the site. Current plans also call for over 200 acres being returned to habitat suitable for local wildlife.

The Utah Department of Environmental Quality ("DEQ") first met with Atlas officials in 1993, but took no official action. Then, in September 1996, 17 years after it had a chance to comment on the 1979 FES, and six years after promulgation of its groundwater regulatory program, DEQ directed Atlas to comply with Utah water quality regulations and to submit a report on groundwater at the Mill and a plan to clean up any contaminants. (See letter dated September 12,

1996, from Utah to Atlas Corporation, relevant portions attached hereto as Exhibit D). In January 1997, the DEQ asked Atlas to resolve all concerns about the cleanup plan that it had submitted.

On October 26, 1998, Utah filed its proof of claim for an unspecified amount of money. (See Utah's Proof of Claim, attached hereto as Exhibit E). Its claim is premised upon claims for groundwater contamination and the need for corrective action. On January 14, 1999, it filed a Supplemental Claim seeking \$77 million for recovery and cleanup costs of groundwater contamination allegedly caused by non-radiological byproducts leaching from the tailings pond. (See State of Utah's Supplement to Its Proof of Claim, attached hereto as Exhibit F). There is no assurance that Utah will use the proceeds from such a claim to remediate the site. See Utah Code Ann. § 19-5-115(11). In addition, the Utah legislature is currently considering legislation in which Utah would remove the tailings pile to another location.

II. UTAH'S CLAIM IS PREEMPTED BY FEDERAL LAW

The basis for the Utah's \$77 million claim is set forth in its January 14, 1999 *State of Utah's Supplement to Its Proof of Claim*:

The \$77 million obligation was arrived at by evaluating the cost of constructing, operating, and maintaining a passive reactive groundwater treatment system extending across the width of the uranium plume to accommodate local groundwater hydrologic conditions; computing and monitoring closure costs; and defining the cost to remove and dispose of the reactive wall materials after 100 years of operation in order to avoid Colorado River erosion and subsequent pollution.

Thus, Utah's claim is based entirely on the recovery of clean-up costs associated with the remediation of groundwater contamination allegedly caused by non-radiological constituents derived from the Atlas tailings pile. Utah, however, ignores the fact that application of the Utah Water

Quality Act,¹ pursuant to which the Utah's cleanup would occur, to a facility licensed by the NRC, such as the Atlas tailings pile, is pre-empted by federal law, and that assertion of State jurisdiction could result in the United States Department of Energy ("DOE") not taking title and custody of the site for long term care and surveillance, as envisioned by the Atomic Energy Act of 1954 ("AEA"), as amended by UMTRCA.

Although not explicitly stated in its Proof of Claim, Utah seeks to recover costs associated with the remediation of non-radioactive discharges into groundwater at and around the Atlas mill tailings pile. The claim does not appear to include monies to cover the remediation of radioactive discharges.² Utah likely relies on section 274(k) of the AEA, 42 U.S.C. § 2021(k), and cases

¹ The general statutory authority for Utah to regulate discharges to groundwater is the Utah Water Quality Act, which provides that:

it is unlawful for any person to discharge a pollutant into waters of the state or to cause pollution which constitutes a menace to public health and welfare, or is harmful to wildlife, fish or aquatic life, or impairs domestic, agricultural, industrial, recreational, or other beneficial uses of water, or to place or cause to be placed any wastes in a location where there is probable cause to believe it will cause pollution,

unless authorized under the Act or regulations. Utah Code Ann. § 19-5-107(1). "Waters of the State"

means all streams, lakes, ponds...and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion of the state; and

does not include bodies of water confined to and retained within the limits of private property, and which do not develop into or constitute a nuisance, a public health hazard, or a menace to fish or wildlife.

Utah Code Ann. § 19-5-102(18).

² We assume this is the case because in other proceedings the State has conceded that it lacks jurisdiction to regulate radiological constituents of 11e.(2) byproduct material. See fn. 3, *infra*. To the extent Utah in its response argues that it has jurisdiction to regulate radiological materials, Atlas will file a supplement at that time.

construing that section, for its assertion of jurisdiction over non-radiological constituents of 11e.(2) materials,³ as defined in 42 U.S.C. § 2014(e) (section defines section 11e.(2) materials). Section 274(k) provides:

Nothing in this section shall be construed to affect the authority of any state or local agency to regulate activities for purposes other than protection against radiation hazards.

42 U.S.C. § 2021(k). Several cases have construed this section in the context of federal versus state authority over 11e.(2) material, but none has addressed the issue of whether a state may assert jurisdiction over non-radioactive discharges to groundwater specifically. Moreover, the line of cases that the State appears to have relied upon in the past to support its assertion of jurisdiction is equivocal on the issue of preemption.⁴ Indeed, more recent case law suggests that a fundamental

³ Here again, we assume this is the case as the State has claimed in the past that:

Because the State has not received delegation of authority for 11e.(2) Waste from the NRC, Utah has no direct authority over the radioactive contaminants in 11e.(2) Waste materials. However, federal court decisions have allowed the states to regulate the non-radiologic portion of 11e.(2) materials, so long as such regulation does not frustrate the underlying purpose of the federal legislation.

(Citation to be supplied in a supplement to this Objection).

Similarly, the State has asserted in the Private Fuel Storage licensing matter that the NRC's authority under the AEA does not preempt state regulation of groundwater, citing to 42 U.S.C. § 2021(k), Kerr-McGee Chem. Corp. v City of West Chicago, 914 F.2d 820 (7th Cir, 1990), and Pacific Gas & Elec. v. Energy Resources Comm'n, 461 U.S. 190 (1983) (state nuclear plant moratorium law not preempted by the AEA because states retain their authority to regulate the economic aspects of electric generation). See In the Matter of Private Fuel Storage, LLC, NRC Docket No. 72-22-ISFSI, "State of Utah's Contentions on the Construction and Operating License Application by Private Fuel Storage, LLC for an Independent Spent Fuel Storage Facility."

⁴ The line of cases Utah has relied upon in other forums to support its assertion of jurisdiction arises from the planned disposal of 11e.(2) material at the Kerr-McGee Chemical Corporation's Rare Earth Facility, located partly within the corporate limits of the City of West Chicago. There are three pertinent cases:

premise underlying that earlier line of cases was incorrect. See Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998) (discussed *infra* at 11). When one looks at the relevant statutes and legislative history, it is plain that state regulation of 11e.(2) byproduct material is

Illinois v. Kerr-McGee Chem. Corp., 677 F.2d 571 (7th Cir. 1982), addresses whether the City can regulate public nuisances unrelated to the NRC-regulated tailings impoundment. The court cited to the legislative history of section 274(k):

It is not intended to leave any room for the exercise of dual or concurrent jurisdiction by states to control radiation hazards by regulating byproduct, source, or special nuclear materials. The intent is to have the material regulated and licensed either by the Commission, or by the state and local governments, but not by both.

The court also recognized that states were to retain their authority to regulate non-radiation hazards under section 274(k) and held that:

the City has the authority to regulate dangerous conditions constituting a public nuisance, such as open pits filled with refuse and chemicals in a factory area and insufficient fencing and lighting; and

the City has the authority to require Kerr-McGee to clean up off-site contamination.

In Brown v. Kerr-McGee Chem. Corp., 767 F. 2d 1234 (7th Cir. 1985), the court held that the AEA preempted a request for a state-law injunction to move non-radioactive wastes to another location when the non-radioactive and radioactive wastes were intermixed and inseparable. The court's rationale was that a state injunction requiring Kerr-McGee to remove the byproduct material would restrict the NRC's authority to regulate the radiological hazards associated with the material.

In Kerr-McGee Chem. Corp. v. City of West Chicago, 914 F.2d 820 (7th Cir. 1990), the court held that the AEA did not preempt a city ordinance concerning erosion and sedimentation requirements because the requirements did not conflict with NRC regulations.

Each of these cases is premised on the notion that under AEA sections 274(c) and 274(k) jurisdiction over 11e.(2) material is divided along radiological versus non-radiological lines, with the federal government exercising exclusive jurisdiction over the "radiological" aspects of 11e.(2) material and states retaining authority over the "non-radiological" aspects. As discussed in detail below, this "division" of 11e.(2) material into radiological and non-radiological components for jurisdictional purposes is inconsistent with the intent of Congress.

preempted by federal law. This is true for all components of 11e.(2) material wherever they appear--including components found in groundwater. Thus, a state's claim based on the regulation of any discharge of 11e.(2) byproduct material, whether radiological or non-radiological, is preempted by the AEA.

When Congress enacted UMTRCA in 1978 it created a new class of AEA-regulated material. This new class of material--11e.(2) byproduct material--was (and remains) unique under the AEA because it was expressly defined by Congress to include all waste--including radiological and non-radiological components--produced as a result of uranium extraction operations. This fundamental aspect of 11e.(2) byproduct material, which was emphasized in the legislative history of UMTRCA,⁵ cannot be ignored by artificially dividing 11e.(2) material into "radiological" and "non-radiological" aspects for purposes of apportioning jurisdiction between the states and the federal government.

The fallacy of attempting to divide jurisdiction over 11e.(2) material along radiological versus non-radiological lines was stressed recently by the U.S. Court of Appeals for the Ninth Circuit, in Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998). There, the Ninth Circuit, affirming the decision of the district court, held that the EPA lacked authority to regulate the discharge of 11e.(2) byproduct material under the Clean Water Act ("CWA"), 33 U.S.C. §§ 1251, et seq., because 11e.(2) byproduct material is not a "pollutant" for purposes of that Act. The pertinent aspect of Waste Action Project is the district court's recognition that the radiological

⁵ See, e.g., 124 Cong. Rec. 29,776 (Sept. 18, 1978). Senator Domenici explained:

A basic principle of the amendment is the creation of a unified regime for mill tailings so that various distinct materials which make up a single mill tailings pile need not be subject to fragmented, duplicative and potentially conflicting regulatory activities by different Government agencies.

components of 11e.(2) byproduct material cannot be segregated from the non-radiological components for purposes of asserting regulatory jurisdiction. Specifically, the plaintiff in the case had alleged that discharges of certain non-radiological constituents from a uranium mill tailings facility (e.g., silica, heavy metals, sulfates, phosphates, chlorides, and other chemicals) required an NPDES permit. The district court disagreed, noting that uranium mill tailings “are regulated solely by the NRC pursuant to the AEA, as amended by UMTRCA.” Waste Action Project v. Dawn Mining Corp., No. 96-0106, Slip op. at 12 (E.D. Wash. Sept. 3, 1996), aff’d, Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426 (9th Cir. 1998). Accordingly, the district court rejected the plaintiff’s assertion that the non-radiological discharges were subject to the CWA.

Finally, courts have made clear that in circumstances where the operation of state law would frustrate the purposes and objectives of Congress, or where state law and federal law conflict, state law will be preempted. English v. General Elec. Co., 496 U.S. 72, 78-79 (1990). Congress, when it enacted UMTRCA, created a coordinated federal regime for the comprehensive regulation of 11e.(2) byproduct material. Under this regime, three federal agencies (the NRC, the DOE, and the EPA) share responsibility for regulating all aspects of 11e.(2) material. It is evident from the legislative history, and from the statute itself, that Congress’ purpose in creating this comprehensive and pervasive federal scheme of regulation was twofold: first, Congress wanted to ensure that uranium mill tailings (and 11e.(2) byproduct material generally) would be regulated according to uniform national standards. Thus, as Congress explained when it enacted UMTRCA:

Without the authorities included in H.R. 13650 [eventually enacted into law as UMTRCA], the conditions addressed by the remedial program would be left without

remedy, and the authority of the Commission to establish uniform national standards for waste disposal from uranium mills would not be clear.⁶

Congress' second purpose in enacting UMTRCA was to ensure that uranium mill tailings would be stabilized, disposed of, and controlled in a safe, timely, and environmentally sound manner.⁷ State efforts to regulate various components of 11e.(2) byproduct material, including state attempts to regulate byproduct material components in groundwater, undermines the system of uniform, national standards that Congress intended to create under UMTRCA. Similarly, by imposing requirements different from, and in addition to, those imposed by the NRC, state regulation of 11e.(2) byproduct material in groundwater threatens to delay the closure of tailings sites and impede their transfer to DOE for long-term custody. This is a very important point for both Atlas and Utah. Under UMTRCA, the Mill must be transferred to DOE or Utah for perpetual care. However, it is likely that DOE will not take title and custody of the site for long-term care and surveillance if the site is also subject to state regulation, and Utah has indicated that it has no intention of taking the site.⁸

⁶ H.R. Rep. No. 95-1480, Part I at 12 (1978) (emphasis added). The legislative history is replete with statements indicating that Congress intended to create a uniform national system of regulation for 11e.(2) material. *See id.* Part II at 45; Hearing on H.R. 13382, H.R. 12938, H.R. 12535, and H.R. 13049 Before the Subcomm. on Energy and the Environment of the House Comm. On Interior and Insular Affairs, 95th Cong. 95-30 at 130 (1978)(statement of Joseph M. Hendrie, Chairman).

⁷ See, e.g. 42 U.S.C. § 7901(a).

⁸ Under the License Termination/Site Transfer Protocol between DOE and the NRC, DOE will not take title to a tailings disposal site, and the NRC will not terminate the license for a site, if there are any outstanding "issues" with respect to state regulatory authorities. Similarly, in situations where there is even a possibility that a state might seek to impose additional remediation requirements on top of those required by, DOE might feel compelled not to accept title, since to do so would be inconsistent with the statutory directive in AEA section 83, 42 U.S.C. § 2113, that such transfers to DOE are to be accomplished at no cost to the government. This reluctance on the part of DOE would likely be compounded by the concerns raised by the Federal Facilities Compliance Act, which requires that federal facilities comply with all state requirements "respecting the control

The conflict created by the State's assertion of authority to regulate 11e.(2) byproduct material in groundwater is evident here, in Utah's effort to impose state groundwater requirements on 11e.(2) byproduct material associated with the Atlas tailings pile. The NRC regulates both radiological and non-radiological discharges to groundwater, and is directed by Section 84 of the AEA to

insure that the management of **any** byproduct material, as defined in section 11e.(2) is carried out in such a manner as . . . the Commission deems appropriate to protect the public health and safety from **radiological and nonradiological** hazards associated with the processing and with the possession and transfer of such material, taking into account the risk to public health, safety and the environment . . . and such other factors as the Commission deems to be appropriate.

42 U.S.C. § 2114 (emphasis added).⁹ Utah has indicated that if it is allowed to impose its groundwater requirements on top of those imposed by the NRC, it will require groundwater treatment to remediate non-radiological constituents of 11e.(2) byproduct material from the Atlas tailings pile and could include changes to the surface reclamation plan that will be approved by the NRC. However, such a requirement would necessitate management and disposal of the waste resulting from the remediation as 11e.(2) byproduct material. This could prevent or significantly delay closure of the tailings pile (contrary to the general intent of Congress to ensure the prompt disposal and closure of mill tailings sites). Thus, if Utah were to exercise jurisdiction, an agency other than the NRC would be in the position to require actions that might ultimately provide less net

and abatement of solid waste disposal and management.” 42 U.S.C. § 6961(a).

⁹ UMTRCA required the EPA to promulgate environmental standards for radiological and nonradiological hazards associated with byproduct material. 42 U.S.C. § 2022(b). The EPA promulgated such standards, which include groundwater protection standards. 40 C.F.R. § 190.32(a)(2). The NRC (or agreement state) is charged with the responsibility for implementing and enforcing the standards. 42 U.S.C. § 2022(d). The State of Utah is not an agreement state for 11e.(2) material.

protection than those the NRC might determine to be sufficient and appropriate in the exercise of its statutory responsibilities. The result would be that the NRC would not retain total control of the wastes as intended by Congress.

In summary, Utah's efforts to regulate 11e.(2) byproduct material in groundwater threatens to undermine the system of uniform, national standards established under UMTRCA and to impede Atlas' tailings impoundment closure and transfer to the federal government. In addition, the imposition of state groundwater standards would lead to direct conflicts with federal requirements. Consequently, Utah's assertion of regulatory authority is preempted, and its claim based on remediation in accordance with its regulations should be dismissed.

III. THE ALLEGED RELEASES DO NOT CONSTITUTE AN IMMEDIATE AND IDENTIFIABLE HARM

A. No Facts Support a Finding of Immediate and Identifiable Harm

This Court should deny Utah's claim for administrative expenses because the alleged or actual releases into the groundwater at the Moab site do not constitute an imminent and identifiable harm to the public or the environment. Midlantic Nat'l Bank v. New Jersey Dept. of Environ. Prot., 474 U.S. 494 (1986). It is Utah's burden to prove that the alleged harm to the environment and the public health is "imminent and identifiable." Even assuming, arguendo, that Utah has jurisdiction, Utah cannot possibly meet this burden because it has procrastinated for more than 45 years without taking any action to require remediation of the groundwater and because it has not and cannot adequately identify any specific harm to the public or the environment.

In the instant case, the alleged harm to the public health or the environment is not imminent, the proof of which is shown by Utah's years of inaction. Utah has been aware of groundwater

contamination from the tailings pile for at least 20 years. Atlas and the NRC have continuously made Utah aware of activities at the Moab site since Atlas took over the mining operations in 1962. In fact, Utah on several occasions and accompanied by the NRC, took routine inspections of the site. The 1979 FES indicated that various non-radiological materials in the mill tailings pile would foster a “minor deterioration in the quality of groundwater and river water from liquid seepage from the tailings pond.” (See 1979 FES at ¶ 7.3.2, attached hereto as Exhibit A). In January 1978, Utah through its State Planning Coordinator sent a comment on the FES to the NRC, which stated that the state environmental coordinating committee had reviewed the FES and that the only agency choosing to comment was the Division of State History, which made no comment about groundwater contamination. (Id. at A-43). Furthermore, an NRC analysis prepared and delivered to Utah in 1987 showed that 13 contaminants were leaching from the tailings site into the groundwater. (See Exhibit D at 2-3). Despite possessing this information and access to all groundwater monitoring data from the site, Utah has done nothing proactive to attempt to cause the remediation of the groundwater.

Unless its jurisdiction has been preempted, Utah has statutory authority to remediate or cause Atlas to remediate the groundwater pursuant to the Utah Water Quality Act enacted in 1953 (Utah Code Ann. § 19-5-101, et seq.), the Utah Hazardous Substances Migration Act (“HSMA”) enacted in 1953 (Utah Code Ann. § 19-6-301, et seq.) and the Comprehensive Environmental Response, Compensation, and Recovery Act (“CERCLA”), 42 U.S.C. §§ 9601, et seq., enacted in 1980. Despite statutory authority and remedies which provide that it may either clean up the groundwater itself or cause Atlas to perform the cleanup, Utah has done nothing except to ask Atlas through a series of letters to study and file a plan for the groundwater corrective action. (See letters from Utah to Atlas, attached hereto as Exhibit G). It was not until September 1996 that Utah began an attempt

to force remediation in accordance with its Water Quality Act and notified Atlas that it was in violation of Utah clean water laws. (See Exhibit D). It goes without saying that if the harm associated with the groundwater was “imminent and identifiable” in 1996, Utah would have and should have taken some emergency action to clean up the groundwater. Instead, Utah has negotiated with Atlas regarding groundwater corrective action and in such negotiations has never suggested that the contamination at the Moab site represents an imminent threat to public health. Utah has not expended any money to remediate the groundwater, and to Atlas’ knowledge none has been spent, nor has Utah developed any specific information suggesting any imminent threat.

As a result, Utah has never claimed that the groundwater at the site constitutes an immediate or identifiable danger to the public health or to the environment. The emergency provision section of the HSMA, Utah Code Ann. § 19-6-308 states in relevant part:

(1)(a) If the executive director has reason to believe any hazardous materials release that occurred after March 18, 1985, is presenting a **direct and immediate threat to public health or the environment**, the executive director may:

(i) issue an order requiring the owner or operator of the facility to take abatement action within the time specified in the order; or

(ii) bring suit on behalf of the state in the district court to require the owner or operator to take immediate abatement action.

(Emphasis added). Utah has never issued or sought an order under this statute, nor has it brought suit against Atlas to take immediate action.

Also belying any claim that the harm is imminent and identifiable is the NRC’s position that emergency actions at the Moab site are not necessary because there is no imminent danger. The NRC told the Utah Attorney General that “exposure to uranium mill tailings do not pose an immediate acute risk to the health and safety of individuals.” (See Director’s decision dated

January 20, 1999 attached hereto as Exhibit H). Further, any emergency action is not practicable. (See NRC letter dated January 26, 1999, to Susan Daggett, attorney for the Grand Canyon Trust, attached hereto as Exhibit I).

During the 15 years since the closure of the mill in 1984, while Utah has done nothing, Atlas has, among other things, done the following:

1. Spent approximately \$7 million on remediation of the site and groundwater;
2. Dismantled and removed, or disposed of on site, the mill and related facilities;
3. Drained some liquid from the tailing pond, thereby decreasing the contaminant load;
4. Placed an interim cover over the tailing pond; and
5. Fully cooperated with the NRC to prepare reports, studies, and plans to deal with the cleanup of the Moab site.

Although the notice attached to Utah's proof of claim notes that it has evidence of various pollutants in the ground water that "may in turn cause discharge of pollutants in violation of" Utah water quality provisions, Utah has provided no evidence beyond this statement of the significant, much less imminent, threat, to the public health. Despite its burden of proof, it has not shown any evidence of harm to users of the water in the Colorado River.

Further, there is no evidence that downstream users of water from the Colorado River have suffered or been exposed to any identifiable harm. Utah has made only the vaguest of allegations that groundwater in the area contains some pollutants without showing identifiable harm to the environment or the public health.

B. Case Law on Imminent and Identifiable Harm

Every court that has considered whether to allow an administrative expense claim based upon environmental response costs has begun its analysis with the Supreme Court's Midlantic decision. In Midlantic, the New Jersey Department of Environmental Protection ("NJEDP") ordered Quanta Resources Corporation ("Quanta") to cease processing waste oil at one of its facilities. NJEDP and Quanta attempted to negotiate an agreement concerning cleanup costs, but Quanta filed a Chapter 11 bankruptcy petition prior to reaching any agreement. The next day, NJEDP issued an administrative order requiring Quanta to clean up the site. Shortly thereafter, the case was converted to a Chapter 7 proceeding, and the trustee moved to abandon the New Jersey facility and a similarly contaminated facility in New York pursuant to 11 U.S.C. § 554(a). Midlantic, 474 U.S. at 497.

No party to the bankruptcy disputed the trustee's allegation that the sites were burdensome and of inconsequential value to the estate; however, the City of New York objected to the abandonment of the New York facility because the trustee was required to operate the estate according to state law under 28 U.S.C. § 959(b). The NJEDP also objected on the grounds that the estate had sufficient funds to clean up the New Jersey site. The bankruptcy court approved the abandonment, and the trustee proceeded with abandonment of the sites even though the cases were on appeal. Thereafter, New York expended \$2.5 million to decontaminate the facility in its jurisdiction.¹⁰ 474 U.S. at 499.

The Supreme Court, reversed the bankruptcy court and held that the trustee could not abandon the facilities in contravention of state and local laws, and noted that under CERCLA, the

¹⁰The Court stated that New York's claim for reimbursement of an administrative expense for cleanup of the New York site was not before it. 474 U.S. at 499 n.2.

federal government may “secure such relief as may be necessary to avert ‘imminent and substantial endangerment to the public health or welfare of the environment because of an actual or threatened release of a hazardous substance.’” 474 U.S. at 506 (quoting 42 U.S.C. § 9606). According to the Court, the trustee’s abandonment of both sites resulted in the halting of security measures to prevent public entry, vandalism, and fire, and the waste oil in unguarded deteriorating containers presented “risks of explosion, fire, contamination of water supplies, destruction of natural resources, and injury, genetic damage, or death through personal contact.” 474 U.S. at 499 n.3 (citing various briefs of the parties). It is important to note that even though the Court precluded the Trustee’s power to abandon the Midlantic sites, it stated that any exception to the trustee’s abandonment power is very narrow:

It does not encompass a speculative or indeterminate future violation of such laws that may stem from abandonment. **The abandonment power is not to be fettered by laws or regulations not reasonably calculated to protect the public health or safety from imminent and identifiable harm.**

474 U.S. at 507 n.9 (emphasis added).

Since Midlantic, courts have applied the language cited in footnote 9 of the opinion in cases involving proposed abandonment and cases involving claims for administrative expenses. The 10th Circuit in In re L.F. Jennings Oil Co., 4 F.3d 887, 890-91 (10th Cir. 1993), cert. denied, 511 U.S. 1005 (1994), held that a trustee could abandon property in New Mexico because there was no immediate or identifiable harm to the public health:

[B]efore abandonment of a property can violate Midlantic the property must represent an immediate and identifiable harm to public health or safety.

Id. at 890 (citations omitted). The court noted that the property at issue was not listed on the state’s list of contaminated sites, which indicated that the state was not considering further testing or

investigation. Second, there was insufficient data from the state's own expert showing that the property was an immediate threat. And third, the trustee's only violation of state law was a failure to file reports. Therefore, the bankruptcy court's order permitting abandonment did not violate Midlantic. Id. at 891; see In re Smith-Douglas, Inc., 856 F.2d 12, 16 (4th Cir. 1988) (no immediate or identifiable harm because, although state agency inspected property and received environmental reports, state never took any enforcement action against the property owner); In re H.F. Radandt, Inc., 160 B.R. 323, 328 (Bankr. W.D. Wis.1993) (state inaction persuasive evidence of absence of imminent danger); cf. In re Purco, Inc., 76 B.R. 523, 532-33 (Bankr. W.D. Pa.1987) (state's nonparticipation in abandonment hearing evidence of lack of imminent danger).

Similarly, in In re Shore Co., 134 B.R. 572, 578-79 (Bankr. E.D. Tex. 1991), the state of Texas was unable to show that there was imminent and identifiable harm at a refinery owned by the debtor which the trustee moved to abandon in 1988. The court noted that Texas was aware of environmental violations at the refinery in 1982, but the state's actions since then had been "tepid at best with little in the way of substantive enforcement being effected." Id. at 579. The court concluded that the site was more of an "environmental concern than an immediate danger." Id. In addition, the EPA offered little evidence of a specific harm. Id. In the instant case labeling Utah's years of inaction as "tepid at best" would be an understatement. Furthermore, Utah has shown no specific harm, relying instead on general statements that pollutants might be discharged into the water in violation of Utah laws.

The Midlantic imminent and identifiable harm rationale is similarly applicable to the question of whether environmental cleanup costs should be accorded administrative status. When courts have accorded administrative status to environmental claims, they have held that if property containing

substances that pose a significant hazard to public health cannot be abandoned because there is an imminent and identifiable harm, it follows that expenses to remove such substances are necessary to preserve the estate. In re Chateaugay Corp., 944 F.2d 997, 1010 (2d Cir. 1991); accord In re Stevens, 68 B.R. 774, 783 (Bankr. D. Me. 1987) (improper and illegal storage of waste oil containing PCBs is an imminent and identifiable danger and cleanup costs for the oil entitled to administrative priority); see In the Matter of Chicago, Rock Island and Pac. R.R. Co., 756 F.2d 517, 520 (7th Cir. 1985) (removal of railroad tracks would be an administrative expense if necessary to avert imminent danger) (dictum); see also In re National Gypsum Co., 139 B.R. 397, 413 (N.D. Tex. 1992) (government bears the burden of showing that cleanup costs were incurred due to an imminent and identifiable harm to the environment and public health).

Conversely, if a trustee can abandon contaminated estate property because there is no imminent and identifiable harm to the public health and the environment, the expenses to remove such substances are neither necessary to preserve the estate nor administrative in nature. See In re McCrory Corp., 188 B.R. 763 (Bankr. S.D.N.Y. 1995). Environmental remediation expenses are only accorded administrative priority when failure to do so would result in an “ongoing, potentially disastrous health hazard without remedy from those at fault.” In re Wall Tube & Metal Prods. Co., 831 F.2d 118, 122 (6th Cir. 1987). Thus, if there is no imminent and identifiable harm, as is the case with groundwater at the Moab site, then such expenses should not be accorded administrative priority.

The court in McCrory denied administrative expense status to environmental response costs incurred postpetition because there was no imminent and identifiable harm. The debtor filed a Chapter 11 bankruptcy petition and moved to reject a lease. No one objected to the rejection, which

the court approved. The property owner-lessor discovered environmental damage to the property after the rejection and submitted a cleanup plan to the state. Before the plan was implemented, a new lessee commenced similar operations at the site. The lessor then removed storage tanks containing hazardous waste from the site. The lessor filed a motion to recover the cleanup costs and argued that the costs were entitled to administrative priority. Id. at 764-65.

The Court discussed the case law construing Midlantic in the context of administrative expenses and noted that:

Courts following Midlantic accord administrative priority to post-petition clean-up costs based on prepetition environmental damage if the damage constitutes an ‘imminent and identifiable’ harm to the public health and safety.

Id. at 768 (citing Stevens, 68 B.R. at 783). To determine if the violation of state law poses an imminent risk of harm, “[c]ourts must look to the ‘design of the state law or regulation’ in issue.”

Id. (citation omitted).

The McCrorey court listed a number of factors that demonstrated that there was no imminent and identifiable harm due to hazardous waste at the property. First, based upon the New Jersey statute at issue, the Environmental Cleanup Recovery Act (“ECRA”), any required cleanup could be deferred because the site was subject to substantially the same use. Id. at 768-69 (citing N.J. Stat. Ann. § 13:1K-9(c)). Therefore, ECRA itself recognized that, in some instances, the harm it addresses might not be imminent. Second, the lessor did not implement the major portion of the cleanup until approximately one year after the debtor rejected the lease and then leased the property to another company that also discharged hazardous substances at the site. Id. at 769. Third, the state agency charged with enforcement of ECRA threatened to issue notice of violation, but failed to do so. The court stated:

While a state health agency threatened to issue a notice of violation if the situation did not improve, there is no indication that any state agency threatened to close operations or required immediate clean-up of any damage caused by releases or hazardous substances.

Id. at 769. These factors “all indicate that this was not the type of ‘imminent’ harm to the public health that would preclude the trustee from abandoning the Property.” Id. (emphasis added).

Therefore, such expenses did not benefit the estate and were not accorded administrative status.

Just as was the case in McCrorry, Utah has: (1) deferred taking any action to clean up the groundwater at the Moab site (in this case for over 20 years); (2) chosen not to take any action despite statutory authority to order the cleanup; and (3) failed to file any enforcement actions.

Utah cannot show that groundwater contamination represents an imminent and even a significant threat to public health or the environment based on the evidence in the record. Therefore, Atlas requests that this Court deny Utah’s claim for an administrative expense.

IV. ANY AMOUNTS THAT ATLAS COULD PAY FOR UTAH’S ADMINISTRATIVE EXPENSE CLAIM WOULD NOT BENEFIT THE ESTATE

Even if the Court determines that there is an imminent and identifiable harm at the Moab site, this Court should deny Utah’s administrative expense claim because the Debtor would be forced to exhaust its assets without providing any measurable benefit to the estate. A court cannot order a trustee or debtor-in-possession to comply with a cleanup obligation where the estate does not have the requisite financial resources. In re Microfab, Inc., 105 B.R. 161, 169 (Bankr. D. Mass. 1989); see H.F. Radandt, 160 B.R. at 327; cf. In re Shore, Inc., 134 B.R. at 580. An environmental law must not be so onerous as to interfere with the bankruptcy adjudication itself. Wall Tube, 831 F.2d at 122 n.13; Microfab, 105 B.R. at 169.

In Microfab, the trustee sought to abandon a contaminated site. The court found that while the site posed an immediate and identifiable harm to the public health, the estate did not have enough funds to clean the site adequately. The government estimated that remediation would cost \$1,660,000 to \$1,990,000, leaving the remediation effort underfunded by between \$910,000 and \$1,240,000. Therefore, the government “failed to show that the Trustee could significantly improve the condition of the Site with the estate’s limited assets.” Microfab, 105 B.R. at 170.

The instant case presents just such a situation. Here, Utah’s \$77 million administrative expense claim against the debtor not only will leave the remediation effort significantly underfunded, it threatens to overwhelm the estate and completely wipe out the claims of unsecured creditors. Atlas estimates that a liquidation of assets potentially available to satisfy Utah’s claim, assuming a liquidating trust is created would yield approximately \$8,000,000.00. (See letter dated January 29, 1999, from Harvey Sender to Robert Clark, Assistant U.S. Attorney, attached hereto as Exhibit J). Additionally, the NRC has filed an administrative expense claim of \$44 million, \$25 million of which is being claimed to remediate contaminated groundwater at the site. If this Court grants Utah’s claim, the estate will be forced to liquidate, no unsecured creditor will receive a penny, and both Utah and the NRC will not receive enough to fund their groundwater remediation efforts. The NRC will not even have sufficient funds to assure completion of surface reclamation of the tailings pile. Further, granting such a claim will yield little benefit to the estate, as Utah will not receive any amount close to the full amount of its alleged expenses. See In re Lister, 846 F.2d 55, 58 (10th Cir. 1988) (compensable administrative expenses must substantially contribute to the estate to justify contribution). Utah’s claim should be also be denied because it is duplicative and in direct conflict with the claim and remediation efforts of the NRC. As stated supra, Utah has not expended any

money to remediate the groundwater. Furthermore, any money which it recovers from Atlas will not necessarily be used to remediate the groundwater. Instead, the funds will be added to the state's general fund and be available for its general purposes. Utah Code Ann. § 19-5-115(11).

Because Utah's administrative expense claim for environmental response costs will not remediate an imminent and identifiable harm and because liquidation of the estate's assets will do little to assist Utah in paying for its expenses, the Court should find that Utah has only a general unsecured claim.

**V. UTAH'S PROOF OF CLAIM HAS NO BASIS IN LAW OR FACT
AND SHOULD BE VALUED AT ZERO OR STRICKEN**

This Court should also deny Utah's claim because its proof of claim has no basis in fact and is duplicative of the NRC's claim. Utah's proof of claim lists a dollar amount of \$77 million, but simply cites to a 1996 letter to Atlas, Utah statutes, and regulations as proof of that claim. There is no basis suggested, no supporting data, and no calculation of how it arrived at \$77 million. How Utah can justify a \$77 million claim for groundwater remediation while the NRC's claim for groundwater remediation is only \$25 million clearly demonstrates the conclusion that the claim has been seriously inflated and that its claim has no basis in law or in fact.

Under Rule 11, when an attorney signs a pleading, he or she certifies that it is not being presented for an improper purpose, the claim is warranted by existing law or a nonfrivolous argument for an extension of existing law, and that the factual allegations have evidentiary support. F.R.B.P.. 9011 (b). "The . . . language stresses the need for some pre-filing inquiry into both the facts and the law to satisfy the affirmative duty imposed by the rule." Burkhardt v. Kinsley Bank, 804 F.2d 588, 589 (10th Cir. 1986) (citing Notes of Advisory Committee on Rules). If there is a violation,

the court may sanction the attorney, the party, or both. F.R.B.P. 9011(c). An attorney's action must be objectively reasonable to avoid Rule 11 sanctions. White v. General Motors Corp., 908 F.2d 675, 680 (10th Cir. 1990). If a party is at fault, then the sanction should be directed at the party. In re McIntosh, 89 B.R. 144, 148 (Bankr. D. Colo. 1988).

Rule 11 sanctions have several purposes: 1) deterring future abuses; 2) compensating victims of such abuse; 3) punishing present abuses; and 4) streamlining court dockets and facilitating case management. White, 908 F.2d at 683. The rule is intended to prevent abuses arising from bad faith, negligence, and to an extent, professional incompetence. Id. (citing Gaiardo v. Ethyl Corp., 835 F.2d 479, 482 (3d Cir. 1987)).

Given the size of Utah's claim, the lack of any supporting data or justification, and the wide discrepancy between Utah's claimed cost of groundwater remediation only for nonradiological contaminants and the highest amount estimated by both the NRC (\$25 million) and the Debtor (\$21 million), the person signing the claim must have known it was false or recklessly disregarded the truth.

Sanctions are warranted where, as is the case here, a party makes a false claim against a debtor. See United States v. Singleton, 91 B.R. 604, 608-09 (Bankr. N.D. Fla. 1988). In Singleton, the United States as creditor filed an adversary action against a debtor to seek an exception from discharge under 11 U.S.C. § 523(a)(2)(A). The court sanctioned the United States as a party and the United States Attorney as attorney because it amended a complaint to add the discharge claim when it knew at the time that it had no cause of action and simply changed its requested relief because it could not obtain the relief it originally sought, to wit, granting a lien on the debtor's house. Id. at 609.

Other than reciting the statutory basis for its claim, Utah's only supporting documentation attached to the proof of claim are copies of a 1996 letter to Atlas (see Exhibit D) in which Utah asks Atlas to begin actions to correct seepage of non-radiologic byproduct waste into the groundwater at the Moab site and copies of Utah's Water Quality statutes and regulations. Its Supplement to its Proof of Claim is a barebones one-and-a-half page "explanation" of the basis for its claim. There is no detailed description of work to be done, either by Utah or by its contractors, no dollar amounts listed for each part of the proposed project, no estimates of the time needed to complete such a project, no environmental impact statements, no drawings of the proposed plan, no indication of acceptable seepage amounts, and no statement of how much money Utah has expended. The claim is totally unsubstantiated and baseless. No reasonable person could justify a claim for \$77 million. Furthermore, the NRC's proof of claim states that \$25 million of its of \$44 million administrative expenses will be used to clean groundwater at the site. Since the NRC proposes to cleanup the groundwater, Utah's claim is duplicative and will not benefit the estate.

Further, the Supplement to Proof of Claim says nothing about Utah's Natural Resource Damage Claim, pursuant to 42 U.S.C. § 9607(f), which was listed in its initial proof of claim. The work to be done as described in the supplement concerns only remediation of the tailings pile. It says nothing about any natural resources damage, and there is no dollar amount listed for this component of the claim.

Under these circumstances, the Court should either strike Utah's claim altogether or fix the claim at zero.

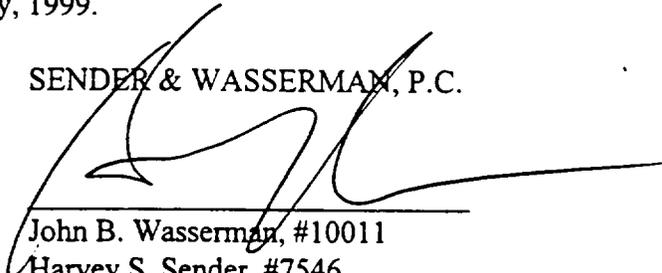
VI. CONCLUSION

For the foregoing reasons Atlas requests that this Court:

1. Deny Utah's claim because its actions are preempted by federal law;
2. Deny Utah's administrative expense claim because there is no imminent and identifiable harm to the public or the environment;
3. Deny Utah's Administrative Expense Claim because it will not benefit the estate; and
4. Strike or value Utah's claim at zero because it has no basis in fact or law and duplicates the claim of the NRC.

DATED this _____ day of February, 1999.

SENDER & WASSERMAN, P.C.



John B. Wasserman, #10011

Harvey S. Sender, #7546

Daniel J. Garfield, #26054

1999 Broadway, Suite 2305

Denver, Colorado 80202

(303)296-1999 Phone

(303)296-7600 Facsimile

sender@sendwass.com

SHAW PITTMAN POTTS & TROWBRIDGE

Anthony Thompson

David C. Lashway

2300 N. Street, N.W.

Washington, D.C. 20037-1128

202 663-8000 Phone

202 663-8007 Facsimile

ATTORNEYS FOR ATLAS CORPORATION

final

NUREG-0453

environmental statement

related to operation of

MOAB URANIUM MILL

ATLAS MINERALS DIVISION

ATLAS CORPORATION

JANUARY 1979

Docket No. 40-3453

U. S. Nuclear Regulatory Commission

**Office of Nuclear Material
Safety and Safeguards**

EXHIBIT A

NUREG-0453

FINAL ENVIRONMENTAL STATEMENT

related to the

Atlas Minerals Division, Atlas Corporation

ATLAS URANIUM MILL

(GRAND COUNTY, UTAH)

prepared by the

U. S. Nuclear Regulatory Commission

Washington, D. C. 20555

January 1979

SUMMARY AND CONCLUSIONS

This final environmental impact statement has been prepared by the staff of the U. S. Nuclear Regulatory Commission and is issued by the Commission's Office of Nuclear Material Safety and Safeguards.

1. This action is administrative.
2. The proposed action is the continuation of Source Material License SUA-917 issued to Atlas Corporation for the operation of the Atlas Uranium Mill in Grand County, Utah, near Moab (Docket No. 40-3453).

The present mill was designed for an 1100 MT (1200 ton) per day processing rate with .25% uranium ore feed. The actual ore processing rate may vary up to 1450 MT (1600 ton) per day if lower grade ores are processed, but the annual production rate of 836 MT (921 tons) U_3O_8 will not be exceeded.

3. Summary of environmental impacts and adverse effects:

- a. The Atlas mill has been in operation since 1956. Impacts to the area during the nearly 20 years of operations have included:
 - Alteration of approximately 80 ha (200 acres) of sagebrush-grassland to milling activities, including the tailings storage pond.
 - Increase in the existing background radiation levels as a result of continuous but small releases of uranium, radium, radon, etc., during mill operation.
 - Socioeconomic effects on Moab and other nearby areas which house (or have housed) workers from the mill.
 - Extraction of approximately 30,650 MT (33,792 tons) of U_3O_8 , resulting in approximately 7.2 million MT (8 million tons) of tailings material.¹
- b. The mill site has been altered from the natural state by milling activities. Continued operation of the Atlas mill will not require the disturbance of additional lands beyond the approximately 80 ha (200 acres) presently committed to the project. The area devoted to the mill itself will be reclaimed after operations cease, but the 115-acre tailings area, under present reclamation plans, must be considered unavailable for further productive use.
- c. Surface water will not be affected by normal operations. Mill process water is recycled from the tailings ponds and supplemented by withdrawals from the Colorado River. Makeup water used by the mill totals 241,000 m³/yr (121 gpm).
- d. There will be no direct discharge of liquid or solid effluents from the mill and tailings site. The discharge of pollutants to the air will be small and the effects negligible. Any increase in seepage to the river due to the acid leach circuit will be offset by gypsum deposition in the tailings pond, which will reduce seepage. The estimated annual whole-body and organ dose commitments to the population of Moab, Utah, are presented below. Natural background doses are also presented for comparison. These dose estimates were based on projected population in the year 1990. The population dose commitments due to normal operations of the Atlas mill represent only very small increases in the population radiation dose-rates from background radiation sources.

Annual Population Dose Commitments (man-rem/year)
to Population of Town of Moab in the Year 1990

	Mill Effluents	Natural Background
Total body	0.2	750
Lung	9	1350
Bone	3	900
Bronchial epithelium	140	7500

- e. Continued operation of the Atlas mill will require the commitment of small amounts of chemicals and fossil fuels relative to their abundance.
- f. Continuation of the Atlas mill will provide ongoing employment and induced economic benefits for the region.
4. Principal alternatives considered are:
- Alternative sites for the mill
 - Alternative mill processes
 - Alternative reclamation and stabilization plans
 - Alternative of no action on relicensing of existing mill
5. The following Federal, state, and local agencies were asked to comment on the draft environmental statement:

Department of Commerce
 Department of the Interior
 Department of Health, Education and Welfare
 Federal Energy Regulatory Commission
 Department of Energy
 Department of Transportation
 Environmental Protection Agency
 Department of Agriculture
 Advisory Council on Historic Preservation
 Department of Housing and Urban Development
 Office of the Governor, State of Utah
 State Planning Coordinator, State of Utah
 Department of Agriculture, State of Utah
 Department of Environmental Quality, State of Utah
 Department of Game and Fish, State of Utah
 Board of Commissioners, Grand County, Utah

Comments and staff responses are reproduced in Appendix A.

6. This final environmental impact statement was made available to the public, to the EPA, and to other specified agencies in January of 1979.
7. On the basis of the analysis and evaluation set forth in this statement, it is proposed that the renewed license issued for the Atlas uranium mill be subject to the following conditions for the protection of the environment:
- If the applicant desires to raise the height of the tailings impoundment in the future, a separate request to amend the Source Material License will be required. Any such construction must utilize methods that satisfy the safety criteria of the NRC.
 - The applicant shall implement an interim stabilization program that minimizes to the maximum extent reasonably achievable dispersal of blowing tailings. The effectiveness of the control methods used shall be evaluated weekly by means of a documented tailings area inspection.
 - The applicant will implement additional environmental monitoring programs (Table 6.4) to determine background radiation rates in the vicinity of the mill and to monitor chemical seepage from the tailings area. The applicant shall establish a control program that shall include written procedures and instruction to control all environmental

monitoring prescribed herein and shall provide for periodic management audits to determine the adequacy of implementation of these environmental controls. The applicant shall maintain sufficient records to furnish evidence of compliance with these environmental controls. In addition, the applicant shall conduct and document an annual survey of land use (grazing, residences, etc.) in the area surrounding the proposed project.

- d. The applicant shall perform trend analysis of groundwater contamination below the tailings pond as outlined in Section 4.5.2.
- e. If the ongoing analysis of arsenic buildup in rodents at the mill site indicates an unacceptable level of arsenic body burden in the rodents, the applicant shall devise a monitoring program to assess the impact from such a buildup and shall implement mitigative actions as required by the NRC.
- f. Before engaging in any activity not evaluated by the NRC, the applicant will prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is greater than that evaluated in this environmental statement, the applicant shall provide a written evaluation of such activities and obtain prior approval of the NRC for the activity.
- g. Prior to disturbing any presently undisturbed soils for mill operations in the future, the applicant shall have an archeological survey conducted of the site(s) to be disturbed. The Utah State Department of Development Services and the U. S. Department of the Interior shall be contacted prior to the survey to provide assistance or comment in planning such a survey.
- h. If unexpected harmful effects or evidence of irreversible damage not otherwise identified in this statement are detected during operations, the applicant shall provide to the NRC an acceptable analysis of the problem and a plan of action to eliminate or reduce the harmful effects or damage.
- i. The applicant will provide for stabilization and reclamation of the mill tailings disposal areas as described in Section 3.2.5 and modified by the staff in Alternative 2 of Section 10.3.2.
- j. The applicant will provide for mill decommissioning and mill site reclamation as described in Section 3.2.6.
- k. Within three years of this license renewal, the applicant shall install NRC-approved riprap protection for the tailings dam along Moab Wash as indicated in Section 10.1.

8. Position of the NRC:

The position of the Nuclear Regulatory Commission is that, after weighing the environmental, economic, technical, and other benefits of the continued operation of the Atlas Uranium Mill against environmental and other costs, and considering available alternatives, the action called for under the National Environmental Policy Act of 1969 and 10 CFR 51 is the renewal of the source material license SUA-917 subject to conditions 7, a through m above.

As announced in a *Federal Register* notice dated 3 June 1976 (41 FR 22430), the NRC is preparing a generic environmental statement on uranium milling. Although it is the NRC's position that the tailings impoundment method discussed in this statement represents the most environmentally sound and reasonable alternative now available, any NRC licensing action will be subject to express conditions that approved waste generating processes and mill tailings management practices may be subject to revision in accordance with the conclusions of the final generic environmental impact statement and any related rule making.

Reference

1. "Tailings Management and Reclamation Alternatives Study for Atlas Minerals Mill at Moab, Utah," Supplement to Environmental Report, Dames & Moore, Job No. 05467-019-06, July 29, 1977.

Several design criteria are followed to ensure the integrity and stability of the tailings pond system. The ponded water is kept in a central location through the use of a centrally located pumping decant barge and by moving the position of the discharge point to the area where water is closest to the dike. To minimize the possibility of overflows and spills, the distance of the pond edge from the embankment is kept at no less than 150 feet (45 m) except for the west embankment, which is designed as a water-retention dike with appropriate drains and riprap protection for wave run-up. Accurate control of water level is achieved by the centrally located decant barge.

The new west embankment is designed with sufficient safety factors (1.6 to 2.2) to withstand existing and projected static loading conditions, a maximum anticipated earthquake loading of 5% gravity, and the possibility of embankment liquefaction. The exposed surfaces of the tailings embankment is covered with approximately one foot (30 cm) of "shale" material from adjacent hillsides to reduce wind and rain erosion of the slopes.

Past seepage from the tailings pond has been calculated at around 1.7 gpm (1×10^{-4} m³/sec) per acre of pond surface. However, future seepage rates are expected to be lower because the rate of flow of water circulated to transport the tailings to the pond has been reduced from 1000 gpm to 200 gpm (6×10^{-2} to 1×10^{-2} m³/sec), reducing the quantity of water flowing over the more permeable "beach" tailings. Also, sealing is postulated to have occurred due to mixing of the tailings from the acid- and alkaline-leach circuits resulting in the deposition of gypsum in the tailings pond. (Sec. 4.3 contains a discussion of future seepage.)

Sanitary and Other Mill Waste Systems

Sanitary wastes are treated in a 3200-gallon (12,000-l) septic tank and leach-field system, both approved by the Utah State Board of Health. A commercial operator cleans out the system annually and trucks the residual sludge to the City of Moab Municipal Sewage Disposal Plant, which provides primary and secondary treatment, in accordance with Atlas' contract with the City of Moab.

Used lubricating oil and grease, amounting to about 500 gallons (1900-l) per month, is collected from all gear boxes, motorized vehicles, and lubrication points throughout the plant. The material is stored in a 4500-gallon (17,000-l) tank prior to shipment in 4000-gallon (15,000-l) totes to a Salt Lake City refinery for reprocessing.

Laboratory and other solid wastes exposed to radioactive contaminants will be collected and buried in the tailings pile.

3.2.4 Radioactive Wastes and Effluents

In the following sections those steps of the milling process that yield radioactive effluents are described and release rates are analyzed using available data from similar operating plants, staff site inspections, and measurements taken at similarly operating plants. The estimates of potential release are adjusted to a 20-year milling period to allow for future operations and to assure that all estimates are sufficiently conservative.

During previous operation, ore from the Atlas mill has contained an average of 0.25% U₃O₈ for the acid-processed ore and 0.20% U₃O₈ for the alkaline-processed ore. In the future, due to decreasing ore quality, the percentage of U₃O₈ will decrease, making the calculations in this section conservative as regards future operations. Under radioactive equilibrium conditions the ore contained an average of 700 pCi/g in the acid-process circuit and 560 pCi/g in the basic-process circuit of each of the radionuclides U-238, U-234, Th-230, Ra-226, and Pb-210.

The principal natural isotopes of uranium, U-238 and U-235, exhibit separate radioactive decay series. The concentration of U-235 in natural uranium is 0.72%, and the activity of this series in the ore is approximately 34 pCi/g. In the U-235 series, the only long-lived radionuclide is Pa-231, with a half-life of 3.43×10^4 years. The quantity of radioactivity released by the U-235 series is small in comparison with amounts from the U-238 series.

Figure 3.3 depicts the pathways for dispersion of radioactivity to air, surface water, and groundwater from mining and milling operations. Parameters used to derive the source terms for the radiological assessment, and the source terms themselves are listed in Appendix C-1, Tables C-1.1 and C-1.2. The sources of radioactive effluents from the mill are (1) the ore pad, crusher, and grinder, (2) the yellowcake dryer, and (3) the tailings.

Comparison of TDS, chloride and sulfate concentrations from sample locations; (1) between the tailings pond and the river, (2) within the tailings sands, and (3) from a site about 0.6 mile upstream from the tailings pond do not indicate that either tailings seepage or wind blown tailings are increasing the natural chemical concentrations found in the area along the river.

Analysis of sample results (Table 4.2) conducted in September 1977 indicate that for five metals known to be in the tailings pond liquid in significant concentrations, the concentrations found in samples 0.1 mile downgradient from the tailings pond are lower than half of the concentrations found at a site 0.6 mile upstream and at a similar site over 25 miles upstream.

Samples will be analyzed quarterly from the area between the tailings pond and the river and from similar sites unaffected by seepage from the tailings pond. Trend analysis of the concentrations of K^+ , Na^+ , Cl^- , SO_4^{2-} , NO_3^- , Cu, Fe, Mn, As, Se, as well as pH, TDS and conductivity will be performed to determine if seepage is increasing the chemical concentrations in the groundwater. Alert levels for this analysis will be subject to NRC approval and may be altered with NRC approval as sufficient chemical monitoring data are accumulated to establish expected variations from existing conditions. At any time that analysis indicates that contamination of the groundwater is occurring the operator will take mitigative action, subject to NRC approval, as required by the situation.

Table 4.2. Sample Analyses, September 1977 (all in ppm)^a

Element	Atlas Tailings Pond	0.1 Mile Nearest Riverbank	0.6 Mile Upstream	Over 25 Miles Upstream
Al	1043	11.84	17.69	8.51
Cu	8.5	0.08	< 0.05	< 0.05
Fe	1178	14.26	24.3	5.71
Mn	73	1.82	2.44	2.40
Zn	13.64	0.065	0.451	0.063

^aArgonne National Laboratory sample results.

4.6 BIOTA

4.6.1 Terrestrial

4.6.1.1 Construction Impacts

Virtually all of the present Atlas mill site appears to have been occupied by a desert grassland (probably galleta-three awn, see Sec. 2.9.1) prior to the construction of the mill (Ref. 3, Fig. 3 accompanying Query No. 8). The staff estimates that a total of 194 acres (78.6 ha) of grassland and six acres (2.4 ha) of riparian woodland have been disturbed (Table 4.3). This represents approximately 43% of the preexisting grassland and 1.4% of the preexisting woodland and marsh grasslands within 0.9 mile (1.5 km) of the present tailings pond. [This distance includes most of Moab Valley north of the Colorado River, most of Moab Marsh, and almost no area beyond Moab Valley.]

If the projected alternative evaporation pond is developed, an additional 20 acres (8.1 ha) of desert grassland will be disturbed, bringing the total disturbance to 47.5% of the preexisting grassland within 0.9 mile of the present tailings pond.

4.6.1.2 Impacts of Fugitive Dust

The composition of fugitive dust from the tailings pond has been different from that of natural dust, specifically in leachable salts (see Sec. 4.5). The impact of these salts is difficult to predict. The staff speculates that fugitive dust deposition has had no appreciable impact on the wetlands (riparian woodlands and marsh grasslands) because of the dilution of the salts by the relatively abundant water and removal of the salts by the relatively high volume of groundwater flow. In the drier areas (shadscale and desert grasslands), the result of dust deposition has probably been a shift toward badlands-like communities,⁴ either due to simulated gypsiferous

7. UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

7.1 AIR QUALITY

The unavoidable impacts of the mill on the air quality of the area are few. Some increases in suspended particulates occur, but their impact on the air quality of the region is minor. The small chemical emissions anticipated will have a negligible impact on the air quality of the area.

7.2 LAND USE

The area's topography has been altered by the presence of the mill, and the restricted area will be permanently altered after the milling operation is completed. The tailings produced by the mill will remain, thus making it impossible to restore that portion of the area to its original topography.

The land on which the site is located is valuable by reason of its proximity to the city of Moab, to recreational and commercial developments that have occurred and will continue to occur around this land, and because relatively few acres in the area are privately owned. Restriction of the tailings pile area after mill closure (currently 115 acres) is a significant but unavoidable impact on the growth potential of the mill site area.

7.3 WATER

7.3.1 Surface Water

Mill operation results in the annual removal from the Colorado River of 121 gpm (241,000 m³/hr) of water (SAR, Fig. 3.1-2, Material Balance). This is a minor withdrawal in comparison with the average flow of the river. No other impacts on water resource use are anticipated.

7.3.2 Groundwater

A minor deterioration in the quality of groundwater and river water can be expected from liquid seepage from the tailings pond. Important parameters of concern are radionuclides, total dissolved solids, and toxic elements such as arsenic. The magnitude and extent of these water quality changes, as well as mitigating factors, have been discussed in Section 4.

7.4 MINERAL RESOURCES

Mining of the principal uranium ore deposits will deplete the higher-grade ore bodies. However, if it becomes profitable and/or necessary, reworking of the mill tailings and the remaining lower grade ore can readily be accomplished. As there are no other known mineral deposits of economic value in the immediate vicinity of the mill, no impacts on minerals other than uranium are expected.

7.5 SOILS

Any soil profile development that may have existed at the tailings pond site prior to mill construction has been irretrievably buried under the tailings. Similarly, if the alternative tailings pond site is utilized, additional soil will be buried.

Due to the nature of the tailings material, and possible clay cap material, the staff expects that any future soils that develop over the tailings pond will be underlain by gypsiferous-like horizons, which may adversely affect soil development.

7.6 BIOTA

7.6.1 Terrestrial

All biotic communities existing at the tailings pond site prior to mill construction and operation have been destroyed. Most of the vegetation at the mill site has been destroyed or replaced by highly disturbed, weedy communities, including exotic species (ER, Sec. 2.8.1, p. 2-27).

7.6.2 Aquatic

The staff does not expect detectable adverse impacts on aquatic biota.

7.7 RADIOLOGICAL IMPACTS

The operations at the Atlas mill will result in the release of radioactive particulates into the air and of Ra-226, by seepage, into the Colorado River. The particulates released into the air will be deposited on the ground, largely in the area of the mill. This will result in an increase in the level of ambient radiation around the mill due to direct radiation. However, the increase is small and will not cause the environment around the mill to become a health hazard to the public (see Sec. 4.7.2).

The amount of Ra-226 entering the Colorado River by seepage is small, and the lowest expected flow rate of the river will provide sufficient dilution to keep the Ra-226 concentration in the river water at less than one percent of the maximum permissible concentration.

7.8 SOCIOECONOMIC IMPACTS

Any disruptions to the local community by the location and operation of the mill have occurred and have been mitigated.

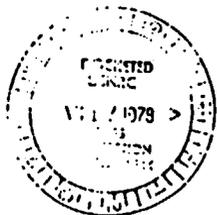
Scott M. Matheson
Governor



James Erwin Kee
State Planning Coordinator
Joseph L. Platt
Deputy, State Planning Coordinator

STATE OF UTAH
Office of the
STATE PLANNING COORDINATOR
118 State Capitol
Salt Lake City, Utah 84114
(801) 533-5700

January 10, 1978



Leland C. Rouse, Chief
U.S. Nuclear Regulatory Commission
Fuel Processing & Fabrication Branch
Division of Fuel Cycle & Material Safety
Washington, D.C. 20555

Dear Mr. Rouse:

The Utah State Environmental Coordinating Committee has reviewed the draft environmental statement Related to Operation of Moab Uranium Mill. The only agency choosing to comment is the Division of State History, these comments are enclosed for your convenience.

Thank you for the opportunity to comment.

Sincerely,

Joseph L. Platt
Deputy, State Planning Coordinator

JLP/jl

Enclosure

Response: None.

December 14, 1977



STATE OF UTAH
Scott M. Matheson, Governor
DEPARTMENT OF
DEVELOPMENT SERVICES

Michael D. Callivan
Executive Director
104 State Capitol
Salt Lake City, Utah 84114
Telephone: (801) 533-5961

Mr. Milo A. Barney, Chairman
Environmental Coordinating Committee
State Planning Office
118 State Capitol
Salt Lake City, UT 84114

Dear Mr. Barney:

RE: Moab Uranium Mill, Grand County, Docket No. 40-3453

On the basis of staff review and recommendation, the State Historic Preservation Officer has determined that no known sites exist in the project area; and therefore the proposed project will have no known effect on any recognized or potential National Register historical, archeological, or cultural sites. Please be advised, however, that should artifacts or cultural objects be discovered during the construction stage, it is the responsibility of the Federal agency or community receiving block grant funds to notify this office immediately as provided for in the Utah State Antiquities Act of 1973 and Public Law 93-291.

Should you need assistance or clarification, please call or write Wilson G. Martin, Preservation Planner, Utah State Historical Society, 603 East South Temple, Salt Lake City, Utah 84102, 533-5755.

Sincerely,

Michael D. Callivan
Executive Director
and
State Historic Preservation Officer

WCM:jjw:B237GD

cc: Leland C. Rouse, Chief, Fuel Processing and Fabrication Branch,
Division of Fuel Cycle and Material Safety, Nuclear Regulatory
Commission, Washington, D.C. 20555

clearance

INDUSTRIAL PRODUCTION • TRAVEL DEVELOPMENT • EXHIBITIONS • STATE HISTORY • FINE ARTS

Response: None.

A-43

**Final
Technical Evaluation Report
for the Proposed Revised
Reclamation Plan for the Atlas
Corporation Moab Mill**

**Source Material License No. SUA 917
Docket No. 40-3453
Atlas Corporation**

U.S. Nuclear Regulatory Commission

Office of Nuclear Material Safety and Safeguards

March 1997



EXHIBIT B

**Final
Technical Evaluation Report
for the Proposed Revised
Reclamation Plan for the Atlas
Corporation Moab Mill**

**Source Material License No. SUA 917
Docket No. 40-3453
Atlas Corporation**

U.S. Nuclear Regulatory Commission

Office of Nuclear Material Safety and Safeguards

March 1997



ABSTRACT

This final Technical Evaluation Report (TER) summarizes the U.S. Nuclear Regulatory Commission staff's review of Atlas Corporation's proposed reclamation plan for its uranium mill tailings pile near Moab, Utah. The proposed reclamation would allow Atlas to (1) reclaim the tailings pile for permanent disposal and long-term custodial care by a government agency in its current location on the Moab site, (2) prepare the site for closure, and (3) relinquish responsibility of the site after having its NRC license terminated. The NRC staff concludes that, subject to license conditions identified in the TER, the proposed reclamation plan meets the requirements identified in NRC regulations, which appear primarily in 10 CFR Part 40.

1.0 INTRODUCTION

1.1 Background

Source Material License SUA-917 for the Moab Mill is held by the Atlas Corporation (Atlas). The mill has not operated since 1984. A decommissioning¹ plan for the mill was approved by Amendment No. 3 dated November 28, 1988. Decommissioning of the mill began in 1988, and interim cover placement over the tailings disposal area began in 1989. The reclamation² plan that was prepared in 1981 and approved by NRC in 1982 was based on projected disposal capacity requirements and was designed for an ultimate crest elevation of 4076 feet. The maximum crest elevation constructed before mill operations ceased was 4058 feet, resulting in the necessity to redesign the tailings impoundment and thus revise the reclamation plan. In July 1993, NRC noticed in the Federal Register the intent to approve Atlas' revised reclamation plan and made available for public comment an environmental assessment of the effects of the proposed action. As is usual in cases where a licensee proposes revisions to an approved reclamation plan, both the NRC technical evaluation and environmental assessment only addressed the revised elements of the plan and the environmental effects of changes to the plan approved in 1982. Extensive adverse public comments were received in response to the Federal Register notice. As a result, NRC decided to reevaluate the entire reclamation plan and to prepare an Environmental Impact Statement (EIS) addressing reclamation.

This final Technical Evaluation Report (TER) documents the NRC staff review of Atlas' proposed reclamation plan and staff conclusions with respect to the appropriate regulations. The regulations governing reclamation of uranium mill tailings appear primarily in 10 CFR Part 40. Technical criteria appear in Appendix A to Part 40, which also allows licensees to propose alternatives to the specific requirements in the appendix. NRC can approve an alternative if it finds that it will achieve a level of stabilization and containment of the site, and a level of protection of public health, safety, and the environment, equivalent to, to extent practicable, the level which would be achieved by the requirements in the appendix.

A draft TER was prepared and published in January 1996 documenting the staff's initial review of Atlas' proposed reclamation plan and its conclusions with respect to the appropriate regulations. That draft TER contained 20 open issues that needed to be resolved by Atlas before NRC could conclude that the proposed action of on-site stabilization met the requirements of 10 CFR Part 40, Appendix A. In most licensing reviews, a draft TER is provided to the licensee, in lieu of an additional round of questions and requests for information, as a means to expedite the review process. While the draft TER is a publicly available document, it is not normally available for public

¹Decommissioning refers to the dismantling and disposal of the mill buildings and structures.

²Reclamation refers to the stabilization and closure of the tailings impoundment.

comment in most licensing cases. However, due to the extensive public interest and comment on the 1993 TER, NRC decided to make the Atlas draft TER available for public comment. The comments received and the staff responses to those comments, are provided in Appendix A of this document.

1.2 Site Description

1.2.1 Location and Description

The Atlas' Moab Mill site is located in Grand County, Utah. The site is located on the northwest shore of the Colorado River, 5 km (3 miles) northwest of the center of Moab (Figure 1-1). The site can be accessed from U.S. Highway 191 north of Moab. The Atlas mill site encompasses 162 hectares (400 acres) on the outside bend of the Colorado River, at the southern terminus of the Moab Canyon. The site is surrounded on the north and west sides by high sandstone cliffs. To the north and east is Moab Wash, to the east and south is the flood plain of the Colorado River, and across the river is Moab Marsh. The city of Moab is southwest of the marsh. The elevation at the mill is approximately 1130 meters (3700 feet) above mean sea level (MSL).

The mill grounds slope generally towards the Colorado River and Moab Wash. The substratum upon which the mill was constructed is composed mainly of alluvial materials brought down the Moab Canyon and Colorado River. Adjacent to the mill site on the north and west are U.S. Highway 191 and Utah Highway 279, respectively. Arches National Park is north of the site across U.S. Highway 191. The Rio Grande Railroad traverses a small section of Atlas property, just west of Highway 279, prior to entering a tunnel that emerges many kilometers down river.

1.2.2 Description of Mill Facility

The processing facility and tailings pond combined, cover approximately 81 hectares (200 acres) of an available 162 hectares (400 acres) owned by Atlas. The mill was authorized to extract uranium oxide (yellowcake) by both the acid and alkaline leach processes and was licensed for production at 850 metric tons (MT, 1,870,000 pounds) of yellowcake annually. During the life of the mill, only one tailings pond was used.

The plant site, before decommissioning, was composed of a main processing plant, a 53-hectare tailings pond, storage yards, ore receiving facilities, various process-related structures, and an office complex. These structures and facilities are enclosed by a four-strand barbed wire fence which prevents random access. All structures, including the office complex, are being razed during decommissioning of the facility.

1.2.3 Description and Characteristics of Tailings

The majority of the ore for the Atlas Mill came from the Big Indian Uranium District approximately 130 km (80 miles) to the southeast. The ore was primarily a sandstone with minor amounts of carbonate. Ore was trucked to the mill, ground to a sufficiently fine consistency to allow maximum efficient chemical reactions to occur. It was then processed through either the acid-leach circuit or the alkaline-leach circuit, both of which were used in this

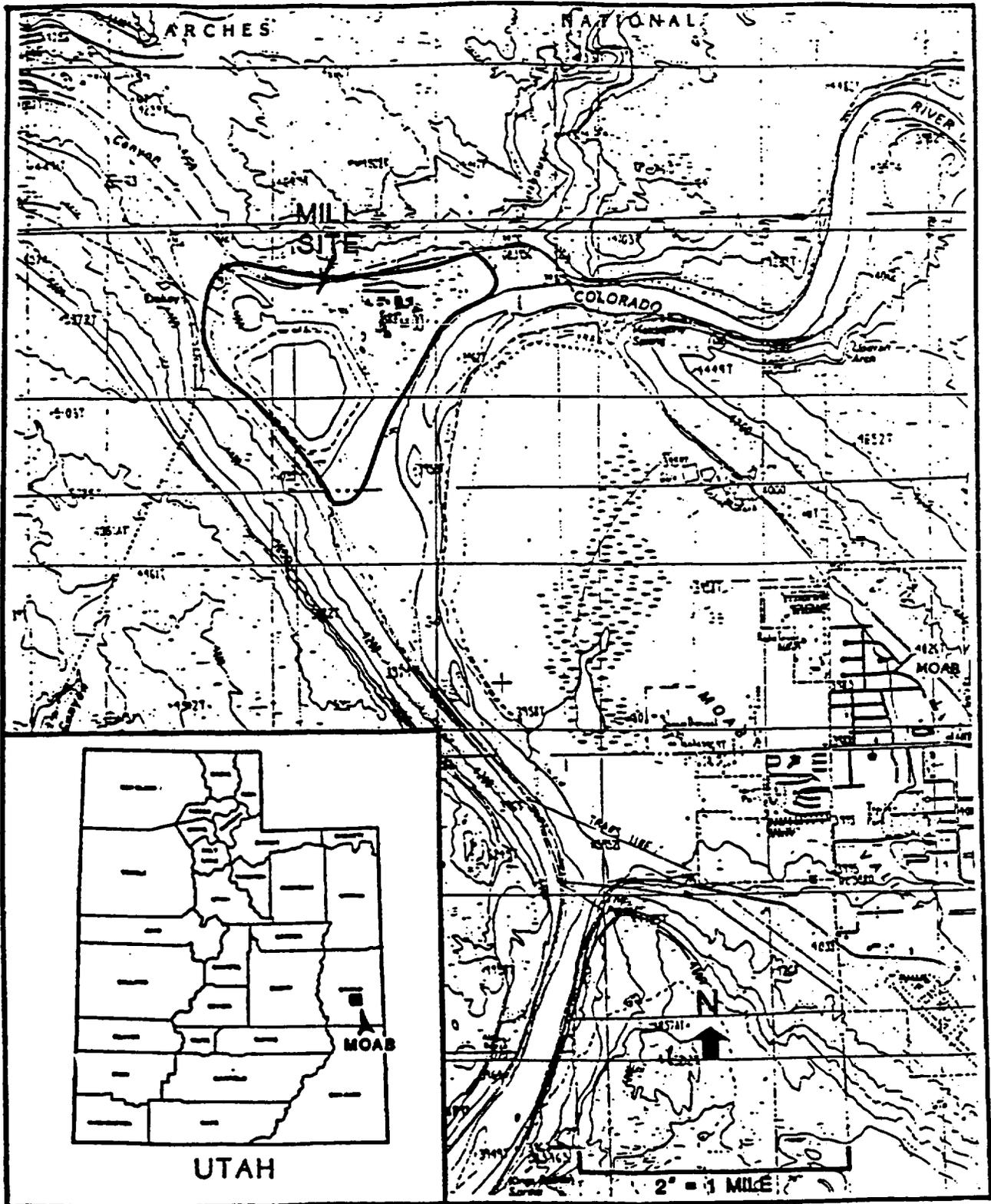


Figure 1-1: Atlas Moab Mill site

mill. Analysis of the mineral content of the ore would determine which circuit the ore would be processed through. After milling, the combined waste slurry from both circuits was pumped to the tailings impoundment.

The approximate wet weight of the tailings contained within the tailings impoundment is determined to be 9.5 million MT (10.5 million tons), with a volume of 5.7 million cubic meters (7.5 million cubic yards). The tailings basin is composed of fine tailings (slimes), coarse tailings (sand), and ore which was placed there at the end of operation of the mill as part of the interim cover. A composite analysis of the tailings by Atlas, determined that the average radium activity of the slimes was 1275 picocuries per gram (pCi/g) and that of the sands was 241 pCi/g. The activity of the ore in the tailings impoundment was determined to be 213 pCi/g radium.

1.3 Site History and Proposed Action

The Uranium Reduction Company (URC) built and began operations at the Moab Mill in October 1956. Atlas acquired URC in 1962 and operated the mill until 1984 when it was placed in stand-by status. Atlas holds NRC Source Material License SUA-917 for the Moab Mill which was changed to a possession only status on December 18, 1992.

A decommissioning plan for the mill was approved on November 28, 1988. Decommissioning of the mill began in 1988, and interim cover placement over the tailings disposal area began in 1989 and was completed in 1995.

The proposed action is approval of a reclamation plan for onsite disposal of the tailings. A reclamation plan was prepared by Atlas in 1981 and approved by NRC in 1982. This plan was based on the projected life of facility disposal capacity requirements; the disposal pile was designed for an ultimate crest elevation of 4076 feet. The maximum crest elevation constructed before the mill ceased operation was 4058 feet, resulting in the necessity to revise the reclamation plan. In accordance with 10 CFR 40, Appendix A, Atlas, by letter dated August 2, 1988, submitted a revised reclamation plan for NRC review and approval. NRC staff review of the proposed plan resulted in requests for additional information, reevaluation, and redesign. As a result, Atlas submitted a revised reclamation plan (Canonie, 1992). NRC staff review of this document resulted in a request for additional information dated March 5, 1993. Revisions to the 1992 reclamation plan were submitted by letters dated April 14, and April 23, 1993. On July 20, 1993, NRC noticed in the Federal Register its intent to approve the reclamation plan and made available for public comment an environmental assessment of the effects of the proposed action which only addressed the environmental effects of changes to the plan approved in 1982. Extensive adverse public comments were received. Major concerns and questions related to seismic and fault evaluations, the potential effects of the Colorado River and local tributaries on the stability of the disposal cell, and the need for an updated, complete environmental assessment of the entire reclamation plan, including alternative disposal locations. The comments received prompted NRC to withdraw, by Federal Register notice dated October 8, 1993, its previously noticed intent to approve the revised reclamation plan. By Federal Register notice dated March 30, 1994, NRC announced its intent to prepare an EIS.

The NRC staff review that resulted in the decision to approve the revised reclamation plan (and noticed on July 20, 1993, in the Federal Register), focused only on revisions to the previously approved reclamation plan. Due to the extensive public comments, NRC decided to reevaluate the revised reclamation plan in its entirety. This led to additional requests for information by the staff and to submittals by Atlas, in response, in January 1994, June 1994, and March 1995. The draft TER, published in January 1996, contained 20 open issues. In response to these open issues Atlas provided further submittals in February 1996, June 1996, and July 1996, and submitted a revised reclamation plan and technical specifications in October 1996, which were modified by submittals in November 1996 and December 1996. As a result, the reclamation plan reviewed by the NRC staff consists of the following documents:

1. Base Reclamation Plan of June 1992 (Canonie, 1992),
2. April 1993 Response (Canonie, 1993),
3. January 1994 Response (Canonie, 1994a),
4. June 1994 Response (Canonie, 1994b),
5. March 1995 Response (Canonie, 1995),
6. February 1996 Response (Woodward-Clyde, 1996a),
7. February 1996 Response (Smith, 1996a),
8. June 1996 Response (Smith, 1996b),
9. July 1996 Response (Woodward-Clyde, 1996b),
10. Final Reclamation Plan (Smith, 1996c), and
11. Technical Specifications (Smith, 1996d).

1.4 Review Process and TER Organization

The NRC staff review was performed in accordance with the Final Standard Review Plan (SRP)³ for the Review and Remedial Action of Inactive Mill Tailings Sites under Title I of the Uranium Mill Tailings Radiation Control Act (UMTRCA), Revision 1 (NRC, 1993) and is a comprehensive assessment of Atlas' proposed reclamation plan as documented by this TER. Appendix A to 10 CFR Part 40 contains the technical requirements for disposition of tailings and waste produced from the extraction or concentration of source material from ores. The TER is organized by the technical disciplines involved in the assessment of the reclamation plan to assure compliance with Appendix A. Each section describes the compliance with the applicable Criteria in Appendix A as it pertains to the specific discipline addressed in that section. Sections 2, 3 and 4 provide the technical basis for the NRC staff's conclusions with respect to long-term stability, Section 5 the plan's compliance with groundwater standards, and Section 6 describes radon control assessment. Section 7 provides a criterion by criterion evaluation of the reclamation plan with respect to Appendix A.

³Although the SRP is written for the UMTRCA Title I program, the applicable standards for the Title II program are similar. Division of Waste Management guidance directs the staff to use this SRP for Title II reviews to the extent practicable. All NRC licensed mill sites, including the Atlas site, are covered under the Title II program.

1.5 License Conditions

The NRC staff review of the reclamation plan identified a number of issues for which a license condition may be desirable to ensure that staff requirements are met. These items, with appropriate references to related sections of the TER, are identified in Table 1-1.

Table 1-1: License Conditions

License Condition	Section
1. Verification of Ra-226 concentration in coarse tailings	6.2.2
2. Verification of parameter values for "affected" soil	6.2.2
3. Verification of characteristics of clay for cover	6.2.3
4. Justification of radon barrier design if parameter values are not met	6.3

Draft
Environmental Impact Statement
Related to Reclamation of the
Uranium Mill Tailings at the
Atlas Site, Moab, Utah

Source Material License No. SUA 917
Docket No. 40-3453
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NUREG-1531

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ABSTRACT

This Draft Environmental Impact Statement (DEIS) has been prepared by the Nuclear Regulatory Commission (NRC), Office of Nuclear Material Safety and Safeguards, to address potential environmental impacts associated with a request by Atlas Corporation to amend its existing NRC License No. SUA-917 to reclaim an existing uranium mill tailings pile near Moab, Utah. The proposed reclamation would allow Atlas to (1) reclaim the tailings pile for permanent disposal and long-term custodial care by a government agency in its current location on the Moab site, (2) prepare the 162-ha (400-acre) Moab site for site closure, and (3) relinquish responsibility of the site after having its NRC license terminated. The DEIS describes and evaluates (1) the purpose of and need for the proposed action, (2) alternatives considered, (3) potentially affected environmental resources, (4) environmental consequences of the proposed action, and (5) costs and benefits associated with reclamation alternatives. Public and agency comments on this DEIS will be considered in the Final Environmental Impact Statement.

SUMMARY AND CONCLUSIONS

This Draft Environmental Impact Statement (DEIS) has been prepared under the direction of the staff of the U.S. Nuclear Regulatory Commission (NRC) and issued by the Commission's Office of Nuclear Material Safety and Safeguards (NMSS). The National Park Service is a Cooperating Agency.

1. This action is administrative, involving a licensing decision in response to a license amendment request from Atlas Corporation, Denver, Colorado. Atlas proposes to reclaim an existing uranium mill tailings pile on the Atlas site near Moab, Utah, and has requested an amendment of its existing NRC License No. SUA-917 to allow this reclamation. The Atlas mill no longer operates and is currently being dismantled, and the nearby 9.52-million-metric-ton (10.5-million-ton), 52.6-ha (130-acre), uranium mill tailings pile needs to be stabilized for long-term disposal. The license amendment requested by Atlas would allow Atlas to (1) reclaim the tailings pile for permanent disposal and long-term custodial care by a government agency in its current location on the Moab site, (2) prepare the 162-ha (400-acre) Moab site for site closure, and (3) depart the site after having its NRC license terminated.

Under the Atlas proposal, the side slopes of the pile would be reduced to 30% [i.e., 0.9 m (3 ft) vertical per 3 m (10 ft) horizontal] or less to minimize effects of erosion and possible earthquakes. Also, an earth and rock cover system would be installed over the pile to minimize radon escape, infiltration of rain water into the tailings, infiltration of tailings contaminants into groundwater, and tailings erosion potentially caused by surface runoff and flooding of the Colorado River and a nearby ephemeral stream known as Moab Wash. Earth and cover materials would likely be obtained from several possible borrow sites, including two sites for crushed bedrock in Castle Valley, an area for rounded cobble in Spanish Valley southeast of Moab, and an area for clay near the Canyonlands Airport northwest of Moab.

This DEIS also considers the alternative of transporting the Atlas tailings to an alternate site for permanent disposal. Potential impacts of the alternative of tailings transport by rail and disposal at the Plateau site, about 29 km (18 miles) northwest of Moab, are considered in detail, and other alternate sites are briefly identified.

2. Concerns and alternatives are addressed in this DEIS, and additional public and agency comments will be considered in the Final Environmental Impact Statement (FEIS). NRC has also prepared a draft Technical Evaluation Report (TER) that evaluates the technical adequacy of Atlas's proposed design for tailings pile reclamation. Thus, the draft TER focuses on engineering aspects of the Atlas proposal and its compliance with Appendix A to 10 CFR Part 40, whereas this DEIS focuses on the environmental aspects. The draft TER is also being made available for public comment.
3. Concerns receiving special attention are summarized in Section 1.5, "Scoping Results and Scope of this Environmental Impact Statement." The concerns were expressed by the public and several local, state, and federal agencies. The major categories of concern were that
 - a. Reclamation of tailings should be consistent with NRC policy and regulations and prior NRC actions involving tailings reclamation, and should provide maximum protection of public health and the environment;

- b. The chemical and physical composition of the tailings should be well described;
 - c. Over the long term, earthquakes and the frequent flushing of the tailings base by flood waters could compromise pile stability;
 - d. The environmental impact statement (EIS) should provide a comprehensive technical and cost-benefit analysis of alternatives, including the use of the best and most recent information;
 - e. Tailings should be transported to an alternate site for permanent disposal, to protect the Moab area and to allow future commercial use of the Atlas site;
 - f. Tailings leachates enter the groundwater and the Colorado River, having an adverse impact on water quality and aquatic biota;
 - g. The tailings pile would impact recreation, tourism, and the local economy; and
 - h. A failure of the tailings pile would impact the Colorado River, resulting in contamination and impacts on the environment and downstream water users.
4. For the reclamation of tailings, the following alternatives are considered:
- a. Alternative of no action: This alternative—under which Atlas would cease operations involving environmental control of the tailings, and NRC would make no licensing decision—is not legally or environmentally acceptable;
 - b. The Atlas proposal (i.e., reclamation for permanent disposal on the Atlas site);
 - c. Disposal of the tailings at an alternate site, including consideration of
 - the Plateau site as the primary alternate site, with tailings transport by rail, and
 - tailings transport alternatives (rail, truck, slurry pipeline).
5. Based on the evaluations in this DEIS, if a license amendment approves tailings reclamation on the Atlas site, the licensee will be required to conform to the following conditions in addition to any requirements in the TER:
- a. A plan to minimize emissions of fugitive dust during reclamation shall be submitted for NRC approval (Section 4.1.3);
 - b. A spill prevention and control plan and an erosion control plan applicable to the Atlas site and borrow areas shall be submitted for NRC approval (Section 4.5.4); and
 - c. A borrow transport plan shall be submitted for NRC approval to minimize impacts on socioeconomics and recreation (Section 4.7.1.3).
6. The potential environmental consequences of the Atlas proposal and the Plateau site alternative are summarized below. The summary includes consideration of a hypothetical, maximum tailings pile failure in which 20% of the tailings pile enters the Colorado River during a hypothetical flood. However, the tailings pile would not be expected to fail because it would be designed to withstand earthquake and flooding conditions anticipated at the Atlas site.
- a. Fugitive dust and vehicle emissions would add to existing levels of air pollutants in the region, which are in compliance with national ambient air quality standards (NAAQS). Fugitive dust during reclamation would not be expected to cause exceedances of NAAQS. No other source of air pollutants has been identified that would cause a significant impact in combination with the Atlas proposal or the Plateau site alternative. Long-term releases of air pollutants after reclamation at either the Atlas site or Plateau site would be very small and would not cause exceedance of air quality standards.

- b. No long-term land use change would result from the Atlas proposal, with the exception of several acres in Castle Valley that may be converted to quarries to supply rock riprap. Because the tailings pile would continue to occupy a portion of the Atlas site under the Atlas proposal, future commercial use of roughly half of the site would be precluded. The Plateau site alternative would allow unrestricted use of the entire Atlas site after completion of reclamation. The Plateau site alternative would also result in the loss of an area of a few hundred acres of grazing land, which is a very small fraction of the extensive lands available for grazing in the region. The deposition of tailings onto downstream lands after the hypothetical tailings pile failure would add to any existing level of contamination that may have resulted from deposition of existing contaminants in the river during previous floods. The increase in contamination should be too slight to have any appreciable long-term impact on land uses along the river.
- c. The increased use of water during reclamation under the Atlas proposal or the Plateau site alternative could cause a slight increase in the total groundwater use in the Moab area. Although groundwater consumption in the Moab area has gradually increased over the years, shortages have not occurred and are not expected. If tailings reclamation were done at the Atlas site, tailings leachates would continue to enter the alluvial aquifer at the Atlas site. No significant use of groundwater from this aquifer in the vicinity of Moab is anticipated in the foreseeable future. Under the Plateau site alternative, tailings leachates would no longer enter the alluvial aquifer at the Atlas site. No impact to groundwater would be anticipated at the Plateau site, because a clay liner would be installed beneath the tailings, and no viable supply of groundwater has been identified there.
- d. Any hydrological impact associated with the tailings reclamation at the Atlas site or the Plateau site would be negligible. Some surface water for dust control would be obtained from a contractor or the city of Moab. No water use would occur for the Atlas proposal or the Plateau site alternative after reclamation is completed. Several additional acres (e.g., 1.2 ha or 3 acres) of 100-year floodplain would be occupied by the tailings pile as a result of tailings reclamation on the Atlas site; this use of floodplain would have negligible hydrologic impact, although a permit from the U.S. Corps of Engineers would be required. Most floodplain in the area has been protected by the establishment of the Moab Marsh Preserve. No floodplain is present at the Plateau site.
- e. Surface runoff associated with operations under both the Atlas proposal and Plateau site alternative could temporarily add to existing levels of impacts on surface water quality in the Colorado River. With adequate controls, this cumulative, temporary impact would be expected to be negligible. After reclamation under the Atlas proposal, tailings leachates would continue to enter the Colorado River and have a small, generally undetectable impact on surface water quality. The greatest potential for impact would occur during periods of low flow in the river when the tailings contribution to flow would be fractionally larger than during high flows. At the Plateau site, a clay liner beneath the tailings would restrict the escape of tailings leachates, thus preventing impacts to a nearby ephemeral wash and the Colorado River, which is far downstream. The hypothetical tailings pile failure at the Atlas site would have a relatively large, short-term impact (e.g., several weeks) and a small, long-term impact on water quality, which would likely be undetectable after a short time period (e.g., months to several years) after the failure. Over the long term, the tailings contaminants would be virtually completely dominated by the large amount of existing contaminants continually transported by the river.

- f. Aquatic biota would be affected by any changes in surface water quality resulting from the Atlas proposal or the Plateau site alternative. During reclamation operations, erosion control measures would be applied to prevent the occurrence of appreciable impact. After reclamation under the Atlas proposal, tailings leachates would continue to add slightly to existing contaminants in the river, potentially having a minor impact on aquatic biota. The Plateau site alternative would eliminate the potential for impact on aquatic biota. The hypothetical tailings pile failure should have negligible impact on water quality and aquatic biota.
- g. A small loss (e.g., 2 ha or 5 acres) of terrestrial habitat at the Atlas site would occur under the Atlas proposal, and habitats at borrow areas would be temporarily disturbed. A portion of this habitat is tamarisk wetland, which is of limited importance to wetland wildlife. The Plateau site alternative would result in the loss of a few hundred acres of sparse vegetation that supports low numbers of wildlife. No threatened or endangered plant or animal is likely to be affected under either the Atlas proposal or Plateau site alternative. No reduction in habitat or wildlife populations numbers would be anticipated in the event of the hypothetical tailings pile failure.
- h. Reclamation of the tailings pile at either the existing Atlas site or the Plateau site would result in a slight, short-term increase in employment and population in the Moab area. This increase could add slightly to the effects of the increased population in the area during the primary tourist season. However, the Moab area should be able to absorb the increased population with no significant adverse impact. No impact on historic or cultural resources is anticipated under either alternative. The transport of borrow material by truck would add to existing traffic, have some adverse and beneficial impacts on business in Moab, and increase the potential for traffic accidents. Under the Plateau site alternative, the 7 to 12 years of moving the tailings pile and contaminated soils by rail could create a temporary adverse aesthetic impact. Because truck transport of borrow material (Atlas proposal) and mill debris (Plateau site alternative) in the Moab area would be relatively short term and would be conducted primarily during the winter season, truck traffic associated with the Atlas proposal or Plateau site alternative would not be expected to produce a significant impact. The hypothetical tailings pile failure would cause some temporary economic impact. Because of a lack of impact on water quality, tailings pile failure would not be expected to produce a significant economic impact related to surface water use.
- i. Doses to the maximally exposed individual (a resident adjacent to the Atlas site) and to the surrounding population were estimated based on computer modeling results and on actual measurements at the Atlas tailings pile and at other tailings piles. Impacts during reclamation of the tailings pile would be dominated by radon daughters (86%) rather than particulates (14%). After reclamation, essentially no release of radioactive particulates would occur, and radon releases would be reduced to less than the NRC limit of 0.74 Bq/m³/s (20 pCi/m³/s). Dose to the maximally exposed individual from particulates and radon daughters during reclamation would be an estimated 0.78 mSv/yr (78 mrem/yr), which is below the NRC limit of 1 mSv/yr (100 mrem/yr). During reclamation, the total annual dose to the Moab population would be less than 0.052 person Sv (5.2 person rem) compared to a total natural background dose of about 18 person Sv (1800 person rem). After reclamation the doses to the maximally exposed individual and the Moab population would be 0.02 mSv/yr (2.0 mrem/yr) and 8×10^{-4} person Sv per year (0.08 person rem per year), respectively. Under expected working conditions, doses to reclamation workers on the tailings pile would be expected to be less than 0.01 Sv/yr (1 rem/yr). For the Plateau site alternative, annual doses during removal of the

tailings would be about the same as the reclamation doses for the Atlas proposal, but the doses would last up to 7 years longer. A risk analysis conducted for transport of the tailings by rail to the Plateau site indicated that no acute fatalities would occur and that the number of latent cancer fatalities would not exceed 6.44×10^{-5} for the railroad crew or 1.50×10^{-4} for the general public.

- j. The analysis of costs and benefits associated with reclamation alternatives indicates that the Atlas proposal would cost significantly less (\$11 to \$17 million) than would the Plateau site alternative (\$60 to \$110 million). Both options would result in benefits from releasing land at the Atlas site for unrestricted use.
7. Based on the evaluations in this DEIS, the NRC staff's preliminary conclusion is that the Atlas proposal (i.e., reclamation for permanent disposal on the Atlas site), with the conditions identified in item 5, is acceptable with respect to environmental costs and benefits.

1. PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

1.1.1 The Federal Proposed Action

This Draft Environmental Impact Statement (DEIS) has been prepared in support of a Federal licensing decision to be made by the U.S. Nuclear Regulatory Commission (NRC), in accordance with the National Environmental Policy Act of 1969 (NEPA). The decision is whether or not to approve Atlas Corporation's request for a license amendment approving its proposed reclamation plan for on-site disposal of uranium mill tailings on the Atlas site near Moab, Utah. The decision will be made after completion of the Final Environmental Impact Statement (FEIS), which will provide an environmental evaluation of the Atlas proposal and alternatives to the Atlas proposal. NRC has prepared a draft Technical Evaluation Report (TER) that evaluates the technical adequacy of Atlas's proposed design for tailings pile reclamation (NRC 1996). The draft TER focuses on engineering aspects of Atlas's proposal, whereas this DEIS focuses on the environmental issues. The draft TER will be made available for public comment. Atlas Corporation's request is hereafter referred to as the Atlas proposal. In the preparation of this DEIS, NRC is the lead agency, while the National Park Service (NPS) is a cooperating agency.

1.1.2 The Atlas Proposal

Atlas Corporation (Atlas) has applied to the NRC for an amendment to its existing NRC License No. SUA-917 covering the Atlas uranium mill and associated activities at the Atlas site located along the Colorado River near Moab, Utah (Fig. 1.1-1). The mill no longer operates and is currently being dismantled. The nearby 9.5-million-metric-ton (10.5-million-ton), 52.6-ha (130-acre), uranium mill tailings pile needs to be reclaimed for long-term disposal. The license amendment requested by Atlas would allow Atlas to (1) reclaim (stabilize) the tailings pile for permanent disposal in its current location on the Moab site; (2) discontinue its responsibility for the tailings, which would then be under long-term custodial care by a government agency—probably the U.S. Department of Energy (DOE); and (3) prepare the 162-ha (400-acre) site for site closure. Atlas has submitted to NRC detailed tailings reclamation plans and environmental data in support of its amendment request. In accordance with Federal regulations, NRC must determine whether or not the Atlas proposal would comply with the requirements of Appendix A of 10 CFR Part 40 as discussed in Section 1.4 of this DEIS.

Under the Atlas proposal to reclaim the tailings pile in its current location, the side slopes of the pile would be reduced to 30% [i.e., 0.9 m (3 ft) vertical per 3 m (10 ft) horizontal] or less to minimize effects of erosion and possible earthquakes. Also, an earth and rock cover system would be installed over the pile to minimize radon escape, infiltration of rain water into the tailings, infiltration of tailings contaminants into groundwater, and tailings erosion potentially caused by surface runoff and flooding of the Colorado River and a nearby ephemeral channel known as Moab Wash. Earth and cover materials would likely be obtained from several possible borrow sites (Plateau site, cobble area, and bedrock area shown in Fig. 1.1-1).

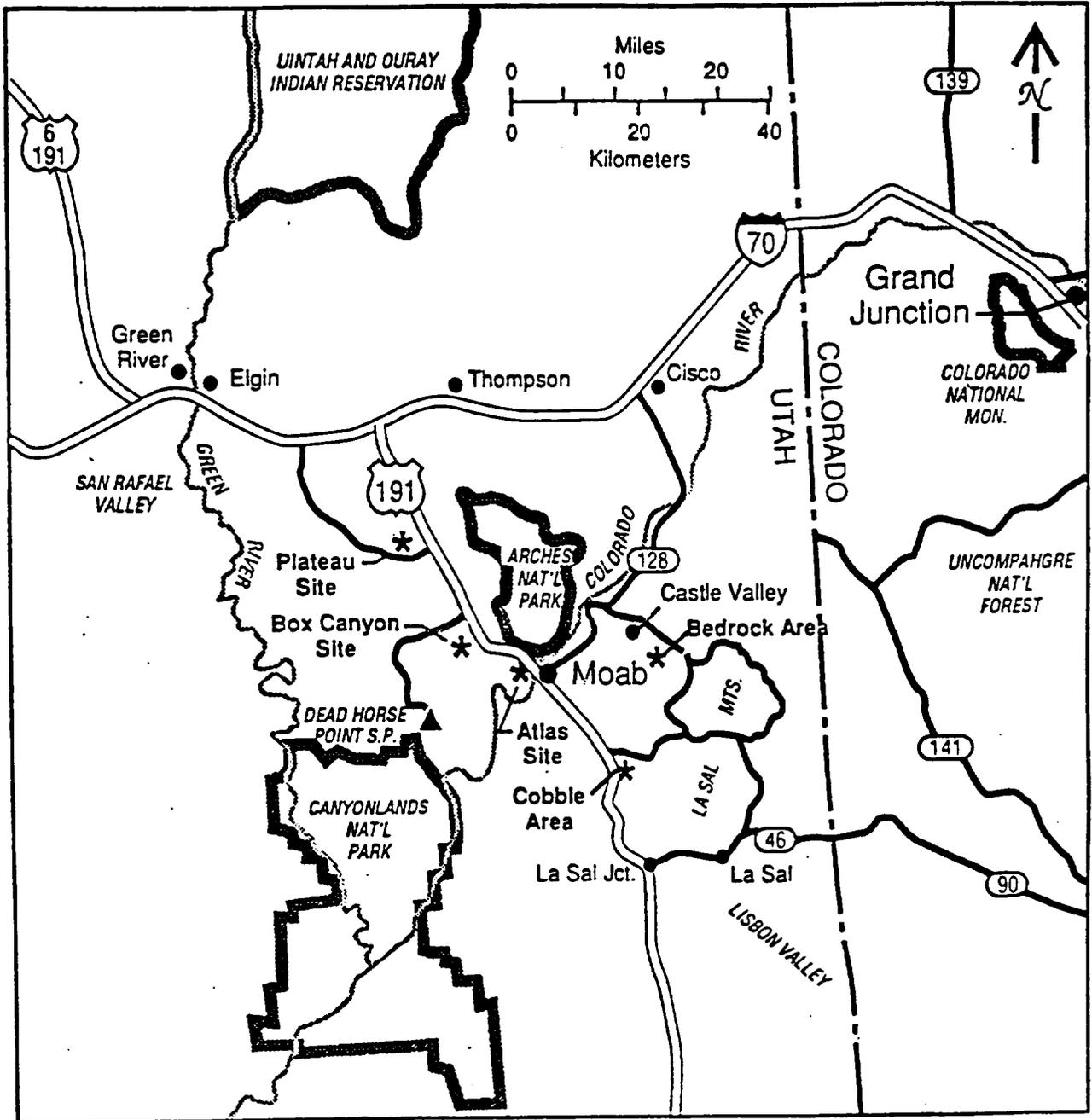


Figure 1.1-1. Regional Location of the Atlas Corporation Site Near Moab, Utah.

1.1.3 Alternatives

Disposal of tailings at the Moab site has become an issue, primarily because the site is on the Colorado River floodplain and is near the town of Moab and Arches National Park. In 1979, when the FEIS for the operation of the Moab Uranium Mill was published (NRC 1979), the majority of agency and public comments supported the continued operation of the mill, and disposal of the tailings at an alternate site was not an issue (Appendix A in NRC 1979). During the scoping process (Section 1.5) for this DEIS, however, several government agencies and members of the public proposed that the tailings be transported to an alternate site for disposal. Several possible alternate sites were identified during scoping and subsequent discussions with agencies and individuals. At this environmental stage in the licensing process, NRC will not select a specific alternate site and determine that the tailings must be moved to this site. Rather, NRC is focused on determining whether the Atlas proposal is acceptable and whether the Atlas site is environmentally acceptable for tailings disposal. To support this determination, this DEIS compares the Atlas proposal with an alternative of tailings disposal at one of the best, if not the best, alternate sites identified to date. This alternative was selected based on the scoping process for this DEIS, discussions with other agencies and individuals, an NRC site visit, and other information. This alternative involves transport of the tailings by rail to the Plateau site located approximately 29 km (18 miles) northwest of the town of Moab (Fig. 1.1-1).

Under the no-action alternative, NRC would make no licensing decision, and Atlas would cease operations involving management of the tailings. Because this alternative would not comply with regulations and is not environmentally acceptable, it is not evaluated in detail in this DEIS.

1.2 PURPOSE AND NEED FOR ACTION

In accordance with the Uranium Mill Tailings Radiation Control Act of 1978, as amended (Pub. L. 95-604) and with NRC regulations (Section 1.4), NRC is required to act upon the license amendment request from Atlas Corporation. The purpose of NRC's licensing action is to determine whether Atlas has acceptably demonstrated that its proposal meets the requirements of Appendix A to 10 CFR Part 40 and whether the Moab site is environmentally acceptable for tailings disposal.

The Atlas uranium mill ceased operations in 1984 and is being dismantled. The tailings must be reclaimed adequately for long-term stability. Escape of hazardous substances into the surrounding environs must be minimized to the extent feasible. To abandon the tailings pile at this time with no further environmental control (i.e., the no-action alternative) is not legally or environmentally acceptable.

The mill tailings pile contains high-volume, low-activity materials and elements that could be hazardous to the environment and public health. These substances are currently escaping the tailings pile at low rates. Tailings leachates are slowly diffusing downward into groundwater, some of which moves horizontally and enters the Colorado River. Radioactive radon gas slowly escapes

the tailings pile and enters the air, and strong winds may blow tailings dust into the air although an interim cover has been placed on the tailings. To minimize environmental contamination, Atlas has conducted a number of environmental control and corrective action programs, and additional environmental protection measures are needed for long-term tailings disposal.

The purpose of the tailings-reclamation action (either the Atlas proposal or an alternative action) considered by this DEIS is to minimize the potential for environmental and public health impact posed by the existing tailings pile. This purpose can be satisfied only by appropriate reclamation of the tailings pile, either at the Moab site or an alternate site.

1.3 HISTORY AND CURRENT STATUS OF THE MOAB MILL FACILITY AND OPERATIONS

The Atlas Moab Mill is located on the west bank of the Colorado River about 4.8 km (3 miles) northwest of Moab. The property and facilities were originally owned by the Uranium Reduction Company that was acquired by Atlas Corporation in 1962. Atlas owns approximately 162 ha (400 acres) including the approximately 81 ha (200 acres) on which the mill and tailings are located. Atlas activities at the Moab Mill site are covered by the NRC Source Material License SUA-917, which was renewed in 1988. The mill ceased ore milling operations in 1984. The principal Atlas and NRC documents supporting the source material license are listed in Appendix B.

Initial tailings pond construction was completed in 1956, and with the exceptions of brief periods, tailings were disposed in the pond continuously from initial start-up in October 1956 until the mill ceased operating and was placed on standby status in 1984. The tailings pile has been maintained since that date under various conditions of the Atlas Source Material License. The pile has five embankments that were raised to the present elevation of 1237 m (4058 ft) above mean sea level (amsl) after the 1979 license renewal. A 5.5-m (18-ft) raise in embankment elevation to a projected final elevation of 1242 m (4076 ft) was reviewed and approved under License Amendment No. 7 dated June 30, 1982. However, the embankment raise was never initiated, because the added capacity was not needed when the mill subsequently entered a long-term shutdown status.

During early operations, Atlas utilized an acid leach process for uranium milling. During this period, lime was added to the mill tailings to help neutralize the tailings. In 1961, an alkaline leach process was initiated. In 1967, a new acid leach circuit was installed and, for a period of time, both the acid circuit and an alkaline circuit were operated. From 1982 through 1984, only an acid leach process was used with no neutralization of process water because a recycle process was in use.

The 1982-84 phase of operations appears to have resulted in increased metals mobilization as a result of the lower pH of the water and tailings associated with the acid leach circuit. As a result

of the increased groundwater contamination, NRC required Atlas to initiate a compliance monitoring and corrective action program by July 1990. A revised program was prepared by Atlas and found acceptable with modification. The program was made mandatory by license conditions 17 and 55. The program included the establishment of groundwater quality standards, point-of-compliance wells, a background well, sampling frequency, groundwater sampling points, selected constituents for which the groundwater was to be analyzed, and enhanced drying of the tailings. Wells were drilled into the tailings to pump water to an evaporation pond on the top of the tailings pile. Pumping ceased in early 1994 because of lack of water in the tailings. The projected date for completion of all groundwater corrective actions is December 1998, as specified in license condition no. 55.

To collect water draining from the embankments, two sump pits were excavated in the 1980s, one on the northeast side of the pile and the other at the south end of the pile. Pumps were installed to collect the seepage water and pump it to an evaporation pond on top of the tailings pile. Water has not collected in the pits for several years, and the pumps were subsequently removed. NRC amended Atlas's license to allow disposal of radioactive contaminated solid waste in the south sump pit.

Atlas has conducted cleanup of windblown tailings and other contaminated soils in several areas on the site. These areas were along the west side of state highway 279, between the tailings pile and the highway, an area northwest of the tailings pile, and an area of about 2.8 ha (7 acres) southeast of the tailings pile. Cleanup involved excavating the windblown tailings and contaminated soils and placing them on the tailings pile.

1.4 FEDERAL AND STATE AUTHORITIES, REGULATIONS, AND PERMITS

Title II of the Uranium Mill Tailings Radiation Control Act of 1978, as amended, authorized the NRC to enforce decontamination, decommissioning, and reclamation standards on new licenses or relicensing actions for uranium mill and mill tailings sites. NRC regulations in Appendix A to 10 CFR Part 40 establish criteria for the technical aspects, finance, ownership, and long-term site surveillance relating to the siting, operation, decontamination, decommissioning, and reclamation of uranium milling facilities. Each site-specific licensing decision is to be based on the criteria, taking into account public health and safety and the environment. A summary list of the criteria is provided in Appendix C of this DEIS.

Flexibility is provided in the criteria to allow achievement of an optimum tailings disposal program on a site-specific basis. Licensees may propose alternatives to the criteria, but protection of the public must be equivalent to or better than that required by the existing criteria. NRC licensing decisions that would require certain more costly reclamation practices to minimize environmental impacts or meet "reasonably achievable" criteria must consider the state of the technology and the economic costs compared to the benefits.

In the case of the Atlas proposal for tailings reclamation at the Moab site, NRC staff review the licensee's proposed design and cover materials for the reclaimed tailings pile and independently determine whether the licensee has acceptably demonstrated that its proposal would meet the applicable criteria. Current NRC independent reviews of reclamation designs and materials in terms of the Appendix A criteria are detailed in the draft TER for the Moab site. Regulations state that NRC will approve a reclamation plan proposed by a licensee if the NRC-evaluation documented in the draft TER demonstrates compliance with the Appendix A criteria.

As part of compliance with Appendix A of 10 CFR Part 40, the licensee may propose alternate concentration limits (ACLs) as groundwater protection standards that present no significant hazard to the environment and public health. NRC regulations state that an ACL will be approved if NRC, after considering practicable corrective actions, determines that the proposed ACL is as low as reasonably achievable and that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the ACL is not exceeded. Before approving ACLs, NRC must consider numerous factors that are listed in Appendix A to 10 CFR Part 40.

The Atlas proposal would require a number of permits, licenses, or approvals from various agencies in addition to the NRC (listed in Table 1.4-1).

NRC regulations in 10 CFR Part 20 Subpart D specify radiation dose limits for individual members of the public during reclamation. No unrestricted area may have a radiation level that would result in a dose from external sources to an individual exceeding 0.02 mSv (0.002 rem) in an hour, 0.5 mSv (0.05 rem) in a year, or a total effective dose equivalent of 1 mSv (0.10 rem) in a year. The licensee is required to perform monitoring or calculations needed to demonstrate compliance.

The Utah Department of Environmental Quality has jurisdiction concurrent with NRC over non-radiological groundwater constituents.

1.5 SCOPING RESULTS AND SCOPE OF THIS ENVIRONMENTAL IMPACT STATEMENT

1.5.1 The Scoping Process and Results

In July 1993, NRC staff issued an environmental assessment (EA) evaluating the licensee's revised reclamation plan for on-site disposal of mill tailings. Also in July 1993, the NRC published a finding of no significant impact (FONSI) in the *Federal Register* in anticipation of approving the revised reclamation plan. NRC received more than 20 letters opposing the proposed action and wanting additional evaluation and consideration of issues. As a result, NRC rescinded the FONSI by a *Federal Register* notice in October 1993, decided to prepare an Environmental Impact Statement (EIS), and requested additional information from Atlas to support NRC's technical and environmental evaluation of the Atlas proposal.

Table 1.4-1. Applicable Permits, Licenses, and Approvals

Permits, licenses, or approvals	Granting or approving authority	Status
Approval for disposal of nonradiological demolition solid wastes (i.e., roofing, lumber, blocks, brick, metal, etc.)	State of Utah and local authority	Approvals will be pursued upon identification of waste types, estimated quantities, and disposal site selection
Approval for disposal of domestic or municipal-type solid wastes (i.e., paper, garbage, glass, etc.)	State of Utah and local authority	Approvals to be obtained
Approval for disposal of miscellaneous nonradiological "hazardous" and/or "problem" solid waste (i.e., oils, grease, solvents, polychlorinated biphenyls, caustics, etc.)	Environmental Protection Agency (EPA), State, and/or local authority	Approvals will be pursued upon identification of waste types, estimated quantities, and disposal site selection
Section 404 (dredge and fill permit)	U.S. Army Corps of Engineers	To be obtained
401 Certification (dredge and fill permit)	State of Utah	Undetermined at present
Approval for excavation of borrow materials	State of Utah	Undetermined at present
Historical clearance	State Historic Preservation Officer	Clearance to be secured
	Advisory Council on Historic Preservation	Need not expected
Threatened and endangered species consultation	U.S. Fish and Wildlife Service (Department of Interior)	Biological Assessment submitted; consultation continuing
National Pollution Discharge Elimination System permit	EPA Region VIII	Permit application will be submitted, if applicable, following finalization of design and mitigation plans
Approval of plans and specifications for water pollution control facilities	Utah Department of Environmental Quality	To be submitted as applicable following finalization of design and mitigation plans

The scoping process for this DEIS was conducted in accordance with 10 CFR Part 51, which contains the NRC requirements for implementing the regulations of the Council on Environmental Quality (CEQ) under NEPA. On March 30, 1994, the NRC published in the *Federal Register* (59 FR 14912) a notice of intent (NOI) to prepare an EIS for the proposed reclamation of tailings and to conduct scoping for the EIS. The alternatives identified in the NOI were (1) on-site reclamation (the licensee's proposal), (2) off-site disposal at an alternate site, and (3) no action. A public scoping meeting was held at Starr Hall in Moab, Utah, on April 14, 1994. About 43 people (not including people who represented government agencies) attended the meeting, and 8 persons gave oral comments. The NRC also invited the public and interested agencies, organizations, and individuals to submit their written suggestions and comments by May 13, 1994, for consideration in the EIS process.

A brief summary of the scoping results is provided here, and a more detailed summary is presented in Appendix D. Several commenters stated that the licensee's proposed reclamation plans for the tailings were inadequate and that reclamation at the Moab site would be inconsistent with NRC policy provided in Appendix A to 10 CFR Part 40. Major issues raised in the scoping process included effects of flooding and earthquakes on the tailings pile, possible pile failure resulting in the spilling of tailings into the Colorado River and impacts on downstream water use, leaching of tailings contaminants into groundwater and the river, transport of rock riprap from Castle Valley, and impacts on tourism and the local economy.

Most commenters wanted the tailings transported to an alternate site and the Moab site cleaned up to allow future commercial use of the site. The alternative favored by the commenters was transport of the tailings by rail and disposal at the Plateau site about 29 km (18 miles) northwest of Moab. Many commenters wanted a thorough cost-benefit comparison of alternatives and the Atlas proposal. Upon completion of the scoping process NRC determined that the EIS would consider all of the environmental and socioeconomic issues raised during the scoping period, although some issues would receive more extensive treatment than others because of their complexity or importance. NRC also indicated determined that the issues of tailings pile stability and safety would be addressed primarily in the TER rather than in this DEIS.

1.5.2 Scope of this Environmental Impact Statement

This DEIS focuses on the potential environmental impacts and environmental suitability of tailings disposal (with subsequent site closure) at the Moab site and an alternate site, whereas the adequacy and safety of Atlas's proposed design of the tailings pile is addressed in the draft TER (NRC 1996). This DEIS has been prepared in compliance with NEPA, the CEQ regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and NRC's NEPA regulations (10 CFR Part 51). This DEIS is being made available to agencies and the public, whose comments will be considered in the FEIS.

This DEIS compares in detail the Atlas proposal with the alternative of tailings disposal at an alternate site (the Plateau site). Other alternate sites are analyzed in less detail. However, the selection of an alternate site for actual disposal of the Atlas tailings is not within the scope of this

DEIS. Should NRC not approve the Atlas proposed on-site reclamation plan, additional environmental evaluation would be required for any alternate plan.

Neither the Atlas proposal nor the alternative of tailings disposal at the Plateau site has an approved cover design. Each cover would be designed and evaluated based on appropriate parameters applicable to the top 3 m (10 ft) of tailings being covered, and such that all pertinent design criteria would be satisfied. For instance, the cover would have to restrict the flux of radon gas from the tailings to no more than 20 picocuries per square meter per second such that the protection of the public was not compromised. Minor differences in preliminary cover design appearing in this DEIS would be completely resolved prior to approval of the final design and before construction. The evaluation of environmental impacts presented in this DEIS has been performed such that they would not be contradicted by minor changes engineered into the final design of either cover. Any cost differences would not be expected to be significant in relation to the total costs.



DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF RADIATION CONTROL

Michael O. Leavitt
Governor

Dianne R. Nielson, Ph.D.
Executive Director

William J. Sinclair
Director

168 North 1950 West
P.O. Box 144850
Salt Lake City, Utah 84114-4850
(801) 536-4250 Voice
(801) 533-4097 Fax
(801) 536-4414 T.D.D.

Certified Mail
(return receipt requested)

September 12, 1996

Mr. Richard E. Blubaugh
Vice President Environmental
and Governmental Affairs
Republic Plaza
370 Seventeenth Street, Suite 3050
Denver, CO 80202

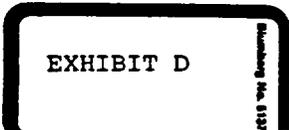
Re: Atlas Uranium Mill Tailings Pile and Reclamation Near Moab, Utah: Notice for
Submittal of Ground Water Contaminant Investigation Report and Corrective
Action Plan.

Dear Mr. Blubaugh:

The purpose of this letter is to notify Atlas Corporation of the Executive Secretary's decision to require the submittal of a Ground Water Contaminant Investigation Report and Corrective Action Plan for Atlas uranium mill and tailings, near Moab, Utah.

As you are aware, for more than a year now the Utah Department of Environmental Quality (DEQ) has entered into discussions with the U.S. Nuclear Regulatory Commission (NRC) in an attempt to coordinate State requirements found in the Utah Ground Water Quality Protection (GWQP) Regulations (Utah Administrative Code [UAC] R317-6) with NRC licensing efforts currently underway for the reclamation of the Atlas mill site and uranium tailings pile near Moab, Utah. The purpose of these activities was to avoid a dual regulatory situation for the Atlas cleanup and satisfy State rules thru mutual cooperation with the NRC. As you are already aware, the State's regulatory authority over uranium mill tailings is limited to their non-radiologic contaminants, pursuant to the U.S. Atomic Energy Act of 1954.

We regret to inform you that the NRC has determined that they are unable to accommodate the state concerns under their process. Consequently, we will exercise State authority to independently regulate ground and surface water quality for non-radiologic contaminants at the Atlas uranium mill site and tailings pile.



Mr. Richard E. Blubaugh
September 6, 1996
Page 2

As we explained in our meeting of June 4, 1996, this will ultimately include issuance of a Ground Water Corrective Action (GWCA) Order pursuant to State GWQP Regulations (UAC R317-6-6.15). However, prerequisite to this Order, the GWQP Regulations provide the Executive Secretary authority to require Atlas to submit a Ground Water Contaminant Investigation and Corrective Action Plan for review and approval (UAC R317-6-6.15.C.1).

The objective of this letter is to explain the application of the contaminant investigation and corrective action requirements process, provide formal notice that a contaminant investigation report is required, and list the informational items needed in both an investigation report and corrective action plan.

Application of Ground Water Corrective Action Requirements

Under State GWQP Regulations (UAC R317-6-6.15.A), the ground water corrective action provisions apply to:

"... any person who discharges pollutants into ground water in violation of Section 19-5-107, or who places or causes to be placed any wastes in a location where there is probable cause to believe they will cause pollution of ground water in violation of Section 19-5-107."

Section 19-5-107 of the Utah Code Annotated (UCA) further provides that:

"... it is unlawful for any person to discharge a pollutant into waters of the state or to cause pollution which constitutes a menace to public health and welfare, or is harmful to wildlife, fish, or aquatic life, or impairs domestic, agricultural, industrial, recreational, or other beneficial uses of water, or to place or cause to be placed any wastes in a location where there is probable cause to believe it will cause pollution."

Based on our review of available information we have determined that the Atlas tailings pile has discharged non-radiological pollutants into nearby ground water in violation of Utah GWQP Regulations (UAC R317-6-6.15.A) and Utah Code Annotated (Section 19-5-107). Said discharge to groundwater may in turn also cause discharge of pollutants to the nearby Colorado River, in violation of UCA Section 19-5-107. This determination is based on the following findings:

1. Tailings Leachate Water Quality Results - review of NRC water quality samples collected in 1987 at your facility shows 13 separate non-radiologic contaminants existed in the tailings leachate at concentrations above their respective Utah Ground Water Quality Standard (GWQS) or other applicable human health criteria (see October 21, 1987 NRC letter from Edward F. Hawkins to Atlas Minerals, and dissolved and total analysis results from Oak Ridge National Laboratories). Some of these contaminants exceeded their

respective State GWQS by more than 640 times (e.g., average concentration of vanadium at 38.5 mg/l). As a result, the Atlas mill tailings pile represents probable cause to believe that it will cause ground water pollution.

2. Atlas Ground Water Quality Data - information provided by Atlas shows two (2) tailings related contaminants, molybdenum and selenium, have been found in downgradient ground water monitoring wells at the facility in concentrations in excess of State GWQS or applicable human health criteria (molybdenum and selenium in wells AMM-2, AMM-3, ATP-2-S; and selenium in wells ATP-1-S, ATP-3, MW-3, see July, 1994 Canonic Environmental report, "NRC Technical Information Request, Atlas Corporation Ground Water Corrective Action Plan Uranium Mill and Tailings Disposal Area, Appendix D). Of these sampling events, excess selenium concentrations were found more than 6 times over the State GWQS (ibid., Graph D-8); whereas, molybdenum concentrations were found to be 34 times or more over the applicable human health criteria [0.04 mg/l, ibid., Figure 7 (ATP-2-S), and Graph D-2 (AMM-2)]. Such data confirm non-radiological tailings pile pollution of groundwater on the Atlas property.
3. DEQ Ground Water Quality Data: Atlas Seeps - water quality samples collected by the DEQ from groundwater seeps on the north bank of the Colorado River in the immediate vicinity of the Atlas tailings pile have discovered concentrations of five (5) separate tailings related contaminants in excess of State GWQS or applicable human health criteria. In the case of molybdenum, groundwater concentrations in the seep were found as high as 1.2 mg/l, or 30 times over the criteria (see DRC April 26, 1996 Comments to NRC, "DRC/DEQ Comments on January, 1996 Draft Technical Evaluation Report for the Proposed Revised Reclamation Plan for Atlas Corporation Moab Mill NUREG-1532 U.S. Nuclear Regulatory Commission Source Material License No. SUA 917 Docket No. 40-3453", Attachment 9). This data also confirms groundwater polluted by the tailings pile has been discharged beyond the limits of the Atlas property.
4. DEQ River Water Quality Data: Immediately Above and Below Atlas - Colorado River water quality samples collected by DEQ from the immediate vicinity of the Atlas tailings pile show downstream concentrations (river at first approach to State Highway 279) elevated over upstream concentrations (river at Moab Bridge) for four different contaminants (i.e., ammonia (as N), manganese, molybdenum, and nitrate + nitrite (as N), ibid., Attachment 13). Of these, ammonia (as N) concentrations were found to exceed State surface water quality standards at the downstream sampling location (Water Quality Numeric Criteria, ibid.). This information suggests possible adverse impact of Colorado River water quality by polluted groundwater discharged from the Atlas facility.

In addition to the tailings pile as the apparent source of this pollution, other former mill site facilities and operational practices may have contributed to the ground water pollution in question, including but not limited to: open-air storage of uranium ore; spills or other discharges

of mill reagents, process waters, wastewaters, and byproduct materials; and use of unlined stormwater retention and raffinate ponds. As a result, it appears that such other mill site facilities and past practices constitute probable cause to believe Atlas has already or may cause ground water pollution in vicinity of the mill site in violation of UCA Section 19-5-107. For this reason, Atlas must include characterization of both the tailings pile and the former mill site in preparation of its GWCI Report.

Ground Water Corrective Action Order Process

We believe it is in our mutual interest to enter into an open dialogue in order to facilitate development of a credible and competent GWCI Report and GWCA Plan. To this end, description is attached regarding the types of information needed, pursuant to the Utah GWQP Regulations (UAC R317-6-6.15.D). It is the intent of the GWCI Report and GWCA Plan to be comprehensive. For this reason, we welcome discussions with Atlas and/or its consultants to ensure efficiency in this process.

After formal notice that a GWCI Report and GWCA Plan are required, Atlas has 30 days to submit a schedule for completion of these two documents (UAC R317-6-6.15.C.1). After review of the proposed schedule, the Executive Secretary may accept, reject, or modify it.

Before or upon submittal of the GWCI Report and GWCA Plan, Atlas may petition a waiver of certain technical information or requirements it believes not necessary for the Executive Secretary's review and evaluation (UAC R317-6-6.15.C.4). If the Executive Secretary agrees with the justification provided, these certain technical elements may be waived. If not, Atlas will be required to provide all information mandated by UAC R317-6-6.15, and as determined necessary by the Executive Secretary, pursuant to UAC R317-6-6.15.D.1.e. We encourage an open exchange in order to identify these items early and expedite and facilitate development of an adequate GWCI Report and GWCA Plan.

After review of the GWCI Report and GWCA Plan, the Executive Secretary will provide opportunity for public review of its findings. A notice will be published in a local newspaper and a 30-day period provided to receive public comments. After consideration of public comments regarding the Atlas GWCI Report and GWCA Plan, the Executive Secretary will issue an order to approve, disapprove, or modify the Atlas GWCI Report and GWCA Plan. The Corrective Action Order may require Atlas to implement and complete the GWCA Plan, as approved or modified.

Mr. Richard E. Blubaugh
September 6, 1996
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Notice to Submit a GWCI Report and GWCA Plan

Please be advised that this letter constitutes formal notice under UAC R317-6-6.15.B.1 that Atlas is required to submit a Ground Water Contaminant Investigation (GWCI) Report and Corrective Action (GWCA) Plan may also be required. Because the GWCA Plan will include a risk assessment for the facility, and because Atlas is in process of completing such studies for an application for groundwater alternative concentration limits to the NRC, we strongly encourage you to include work efforts for the GWCA Plan with the GWCI Report, required above.

Pursuant to UAC R317-6-6.15.B.1, Atlas is hereby required to submit within 30 days of receipt of this notice a proposed schedule for the submission of the GWCI report and the GWCA Plan. After review of the Atlas proposed schedule, the Executive Secretary may approve, reject, or modify the proposed schedule.

Information Needs: GWCI Report and GWCA Plan

In order to begin a dialogue and provide a point of reference from which Atlas can develop an adequate GWCI Report and GWCA Plan, the Executive Secretary has attached an outline of certain data elements and needs. This list was formulated from the requirements of the Utah Ground Water Quality Protection Regulations (UAC R317-6-6.15.D) and our review of certain Atlas geologic, hydrologic, and ground water quality information found in the NRC docket file. We encourage Atlas to carefully consider these information needs in its development of the GWCI Report and GWCA Plan.

The purpose of a GWCA Plan is to provide a corrective action that is protective of human health and the environment, produces a permanent effect, and compels the pollution source to yield a discharge that meets the State ground water quality standards. State rules governing ground water corrective action do allow for adoption of ground water alternative concentration limits at remedial action projects, referred to as Alternate Corrective Action Concentration Limits (ACACLs).

However, please be advised that the Utah Ground Water Quality Protection Regulations expressly limit approval of any Alternative Corrective Action Concentration Limit to the Utah Water Quality Board (UAC R317-6-6.15.G). As a result, such a request will require both a public hearing and formal presentation and hearing before the Board.

Should you have any questions regarding the Utah ground water corrective action order process, the above Notice, or the attached information needs for the GWCI Report and GWCA Plan, please call Loren Morton at the Division of Radiation Control at (801) 536-4250.

Mr. Richard E. Blubaugh
September 6, 1996
Page 6

We appreciate your cooperation in resolution of the Atlas uranium mill tailings Reclamation Plan and in your plans to protect ground and surface water quality near your Moab facility.

Sincerely,



William J. Sinclair, Director
Division of Radiation Control



Don A. Ostler, Director
Division of Water Quality

Attachment

LBM:lm

cc: Dianne R. Nielson, DEQ
George Robinson, Harding Lawson Associates
Tony Thompson, Shaw, Pittman, Potts & Trowbridge
Denise Chancellor, UT Attorney General
Joe Holonich, NRC
Mike Fliegel, NRC (w/attach.)
Mike Layton, NRC (w/attach.)
Peter Haney, Grand County

F:gwcap.ltr
FILE: Atlas Ground Water Corrective Action Plan

UNITED STATES BANKRUPTCY COURT COLORADO (DENVER)		PROOF OF CLAIM
Name of Debtor Atlas Corporation	Case Number 98-2331-001	
<p>NOTE: This form should not be used to make a claim for an administrative expense arising after the commencement of the case. A "request" for payment of an administrative expense may be filed pursuant to 11 U.S.C. § 503.</p>		
Name of Creditor (The person or other entity to whom the debtor owes money or property): State of Utah Name and Address where notices should be sent: State of Utah Department of Environmental Quality Division of Water Quality 288 North 1460 West Salt Lake City UT 84114-4870 Telephone Number:	<input type="checkbox"/> Check box if you are aware that anyone else has filed a proof of claim relating to your claim. Attach copy of statement giving particulars. <input type="checkbox"/> Check box if you have never received any notices from the bankruptcy court in this case. <input type="checkbox"/> Check box if the address differs from the address on the envelope sent to you by the court.	 98-2331 412722 THIS SPACE IS FOR COURT USE ONLY
Account or other number by which creditor identifies debtor:	Check here if <input type="checkbox"/> replaces this claim <input type="checkbox"/> amends a previously filed claim, dated _____	
1. Basis for Claim <input type="checkbox"/> Goods sold <input type="checkbox"/> Services performed <input type="checkbox"/> Money loaned <input type="checkbox"/> Personal injury/wrongful death <input type="checkbox"/> Taxes <input checked="" type="checkbox"/> Other <u>Groundwater contamination & groundwater corrective action (see attached)</u>	<input type="checkbox"/> Retiree benefits as defined in 11 U.S.C. § 1114(a) <input type="checkbox"/> Wages, salaries, and compensation (fill out below) Your SS #: _____ Unpaid compensation for services performed from _____ to _____ (date) (date)	
2. Date debt was incurred: <u>(see attached)</u> <u>01/26/98 to 01/25/98 cost-reduction forward</u>	3. If court judgment, date obtained:	
4. Total Amount of Claim at Time Case Filed: If all or part of your claim is secured or entitled to priority, also complete item 5 or 6 below. <input type="checkbox"/> Check this box if claim includes interest or other charges in addition to the principal amount of the claim. Attach itemized statement of all interest or additional charges.	5. <u>PROTECTIVE ADMINISTRATIVE (see attached)</u>	
5. Secured Claim. <input type="checkbox"/> Check this box if your claim is secured by collateral (including a right of setoff). Brief Description of Collateral: <input type="checkbox"/> Real Estate <input type="checkbox"/> Motor Vehicle <input type="checkbox"/> Other _____ Value of Collateral: \$ _____ Amount of arrears and other charges at time case filed included in secured claim, if any: \$ _____	6. Unsecured Priority Claim. <input type="checkbox"/> Check this box if you have an unsecured priority claim entitled to priority 5. Specify the priority of the claim. <input type="checkbox"/> Wages, salaries, or commissions (up to \$4,300)* earned within 90 days before filing of the bankruptcy petition or cessation of the debtor's business, whichever is earlier - 11 U.S.C. § 507(a)(3). <input type="checkbox"/> Contributions to an employee benefit plan - 11 U.S.C. § 507(a)(4). <input type="checkbox"/> Up to \$ 1,950* of deposits toward purchase, lease, or rental of property or services for personal, family, or household use - 11 U.S.C. § 507(a)(6). <input type="checkbox"/> Alimony, maintenance, or support owed to a spouse, former spouse, or child - 11 U.S.C. § 507(a)(7). <input type="checkbox"/> Taxes or penalties owed to governmental units - 11 U.S.C. § 507(a)(8). <input type="checkbox"/> Other - Specify applicable paragraph of 11 U.S.C. § 507(a)(1). *Amounts are subject in adjustment on 4/1/01 and every 3 years thereafter with respect to cases commenced on or after the date of adjustment.	
7. Credits: The amount of all payments on this claim has been credited and deducted for the purpose of making this proof of claim.	THIS SPACE IS FOR COURT USE ONLY	
8. Supporting Documents: Attach copies of supporting documents, such as promissory notes, purchase orders, invoices, itemized statements of running accounts, contracts, court judgments, mortgages, security agreements, and evidence of perfection of lien. DO NOT SEND ORIGINAL DOCUMENTS. If the documents are not available, explain. If the documents are voluminous, attach a summary.		
9. Date-Stamped Copy: To receive an acknowledgment of the filing of your claim, enclose a stamped, self-addressed envelope and copy of this proof of claim.		
Date <u>10/21/98</u>	Sign and print the name and title, if any, of the creditor or other person authorized to file this claim (attach copy of power of attorney, if any): <u>Dorise Chancellor, Assistant Attorney General, PO Box 140873, SALT LAKE CITY UT</u>	
Penalty for presenting fraudulent claim: Fine of up to \$500,000 or imprisonment for up to 5 years, or both. 18 U.S.C. §§ 152 and 3571. 840		

In the Matter of Atlas Corporation,
Case No. 98-23331-dec, Chapter 11

Attachment to State of Utah's Proof of Claim

Item 1 (Basis for Claim)

Item 2 (Date debt was incurred) and

Item 4 (Total amount of claim at time case filed)

A. Groundwater corrective action investigation and report and groundwater corrective action plan and implementation associated with the Atlas mill operations and tailings pile located at Moab, Utah, as notified by letter dated September 12, 1996, from pre-petition to the date of the petition and continuing post-petition forward, in an amount to be determined.

B. Natural Resource Damage Claim, under 42 U.S.C. § 9607(f), for injury to, destruction of, or loss of natural resources, including groundwater, caused by the release of hazardous substances, pollutants and contaminants, from the Atlas mill operations and associated tailings pile located at Moab, Utah, from pre-petition to the date of the petition and continuing post petition forward, in an amount to be determined, based on the cost to restore, replace, or acquire the equivalent of the injured natural resources.

Item 8 (Attached supporting documents)

- A. State of Utah's Corrective Action Notice dated September 12, 1996 to Richard E. Blubaugh, Atlas Corporation.
- B. Utah Code Ann. § 19-5-107.
- C. Utah Administrative Code R317-6-6.



DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF RADIATION CONTROL

Michael O. Leavitt
Governor

Dianne R. Nielson, Ph.D.
Executive Director

William J. Sinclair
Director

168 North 1950 West
P.O. Box 144850
Salt Lake City, Utah 84114-4850
(801) 536-4250 Voice
(801) 533-4097 Fax
(801) 536-4414 T.D.D.

ATTORNEY
GENERAL

SEP 16 1996

ENVIRONMENT

Certified Mail

(return receipt requested)

September 12, 1996

Mr. Richard E. Blubaugh
Vice President Environmental
and Governmental Affairs
Republic Plaza
370 Seventeenth Street, Suite 3050
Denver, CO 80202

Re: Atlas Uranium Mill Tailings Pile and Reclamation Near Moab, Utah: Notice for
Submittal of Ground Water Contaminant Investigation Report and Corrective
Action Plan.

Dear Mr. Blubaugh:

The purpose of this letter is to notify Atlas Corporation of the Executive Secretary's decision to require the submittal of a Ground Water Contaminant Investigation Report and Corrective Action Plan for Atlas uranium mill and tailings, near Moab, Utah.

As you are aware, for more than a year now the Utah Department of Environmental Quality (DEQ) has entered into discussions with the U.S. Nuclear Regulatory Commission (NRC) in an attempt to coordinate State requirements found in the Utah Ground Water Quality Protection (GWQP) Regulations (Utah Administrative Code [UAC] R317-6) with NRC licensing efforts currently underway for the reclamation of the Atlas mill site and uranium tailings pile near Moab, Utah. The purpose of these activities was to avoid a dual regulatory situation for the Atlas cleanup and satisfy State rules thru mutual cooperation with the NRC. As you are already aware, the State's regulatory authority over uranium mill tailings is limited to their non-radiologic contaminants, pursuant to the U.S. Atomic Energy Act of 1954.

We regret to inform you that the NRC has determined that they are unable to accommodate the state concerns under their process. Consequently, we will exercise State authority to independently regulate ground and surface water quality for non-radiologic contaminants at the Atlas uranium mill site and tailings pile.



Mr. Richard E. Blubaugh
September 6, 1996
Page 2

As we explained in our meeting of June 4, 1996, this will ultimately include issuance of a Ground Water Corrective Action (GWCA) Order pursuant to State GWQP Regulations (UAC R317-6-6.15). However, prerequisite to this Order, the GWQP Regulations provide the Executive Secretary authority to require Atlas to submit a Ground Water Contaminant Investigation and Corrective Action Plan for review and approval (UAC R317-6-6.15.C.1).

The objective of this letter is to explain the application of the contaminant investigation and corrective action requirements process, provide formal notice that a contaminant investigation report is required, and list the informational items needed in both an investigation report and corrective action plan.

Application of Ground Water Corrective Action Requirements

Under State GWQP Regulations (UAC R317-6-6.15.A), the ground water corrective action provisions apply to:

"... any person who discharges pollutants into ground water in violation of Section 19-5-107, or who places or causes to be placed any wastes in a location where there is probable cause to believe they will cause pollution of ground water in violation of Section 19-5-107."

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Based on our review of available information we have determined that the Atlas tailings pile has discharged non-radiological pollutants into nearby ground water in violation of Utah GWQP Regulations (UAC R317-6-6.15.A) and Utah Code Annotated (Section 19-5-107). Said discharge to groundwater may in turn also cause discharge of pollutants to the nearby Colorado River, in violation of UCA Section 19-5-107. This determination is based on the following findings:

1. Tailings Leachate Water Quality Results - review of NRC water quality samples collected in 1987 at your facility shows 13 separate non-radiologic contaminants existed in the tailings leachate at concentrations above their respective Utah Ground Water Quality Standard (GWQS) or other applicable human health criteria (see October 21, 1987 NRC letter from Edward F. Hawkins to Atlas Minerals, and dissolved and total analysis results from Oak Ridge National Laboratories). Some of these contaminants exceeded their

respective State GWQS by more than 640 times (e.g., average concentration of vanadium at 38.5 mg/l). As a result, the Atlas mill tailings pile represents probable cause to believe that it will cause ground water pollution.

2. Atlas Ground Water Quality Data - information provided by Atlas shows two (2) tailings related contaminants, molybdenum and selenium, have been found in downgradient ground water monitoring wells at the facility in concentrations in excess of State GWQS or applicable human health criteria (molybdenum and selenium in wells AMM-2, AMM-3, ATP-2-S; and selenium in wells ATP-1-S, ATP-3, MW-3, see July, 1994 Canonic Environmental report, "NRC Technical Information Request, Atlas Corporation Ground Water Corrective Action Plan Uranium Mill and Tailings Disposal Area, Appendix D). Of these sampling events, excess selenium concentrations were found more than 6 times over the State GWQS (ibid., Graph D-8); whereas, molybdenum concentrations were found to be 34 times or more over the applicable human health criteria [0.04 mg/l, ibid., Figure 7 (ATP-2-S), and Graph D-2 (AMM-2)]. Such data confirm non-radiological tailings pile pollution of groundwater on the Atlas property.
3. DEQ Ground Water Quality Data: Atlas Seeps - water quality samples collected by the DEQ from groundwater seeps on the north bank of the Colorado River in the immediate vicinity of the Atlas tailings pile have discovered concentrations of five (5) separate tailings related contaminants in excess of State GWQS or applicable human health criteria. In the case of molybdenum, groundwater concentrations in the seep were found as high as 1.2 mg/l, or 30 times over the criteria (see DRC April 26, 1996 Comments to NRC, "DRC/DEQ Comments on January, 1996 Draft Technical Evaluation Report for the Proposed Revised Reclamation Plan for Atlas Corporation Moab Mill NUREG-1532 U.S. Nuclear Regulatory Commission Source Material License No. SUA 917 Docket No. 40-3453", Attachment 9). This data also confirms groundwater polluted by the tailings pile has been discharged beyond the limits of the Atlas property.
4. DEQ River Water Quality Data: Immediately Above and Below Atlas - Colorado River water quality samples collected by DEQ from the immediate vicinity of the Atlas tailings pile show downstream concentrations (river at first approach to State Highway 279) elevated over upstream concentrations (river at Moab Bridge) for four different contaminants (i.e., ammonia (as N), manganese, molybdenum, and nitrate + nitrite (as N), ibid., Attachment 13). Of these, ammonia (as N) concentrations were found to exceed State surface water quality standards at the downstream sampling location (Water Quality Numeric Criteria, ibid.). This information suggests possible adverse impact of Colorado River water quality by polluted groundwater discharged from the Atlas facility.

In addition to the tailings pile as the apparent source of this pollution, other former mill site facilities and operational practices may have contributed to the ground water pollution in question, including but not limited to: open-air storage of uranium ore; spills or other discharges

of mill reagents, process waters, wastewaters, and byproduct materials; and use of unlined stormwater retention and raffinate ponds. As a result, it appears that such other mill site facilities and past practices constitute probable cause to believe Atlas has already or may cause ground water pollution in vicinity of the mill site in violation of UCA Section 19-5-107. For this reason, Atlas must include characterization of both the tailings pile and the former mill site in preparation of its GWCI Report.

Ground Water Corrective Action Order Process

We believe it is in our mutual interest to enter into an open dialogue in order to facilitate development of a credible and competent GWCI Report and GWCA Plan. To this end, description is attached regarding the types of information needed, pursuant to the Utah GWQP Regulations (UAC R317-6-6.15.D). It is the intent of the GWCI Report and GWCA Plan to be comprehensive. For this reason, we welcome discussions with Atlas and/or its consultants to ensure efficiency in this process.

After formal notice that a GWCI Report and GWCA Plan are required, Atlas has 30 days to submit a schedule for completion of these two documents (UAC R317-6-6.15.C.1). After review of the proposed schedule, the Executive Secretary may accept, reject, or modify it.

Before or upon submittal of the GWCI Report and GWCA Plan, Atlas may petition a waiver of certain technical information or requirements it believes not necessary for the Executive Secretary's review and evaluation (UAC R317-6-6.15.C.4). If the Executive Secretary agrees with the justification provided, these certain technical elements may be waived. If not, Atlas will be required to provide all information mandated by UAC R317-6-6.15, and as determined necessary by the Executive Secretary, pursuant to UAC R317-6-6.15.D.1.e . We encourage an open exchange in order to identify these items early and expedite and facilitate development of an adequate GWCI Report and GWCA Plan.

After review of the GWCI Report and GWCA Plan, the Executive Secretary will provide opportunity for public review of its findings. A notice will be published in a local newspaper and a 30-day period provided to receive public comments. After consideration of public comments regarding the Atlas GWCI Report and GWCA Plan, the Executive Secretary will issue an order to approve, disapprove, or modify the Atlas GWCI Report and GWCA Plan. The Corrective Action Order may require Atlas to implement and complete the GWCA Plan, as approved or modified.

Mr. Richard E. Blubaugh
September 6, 1996
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Notice to Submit a GWCI Report and GWCA Plan

Please be advised that this letter constitutes formal notice under UAC R317-6-6.15.B.1 that Atlas is required to submit a Ground Water Contaminant Investigation (GWCI) Report and Corrective Action (GWCA) Plan may also be required. Because the GWCA Plan will include a risk assessment for the facility, and because Atlas is in process of completing such studies for an application for groundwater alternative concentration limits to the NRC, we strongly encourage you to include work efforts for the GWCA Plan with the GWCI Report, required above.

Pursuant to UAC R317-6-6.15.B.1, Atlas is hereby required to submit within 30 days of receipt of this notice a proposed schedule for the submission of the GWCI report and the GWCA Plan. After review of the Atlas proposed schedule, the Executive Secretary may approve, reject, or modify the proposed schedule.

Information Needs: GWCI Report and GWCA Plan

In order to begin a dialogue and provide a point of reference from which Atlas can develop an adequate GWCI Report and GWCA Plan, the Executive Secretary has attached an outline of certain data elements and needs. This list was formulated from the requirements of the Utah Ground Water Quality Protection Regulations (UAC R317-6-6.15.D) and our review of certain Atlas geologic, hydrologic, and ground water quality information found in the NRC docket file. We encourage Atlas to carefully consider these information needs in its development of the GWCI Report and GWCA Plan.

The purpose of a GWCA Plan is to provide a corrective action that is protective of human health and the environment, produces a permanent effect, and compels the pollution source to yield a discharge that meets the State ground water quality standards. State rules governing ground water corrective action do allow for adoption of ground water alternative concentration limits at remedial action projects, referred to as Alternate Corrective Action Concentration Limits (ACACLs).

However, please be advised that the Utah Ground Water Quality Protection Regulations expressly limit approval of any Alternative Corrective Action Concentration Limit to the Utah Water Quality Board (UAC R317-6-6.15.G). As a result, such a request will require both a public hearing and formal presentation and hearing before the Board.

Should you have any questions regarding the Utah ground water corrective action order process, the above Notice, or the attached information needs for the GWCI Report and GWCA Plan, please call Loren Morton at the Division of Radiation Control at (801) 536-4250.

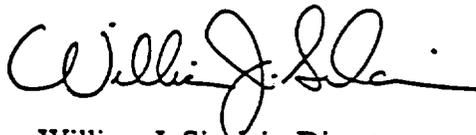
Mr. Richard E. Blubaugh

September 6, 1996

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We appreciate your cooperation in resolution of the Atlas uranium mill tailings Reclamation Plan and in your plans to protect ground and surface water quality near your Moab facility.

Sincerely,



William J. Sinclair, Director
Division of Radiation Control



Don A. Ostler, Director
Division of Water Quality

Attachment

LBM:lm

cc: Dianne R. Nielson, DEQ
George Robinson, Harding Lawson Associates
Tony Thompson, Shaw, Pittman, Potts & Trowbridge
Denise Chancellor, UT Attorney General
Joe Holonich, NRC
Mike Fliegel, NRC (w/attach.)
Mike Layton, NRC (w/attach.)
Peter Haney, Grand County

F:gwcap.ltr

FILE: Atlas Ground Water Corrective Action Plan

19-5-107. Discharge of pollutants unlawful -- Discharge permit required.

(1) (a) Except as provided in this chapter or rules made under it, it is unlawful for any person to discharge a pollutant into waters of the state or to cause pollution which constitutes a menace to public health and welfare, or is harmful to wildlife, fish or aquatic life, or impairs domestic, agricultural, industrial, recreational, or other beneficial uses of water, or to place or cause to be placed any wastes in a location where there is probable cause to believe it will cause pollution.

(b) For purposes of injunctive relief, any violation of this subsection is a public nuisance.

(2) (a) A person may not generate, store, treat, process, use, transport, dispose, or otherwise manage sewage sludge, except in compliance with this chapter and rules made under it.

(b) For purposes of injunctive relief, any violation of this subsection is a public nuisance.

(3) It is unlawful for any person, without first securing a permit from the executive secretary as authorized by the board, to:

(a) make any discharge or manage sewage sludge not authorized under an existing valid discharge permit; or

(b) construct, install, modify, or operate any treatment works or part of any treatment works or any extension or addition to any treatment works, or construct, install, or operate any establishment or extension or modification of or addition to any treatment works, the operation of which would probably result in a discharge.

Amended by Chapter 271, 1998 General Session

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Last revised: Tuesday, May 12, 1998

Title R317. Environmental Quality, Water Quality.

Rule R317-6. Ground Water Quality Protection.

As in effect on October 1, 1998

Sections

- R317-6-1. Definitions.
 - R317-6-2. Ground Water Quality Standards.
 - R317-6-3. Ground Water Classes.
 - R317-6-4. Ground Water Class Protection Levels.
 - R317-6-5. Ground Water Classification for Aquifers.
 - R317-6-6. Implementation.
-

DECISIONS.

R317-6-6. Implementation.

6.1 DUTY TO APPLY FOR A GROUND WATER DISCHARGE PERMIT

A. No person may construct, install, or operate any new facility or modify an existing or new facility, not permitted by rule under R317-6-6.2, which discharges or would probably result in a discharge of pollutants that may move directly or indirectly into ground water, including, but not limited to land application of wastes; waste storage pits; waste storage piles; landfills and dumps; large feedlots; mining, milling and metallurgical operations, including heap leach facilities; and pits, ponds, and lagoons whether lined or not, without a ground water discharge permit from the Executive Secretary. A ground water discharge permit application should be submitted at least 180 days before the permit is needed.

B. All persons who constructed, modified, installed, or operated any existing facility, not permitted by rule under R317-6-6.2, which discharges or would probably result in a discharge of pollutants that may move directly or indirectly into ground water, including, but not limited to: land application of wastes; waste storage pits; waste storage piles; landfills and dumps; large feedlots; mining, milling and metallurgical operations, including heap leach facilities; and pits, ponds, and lagoons whether lined or not, must have submitted a notification of the nature and location of the discharge to the Executive Secretary before February 10, 1990 and must submit an application for a ground water discharge permit within one year after receipt of written notice from the Executive Secretary that a ground water discharge permit is required.

6.2 GROUND WATER DISCHARGE PERMIT BY RULE

A. Except as provided in R317-6-6.2.C, the following facilities are considered to be permitted by rule and are not required to obtain a discharge permit under R317-6-6.1 or comply with R317-6-6.3 through R317-6-6.7, R317-6-6.9 through R317-6-6.11, R317-6-6.13, R317-6-6.16, R317-6-6.17 and

R317-6-6.18:

1. facilities with effluent or leachate which has been demonstrated to the satisfaction of the Executive Secretary to conform and will not deviate from the applicable class TDS limits, ground water quality standards, protection levels or other permit limits and which does not contain any contaminant that may present a threat to human health, the environment or its potential beneficial uses of the ground water. The Executive Secretary may require samples to be analyzed for the presence of contaminants before the effluent or leachate discharges directly or indirectly into ground water. If the discharge is by seepage through natural or altered natural materials, the Executive Secretary may require samples of the solution be analyzed for the presence of pollutants before or after seepage;
2. water used for watering of lawns, gardens, or shrubs or for irrigation for the revegetation of a disturbed land area except for the direct land application of wastewater;
3. application of agricultural chemicals including fertilizers, herbicides and pesticides including but not limited to, insecticides fungicides, rodenticides and fumigants when used in accordance with current scientifically based manufacturer's recommendations for the crop, soil, and climate and in accordance with state and federal statutes, regulations, permits, and orders adopted to avoid ground water pollution;
4. water used for irrigated agriculture except for the direct land application of wastewater from municipal, industrial or mining facilities;
5. flood control systems including detention basins, catch basins and wetland treatment facilities used for collecting or conveying storm water runoff;
6. natural ground water seeping or flowing into conventional mine workings which re-enters the ground by natural gravity flow prior to pumping or transporting out of the mine and without being used in any mining or metallurgical process;
7. leachate which results entirely from the direct natural infiltration of precipitation through undisturbed materials;
8. wells and facilities regulated under the underground injection control (UIC) program;
9. land application of livestock wastes, within expected crop nitrogen uptake;
10. individual subsurface wastewater disposal systems approved by local health departments or large subsurface wastewater disposal systems approved by the Board;
11. produced water pits, and other oil field waste treatment, storage, and disposal facilities regulated by the Division of Oil, Gas, and Mining in accordance with Section 40-6-5(3)(d) and R649-9, Disposal of Produced Water;
12. reserve pits regulated by the Division of Oil, Gas and Mining in accordance with Section 40-6-5(3)(a) and R649-3-7, Drilling and Operating Practices;
13. storage tanks installed or operated under regulations adopted by the Utah Solid and Hazardous Waste Control Board;
14. coal mining operations or facilities regulated under the Coal Mining and Reclamation Act by the Utah Division of Oil, Gas, and Mining (DOG M). The submission of an application for ground water discharge permit under R317-6-6.2.C may be required only if the Executive Secretary, after consideration of recommendations, if any, by DOGM, determines that the discharge violates applicable ground water quality standards, applicable Class TDS limits, or is interfering with a reasonable foreseeable beneficial use of the ground water. DOGM is not required to establish any

administrative or regulatory requirements which are in addition to the rules of DOGM for coal mining operations or facilities to implement these ground water regulations;

15. hazardous waste or solid waste management units managed or undergoing corrective action under R315-1 through R315-14;

16. solid waste landfills permitted under the requirements of R315-303;

17. animal feeding operations, as defined in UAC R317-8-3.5(2), which are not located within Zone 1 (100) feet for wells in a confined aquifer or Zone 2 (250 day time of travel) for wells and springs in unconfined aquifers, in accordance with the Public Drinking Water Rule R309-113, and which meet either of the following criteria:

a) operations which incorporate low volume liquid waste handling systems of less than 4 million gallons capacity, or

b. operations with fewer than the following numbers of animals confined:

i. 1,000 slaughter and feeder cattle,

ii. 700 mature dairy cattle, whether milked or dry cows,

iii. 2,500 swine each weighing over 25 kilograms (approximately 55 pounds), for facilities without animal waste collection and treatment systems approved by the Executive Secretary,

iv. 1,000,000 pounds steady state live animal weight of swine for facilities with animal waste collection and treatment systems for which a construction permit has been issued by the Executive Secretary,

v. 500 horses,

vi. 10,000 sheep or lambs,

vii. 55,000 turkeys,

viii. 100,000 laying hens or broilers, if the facility has continuous over flow watering,

ix. 30,000 hens or broilers, if the facility has a liquid manure handling system,

x. 5,000 ducks, or

xi. 1,000 animal units;

18. animal feeding operations which do not utilize liquid waste handling systems;

19. mining, processing or milling facilities handling less than 10 tons per day of metallic and/or nonmetallic ore and waste rock, not to exceed 2500 tons/year in aggregate unless the processing or milling uses chemical leaching;

20. pipelines and above-ground storage tanks;

21. drilling operations for metallic minerals, nonmetallic minerals, water, hydrocarbons, or geothermal energy sources when done in conformance with applicable regulations of the Utah Division of Oil, Gas, and Mining or the Utah Division of Water Rights;

22. land application of municipal sewage sludge for beneficial use, at or below the agronomic rate and in compliance with the requirements of 40 CFR 503, July 1, 1993 edition;

23. land application of municipal sewage sludge for mine-reclamation at a rate higher than the agronomic rate and in compliance with 40 CFR 503, July 1, 1993 edition;

24. municipal wastewater treatment lagoons receiving no wastewater from a significant industrial discharger as defined in R317-8-8.2(12); and

25. facilities and modifications thereto which the Executive Secretary determines after a review of the application will have a de minimis actual or potential effect on ground water quality.

B. No facility permitted by rule under R317-6-6.2.A may cause ground water to exceed ground water quality standards or the applicable class TDS limits in R317-6-3.1 to R317-6-3.7. If the background concentration for affected ground water exceeds the ground water quality standard, the facility may not cause an increase over background. This section, R317-6-6.2B. does not apply to facilities undergoing corrective action under R317-6-6.15A.3.

C. The submission of an application for a ground water discharge permit may be required by the Executive Secretary for any discharge permitted by rule under R317-6-6.2 if it is determined that the discharge may be causing or is likely to cause increases above the ground water quality standards or applicable class TDS limits under R317-6-3 or otherwise is interfering or may interfere with probable future beneficial use of the ground water.

6.3 APPLICATION REQUIREMENTS FOR A GROUND WATER DISCHARGE PERMIT

Unless otherwise determined by the Executive Secretary, the application for a permit to discharge wastes or pollutants to ground water shall include the following complete information:

A. The name and address of the applicant and the name and address of the owner of the facility if different than the applicant. A corporate application must be signed by an officer of the corporation. The name and address of the contact, if different than above, and telephone numbers for all listed names shall be included.

B. The legal location of the facility by county, quarter-quarter section, township, and range.

C. The name of the facility and the type of facility, including the expected facility life.

D. A plat map showing all water wells, including the status and use of each well, topography, springs, water bodies, drainages, and man-made structures within a one-mile radius of the discharge. The plat map must also show the location and depth of existing or proposed wells to be used for monitoring ground water quality.

E. Geologic, hydrologic, and agricultural description of the geographic area within a one-mile radius of the point of discharge, including soil types, aquifers, ground water flow direction, ground water quality, aquifer material, and well logs.

F. The type, source, and chemical, physical, radiological, and toxic characteristics of the effluent or leachate to be discharged; the average and maximum daily amount of effluent or leachate discharged (gpd), the discharge rate (gpm), and the expected concentrations of any pollutant (mg/l) in each discharge or combination of discharges. If more than one discharge point is used, information for each point must be given separately.

G. Information which shows that the discharge can be controlled and will not migrate into or adversely affect the quality of any other waters of the state, including the applicable surface water quality standards, that the discharge is compatible with the receiving ground water, and that the discharge will comply with the applicable class TDS limits, ground water quality standards, class protection levels or an alternate concentration limit proposed by the facility.

H. For areas where the ground water has not been classified by the Board, information on the quality

of the receiving ground water sufficient to determine the applicable protection levels.

I. The proposed monitoring plan, which includes a description, where appropriate, of the following:

1. ground water monitoring to determine ground water flow direction and gradient, background quality at the site, and the quality of ground water at the compliance monitoring point;
2. installation, use and maintenance of monitoring devices;
3. description of the compliance monitoring area defined by the compliance monitoring points including the dimensions and hydrologic and geologic data used to determine the dimensions;
4. monitoring of the vadose zone;
5. measures to prevent ground water contamination after the cessation of operation, including post-operational monitoring;
6. monitoring well construction and ground water sampling which conform to A Guide to the Selection of Materials for Monitoring Well Construction and Ground Water Sampling, (1983) and RCRA Ground Water Monitoring Technical Enforcement Guidance Manual (1986), unless otherwise specified by the Executive Secretary;
7. description and justification of parameters to be monitored.

J. The plans and specifications relating to construction, modification, and operation of discharge systems.

K. The description of the ground water most likely to be affected by the discharge, including water quality information of the receiving ground water prior to discharge, a description of the aquifer in which the ground water occurs, the depth to the ground water, the saturated thickness, flow direction, porosity, hydraulic conductivity, and flow systems characteristics.

L. The compliance sampling plan which includes, where appropriate, provisions for sampling of effluent and for flow monitoring in order to determine the volume and chemistry of the discharge onto or below the surface of the ground and a plan for sampling compliance monitoring points and appropriate nearby water wells. Sampling and analytical methods proposed in the application must conform with the most appropriate methods specified in the following references unless otherwise specified by the Executive Secretary:

1. Standard Methods for the Examination of Water and Wastewater, eighteenth edition, 1992; Library of Congress catalogue number: ISBN:0-87553- 207-1.

2. E.P.A. Methods, Methods for Chemical Analysis of Water and Wastes, 1983; Stock Number EPA-600/4-79-020.

3. Techniques of Water Resource Investigation of the U.S. Geological Survey, (1982); Book 5, Chapter A3.

4. Monitoring requirements in 40 CFR parts 141 and 142, 1991 ed., Primary Drinking Water Regulations and 40 CFR parts 264 and 270, 1991 ed.

5. National Handbook of Recommended Methods for Water-Data Acquisition, GSA-GS edition; Book 85 AD-2777, U.S. Government Printing Office Stock Number 024-001-03489-1.

6. Manual of Analytical Methods for the Analysis of Pesticide Residues in Humans and Environmental Samples, 1980; Stock Number EPA-600/8-80-038, U.S. Environmental Protection Agency.

M. A description of the flooding potential of the discharge site, including the 100-year flood plain, and any applicable flood protection measures.

N. Contingency plan for regaining and maintaining compliance with the permit limits and for reestablishing best available technology as defined in the permit.

O. Methods and procedures for inspections of the facility operations and for detecting failure of the system.

P. For any existing facility, a corrective action plan or identification of other response measures to be taken to remedy any violation of applicable ground water quality standards, class TDS limits or permit limit established under R317-6-6.4E, which has resulted from discharges occurring prior to issuance of a ground water discharge permit.

Q. Other information required by the Executive Secretary.

6.4 ISSUANCE OF DISCHARGE PERMIT

A. The Executive Secretary may issue a ground water discharge permit for a new facility if the Executive Secretary determines, after reviewing the information provided under R317-6-6.3, that:

1. the applicant demonstrates that the applicable class TDS limits, ground water quality standards protection levels, and permit limits established under R317-6-6.4E will be met;
2. the monitoring plan, sampling and reporting requirements are adequate to determine compliance with applicable requirements;
3. the applicant is using best available technology to minimize the discharge of any pollutant; and
4. there is no impairment of present and future beneficial uses of the ground water.

B. The Board may approve an alternate concentration limit for a new facility if:

1. The applicant submits a petition for an alternate concentration limit showing the extent to which the discharge will exceed the applicable class TDS limits, ground water standards or applicable protection levels and demonstrates that:

- a. the facility is to be located in an area of Class III ground water;
- b. the discharge plan incorporates the use of best available technology;
- c. the alternate concentration limit is justified based on substantial overriding social and economic benefits; and,
- d. the discharge would pose no threat to human health and the environment.

2. One or more public hearings have been held by the Board in nearby communities to solicit comment.

C. The Executive Secretary may issue a ground water discharge permit for an existing facility provided:

1. the applicant demonstrates that the applicable class TDS limits, ground water quality standards and protection levels will be met;
2. the monitoring plan, sampling and reporting requirements are adequate to determine compliance with applicable requirements;

3. the applicant utilizes treatment and discharge minimization technology commensurate with plant process design capability and similar or equivalent to that utilized by facilities that produce similar products or services with similar production process technology; and,

4. there is no current or anticipated impairment of present and future beneficial uses of the ground water.

D. The Board may approve an alternate concentration limit for a pollutant in ground water at an existing facility or facility permitted by rule under R317-6-6.2 if the applicant for a ground water discharge permit shows the extent the discharge exceeds the applicable class TDS limits, ground water quality standards and applicable protection levels that correspond to the otherwise applicable ground water quality standards and demonstrates that:

1. steps are being taken to correct the source of contamination, including a program and timetable for completion;

2. the pollution poses no threat to human health and the environment; and

3. the alternate concentration limit is justified based on overriding social and economic benefits.

E. An alternate concentration limit, once adopted by the Board under R317-6-6.4B or R317-6-6.4D, shall be the pertinent permit limit.

F. A facility permitted under this provision shall meet applicable class TDS limits, ground water quality standards, protection levels and permit limits.

G. The Board may modify a permit for a new facility to reflect standards adopted as part of corrective action.

6.5 NOTICE OF INTENT TO ISSUE A GROUND WATER DISCHARGE PERMIT

The Executive Secretary shall publish a notice of intent to approve in a newspaper in the affected area and shall allow 30 days in which interested persons may comment to the Board. Final action will be taken by the Executive Secretary following the 30-day comment period.

6.6 PERMIT TERM

A. The ground water discharge permit term will run for 5 years from the date of issuance. Permits may be renewed for 5-year periods or extended for a period to be determined by the Executive Secretary but not to exceed 5 years.

B. In the event that new ground water quality standards are adopted by the Board, permits may be reopened to extend the terms of the permit or to include pollutants covered by new standards. The holder of a permit may apply for a variance under the conditions outlined in R317-6-6.4.D.

6.7 GROUND WATER DISCHARGE PERMIT RENEWAL

The permittee for a facility with a ground water discharge permit must apply for a renewal or extension for a ground water discharge permit at least 180 days prior to the expiration of the existing permit. If a permit expires before an application for renewal or extension is acted upon by the Executive Secretary, the permit will continue in effect until it is renewed, extended or denied.

6.8 TERMINATION OF A GROUND WATER DISCHARGE PERMIT BY THE EXECUTIVE SECRETARY

A ground water discharge permit may be terminated or a renewal denied by the Executive Secretary if one of the following applies:

- A. noncompliance by the permittee with any condition of the permit where the permittee has failed to take appropriate action in a timely manner to remedy the permit violation;
- B. the permittee's failure in the application or during the permit approval process to disclose fully all significant relevant facts at any time;
- C. a determination that the permitted facility endangers human health or the environment and can only be regulated to acceptable levels by plan modification or termination; or
- D. the permittee requests termination of the permit.

6.9 PERMIT COMPLIANCE MONITORING

A. Ground Water Monitoring

The Executive Secretary may include in a ground water discharge permit requirements for ground water monitoring, and may specify compliance monitoring points where the applicable class TDS limits, ground water quality standards, protection levels or other permit limits are to be met.

The Executive Secretary will determine the location of the compliance monitoring point based upon the hydrology, type of pollutants, and other factors that may affect the ground water quality. The distance to the compliance monitoring points must be as close as practicable to the point of discharge. The compliance monitoring point shall not be beyond the property boundaries of the permitted facility without written agreement of the affected property owners and approval by the Executive Secretary..

B. Performance Monitoring

The Executive Secretary may include in a ground water discharge permit requirements for monitoring performance of best available technology standards.

6.10 BACKGROUND WATER QUALITY DETERMINATION

A. Background water quality contaminant concentrations shall be determined and specified in the ground water discharge permit. The determination of background concentration shall take into account any degradation.

B. Background water quality contaminant concentrations may be determined from existing information or from data collected by the permit applicant. Existing information shall be used, if the permit applicant demonstrates that the quality of the information and its means of collection are adequate to determine background water quality. If existing information is not adequate to determine background water quality, the permit applicant shall submit a plan to determine background water quality to the Executive Secretary for approval prior to data collection. One or more up-gradient, lateral hydraulically equivalent point, or other monitoring wells as approved by the Executive Secretary may be required for each potential discharge site.

C. After a permit has been issued, permittee shall continue to monitor background water quality contaminant concentrations in order to determine natural fluctuations in concentrations. Applicable up-gradient, and on-site ground water monitoring data shall be included in the ground water quality permit monitoring report.

6.11 NOTICE OF COMMENCEMENT AND DISCONTINUANCE OF GROUND WATER DISCHARGE OPERATIONS

A. The permittee shall notify the Division of Water Quality immediately upon commencement of the ground water discharge and submit a written notice within 30 days of the commencement of the discharge.

B. The permittee shall notify the Division of Water Quality of the date and reason for discontinuance of ground water discharge within 30 days.

6.12 SUBMISSION OF DATA

A. Laboratory Analyses

All laboratory analysis of samples collected to determine compliance with these regulations shall be performed in accordance with standard procedures by the Utah Division of Laboratory Services or by a laboratory certified by the Utah Department of Health.

B. Field Analyses

All field analyses to determine compliance with these regulations shall be conducted in accordance with standard procedures specified in R317-6-6.3.L.

C. Periodic Submission of Monitoring Reports

Results obtained pursuant to any monitoring requirements in the discharge permit and the methods used to obtain these results shall be periodically reported to the Executive Secretary according to the schedule specified in the ground water discharge permit.

6.13 REPORTING OF MECHANICAL PROBLEMS OR DISCHARGE SYSTEM FAILURES

The permittee shall notify the Executive Secretary within 24 hours of the discovery of any mechanical or discharge system failures that could affect the chemical characteristics or volume of the discharge. A written statement confirming the oral report shall be submitted to the Executive Secretary within five days of the failure.

6.14 CORRECTION OF ADVERSE EFFECTS REQUIRED

A. If monitoring or testing indicates that the permit conditions may be or are being violated by ground water discharge operations or the facility is otherwise in an out-of-compliance status, the permittee shall promptly make corrections to the system to correct all violations of the discharge permit.

B. The permittee, operator, or owner may be required to take corrective action as described in R317-6-6.15 if a pollutant concentration has exceeded a permit limit.

6.15 CORRECTIVE ACTION

It is the intent of the Board that the provisions of these regulations should be considered when making decisions under any state or federal superfund action; however, the protection levels are not intended to be considered as applicable, relevant or appropriate clean-up standards under such other regulatory programs.

A. Application of R317-6-6.15

1. Generally - R317-6-6.15 shall apply to any person who discharges pollutants into ground water in violation of Section 19-5-107, or who places or causes to be placed any wastes in a location where there is probable cause to believe they will cause pollution of ground water in violation of Section 19-5-107.

2. Corrective Action shall include, except as otherwise provided in R317-6-6.15, preparation of a Contamination Investigation and preparation and implementation of a Corrective Action Plan.

3. The procedural provisions of R-317-6-6.15 shall not apply to any facility where a corrective or remedial action for ground water contamination, that the Executive Secretary determines meets the substantive standards of this rule, has been initiated under any other state or federal program. Corrective or remedial action undertaken under the programs specified in Table 2 are considered to meet the substantive standards of this rule unless otherwise determined by the Executive Secretary.

TABLE 2

PROGRAM

Leaking Underground Storage Tank, Sections 19-6-401, et seq.

Federal Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. Sections 9601, et seq.

Hazardous Waste Mitigation Act, Sections 19-6-301 et seq.

Utah Solid and Hazardous Waste Act, Sections 19-6-101 et seq.

B. Notification and Interim Action

1. Notification - A person who spills or discharges any oil or other substance which may cause pollution of ground waters in violation of Section 19-5-107 shall notify the Executive Secretary within 24 hours of the spill or discharge. A written notification shall be submitted to the Executive Secretary within five days after the spill or discharge.

2. Interim Actions - A person is encouraged to take immediate, interim action without following the steps outlined in R317-6-6.15 if such action is required to control a source of pollutants. Interim action is also encouraged if required to protect public safety, public health and welfare and the environment, or to prevent further contamination that would result in costlier clean-up. Such interim actions should include source abatement and control, neutralization, or other actions as appropriate. A person that has taken these actions shall remain subject to R317-6-6.15 after the interim actions are completed unless he demonstrates that:

- a. no pollutants have been discharged into ground water in violation of 19-5-107; and
- b. no wastes remain in a location where there is probable cause to believe they will cause pollution of ground water in violation of 19-5-107.

C. Contamination Investigation and Corrective Action Plan - General

1. The Executive Secretary may require a person that is subject to R317-6-6.15 to submit for the Executive Secretary's approval a Contamination Investigation and Corrective Action Plan, and may require implementation of an approved Corrective Action Plan. A person subject to this rule who has been notified that the Executive Secretary is exercising his or her authority under R317-6-6.15 to require submission of a Contamination Investigation and Corrective Action Plan, shall, within 30 days of that notification, submit to the Executive Secretary a proposed schedule for those submissions, which may include different deadlines for different elements of the Investigation and Plan. The Executive Secretary may accept, reject, or modify the proposed schedule.

2. The Contamination Investigation or the Corrective Action Plan may, in order to meet the requirements of this Part, incorporate by reference information already provided to the Executive Secretary in the Contingency Plan or other document.

3. The requirements for a Contamination Investigation and a Corrective Action Plan specified in R317-6-6.15.D are comprehensive. The requirements are intended to be applied with flexibility, and persons subject to this rule are encouraged to contact the Executive Secretary's staff to assure its efficient application on a site-specific basis.

4. The Executive Secretary may waive any or all Contamination Investigation and Corrective Action Plan requirements where the person subject to this rule demonstrates that the information that would otherwise be required is not necessary to the Executive Secretary's evaluation of the Contamination Investigation or Corrective Action Plan. Requests for waiver shall be submitted to the Executive Secretary as part of the Contamination Investigation or Corrective Action Plan, or may be submitted in advance of those reports.

D. Contamination Investigation and Corrective Action Plan - Requirements

1. Contamination Investigation - The contamination investigation shall include a characterization of pollution, a characterization of the facility, a data report, and, if the Corrective Action Plan proposes standards under R317-6-6.15.F.2. or Alternate Corrective Action Concentration Limits higher than the ground water quality standards, an endangerment assessment.

a. The characterization of pollution shall include a description of:

(1) The amount, form, concentration, toxicity, environmental fate and transport, and other significant characteristics of substances present, for both ground water contaminants and any contributing surficial contaminants;

(2) The areal and vertical extent of the contaminant concentration, distribution and chemical make-up; and

(3) The extent to which contaminant substances have migrated and are expected to migrate.

b. The characterization of the facility shall include descriptions of:

(1) Contaminant substance mixtures present and media of occurrence;

(2) Hydrogeologic conditions underlying and, upgradient and downgradient of the facility;

(3) Surface waters in the area;

(4) Climatologic and meteorologic conditions in the area of the facility; and

(5) Type, location and description of possible sources of the pollution at the facility;

(6) Groundwater withdrawals, pumpage rates, and usage within a 2-mile radius.

c. The report of data used and data gaps shall include:

(1) Data packages including quality assurance and quality control reports;

(2) A description of the data used in the report; and

(3) A description of any data gaps encountered, how those gaps affect the analysis and any plans to fill those gaps.

d. The endangerment assessment shall include descriptions of any risk evaluation necessary to

support a proposal for a standard under R317-6-6.15.F.2 or for an Alternate Corrective Action Concentration Limit.

e. The Contamination Investigation shall include such other information as the Executive Secretary requires.

2. Proposed Corrective Action Plan

The proposed Corrective Action Plan shall include an explanation of the construction and operation of the proposed Corrective Action, addressing the factors to be considered by the Executive Secretary as specified in R317-6-6.15.E. and shall include such other information as the Executive Secretary requires. It shall also include a proposed schedule for completion.

E. Approval of the Corrective Action Plan

After public notice in a newspaper in the affected area and a 30-day period for opportunity for public review and comment, the Executive Secretary shall issue an order approving, disapproving, or modifying the proposed Corrective Action Plan. The Executive Secretary shall consider the following factors and criteria in making that decision:

1. Completeness and Accuracy of Corrective Action Plan.

The Executive Secretary shall consider the completeness and accuracy of the Corrective Action Plan and of the information upon which it relies.

2. Action Protective of Public Health and the Environment

a. The Corrective Action shall be protective of the public health and the environment.

b. Impacts as a result of any off-site activities shall be considered under this criterion (e.g., the transport and disposition of contaminated materials at an off-site facility).

3. Action Meets Concentration Limits

The Corrective Action shall meet Corrective Action Concentration Limits specified in R317-6-6.15.F, except as provided in R317-6-6.15.G.

4. Action Produces a Permanent Effect

a. The Corrective Action shall produce a permanent effect.

b. If the Corrective Action Plan provides that any potential sources of pollutants are to be controlled in place, any cap or other method of source control shall be designed so that the discharge from the source following corrective action achieves ground water quality standards or, if approved by the Board, alternate corrective action concentration limits (ACACLs). For purposes of this paragraph, sources of pollutants are controlled "in place" even though they are moved within the facility boundaries provided that they are not moved to areas with unaffected ground water.

5. Action May Use Other Additional Measures

The Executive Secretary may consider whether additional measures should be included in the Plan to better assure that the criteria and factors specified in R317-6-6.15.E are met. Such measures may include:

a. Requiring long-term ground water or other monitoring;

b. Providing environmental hazard notices or other security measures;

- c. Capping of sources of ground water contamination to avoid infiltration of precipitation;
- d. Requiring long-term operation and maintenance of all portions of the Corrective Action; and
- e. Periodic review to determine whether the Corrective Action is protective of public health and the environment.

F. Corrective Action Concentration Limits

1. Contaminants with specified levels

Corrective Actions shall achieve ground water quality standards or, where applicable, alternate corrective action concentration limits (ACACLs).

2. Contaminants without specified levels

For contaminants for which no ground water quality standard has been established, the proposed Corrective Action Plan shall include proposed Corrective Action Concentration Limits. These levels shall be approved, disapproved or modified by the Executive Secretary after considering U.S. Environmental Protection Agency maximum contaminant level goals, health advisories, risk-based contaminant levels or standards established by other regulatory agencies and other relevant information.

G. Alternate Corrective Action Concentration Limits

An Alternate Corrective Action Concentration Limit that is higher or lower than the Corrective Action Concentration Limits specified in R317-6-6.15.F may be required as provided in the following:

1. Higher Alternate Corrective Action Concentration Limits

A person submitting a proposed Corrective Action Plan may request approval by the Board of an Alternate Corrective Action Concentration Limit higher than the Corrective Action Concentration Limit specified in R317-6-6.15.F. The proposed limit shall be protective of human health, and the environment, and shall utilize best available technology. The Corrective Action Plan shall include the following information in support of this request:

- a. The potential for release and migration of any contaminant substances or treatment residuals that might remain after Corrective Action in concentrations higher than Corrective Action Concentration Limits;
- b. An evaluation of residual risks, in terms of amounts and concentrations of contaminant substances remaining following implementation of the Corrective Action options evaluated, including consideration of the persistence, toxicity, mobility, and propensity to bioaccumulate such contaminants substances and their constituents; and
- c. Any other information necessary to determine whether the conditions of R317-6-6.15.G have been met.

2. Lower Alternate Corrective Action Concentration Limits

The Board may require use of an Alternate Corrective Action Concentration Limit that is lower than the Corrective Action Concentration Limit specified in R317-6-6.15.F if necessary to protect human health or the environment. Any person requesting that the Board consider requiring a lower Alternate Corrective Action Concentration Limit shall provide supporting information as described in R317-6-6.15.G.3.

3: Protective of human health and the environment

The Alternate Corrective Action Concentration Limit must be protective of human health and the environment. In making this determination, the Board may consider:

- a. Information presented in the Contamination Investigation;
- b. Other relevant cleanup or health standards, criteria, or guidance;
- c. Relevant and reasonably available scientific information;
- d. Any additional information relevant to the protectiveness of a Corrective Action; and
- e. The impact of additional proposed measures, such as those described in R317-6-6.15.E.5.

4. Good cause

An Alternate Corrective Action Concentration Limit shall not be granted without good cause.

a. The Board may consider the factors specified in R317-6-6.15.E in determining whether there is good cause.

b. The Board may also consider whether the proposed remedy is cost-effective in determining whether there is good cause. Costs that may be considered include but are not limited to:

- (1) Capital costs;
- (2) Operation and maintenance costs;
- (3) Costs of periodic reviews, where required;
- (4) Net present value of capital and operation and maintenance costs;
- (5) Potential future remedial action costs; and
- (6) Loss of resource value.

5. Conservative

An Alternate Corrective Action Concentration Limit that is higher than the Corrective Action Concentration Limits specified in R317-6-6.15.F must be conservative. The Board may consider the concentration level that can be achieved using best available technology if attainment of the Corrective Action Concentration Limit is not technologically achievable.

6. Relation to background and existing conditions

a. The Board may consider the relationship between the Corrective Action Concentration Limits and background concentration limits in considering whether an Alternate Corrective Action Concentration Limit is appropriate.

b. No Alternate Corrective Action Concentration Limit higher than existing ground water contamination levels or ground water contamination levels projected to result from existing conditions will be granted.

6.16 OUT-OF-COMPLIANCE STATUS

A. Accelerated Monitoring for Probable Out-of-Compliance Status

If the concentration of a pollutant in any compliance monitoring sample exceeds an applicable permit limit, the facility shall:

1. Notify the Executive Secretary in writing within 30 days of receipt of data;
2. Initiate monthly sampling, unless the Executive Secretary determines that other periodic sampling is appropriate, for a period of two months or until the compliance status of the facility can be determined.

B. Violation of Permit Limits

Out-of-compliance status exists when:

1. two consecutive samples from a compliance monitoring point exceed:

- a. one or more permit limits; and

- b. the mean ground water pollutant concentration for that pollutant by two standard deviations (the standard deviation and mean being calculated using values for the ground water pollutant at that compliance monitoring point); or

2. the concentration value of any pollutant in two or more consecutive samples is statistically significantly higher than the applicable permit limit. The statistical significance shall be determined using the statistical methods described in Statistical Methods for Evaluating Ground Water Monitoring Data from Hazardous Waste Facilities, Vol. 53, No. 196 of the Federal Register, Oct. 11, 1988.

C. Failure to Maintain Best Available Technology Required by Permit

1. Permittee to Provide Information

In the event that the permittee fails to maintain best available technology or otherwise fails to meet best available technology standards as required by the permit, the permittee shall submit to the Executive Secretary a notification and description of the failure according to R317-6-6.13. Notification shall be given orally within 24 hours of the permittee's discovery of the failure of best available technology, and shall be followed up by written notification, including the information necessary to make a determination under R317-6-6.16.C.2, within five days of the permittee's discovery of the failure of best available technology.

2. Executive Secretary

The Executive Secretary shall use the information provided under R317-6-6.16.C.1 and any additional information provided by the permittee to determine whether to initiate a compliance action against the permittee for violation of permit conditions. The Executive Secretary shall not initiate a compliance action if the Executive Secretary determines that the permittee has met the standards for an affirmative defense, as specified in R317-6-6.16.C.3.

3. Affirmative Defense

In the event a compliance action is initiated against the permittee for violation of permit conditions relating to best available technology, the permittee may affirmatively defend against that action by demonstrating the following:

- a. The permittee submitted notification according to R317-6-6.13;

- b. The failure was not intentional or caused by the permittee's negligence, either in action or in failure to act;

- c. The permittee has taken adequate measures to meet permit conditions in a timely manner or has submitted to the Executive Secretary, for the Executive Secretary's approval, an adequate plan and schedule for meeting permit conditions; and
- d. The provisions of 19-5-107 have not been violated.

6.17 PROCEDURE WHEN A FACILITY IS OUT-OF-COMPLIANCE

A. If a facility is out of compliance the following is required:

1. The permittee shall notify the Executive Secretary of the out of compliance status within 24 hours after detection of that status, followed by a written notice within 5 days of the detection.
2. The permittee shall initiate monthly sampling, unless the Executive Secretary determines that other periodic sampling is appropriate, until the facility is brought into compliance.
3. The permittee shall prepare and submit within 30 days to the Executive Secretary a plan and time schedule for assessment of the source, extent and potential dispersion of the contamination, and an evaluation of potential remedial action to restore and maintain ground water quality and insure that permit limits will not be exceeded at the compliance monitoring point and best available technology will be reestablished.
4. The Executive Secretary may require immediate implementation of the contingency plan submitted with the original ground water discharge permit in order to regain and maintain compliance with the permit limit standards at the compliance monitoring point or to reestablish best available technology as defined in the permit.
5. Where it is infeasible to re-establish BAT as defined in the permit, the permittee may propose an alternative BAT for approval by the Executive Secretary.

6.18 GROUND WATER DISCHARGE PERMIT TRANSFER

- A. The permittee shall give written notice to the Executive Secretary of any transfer of the ground water discharge permit, within 30 days of the transfer.
- B. The notice shall include a written agreement between the existing and new permittee establishing a specific date for transfer of permit responsibility, coverage and liability.

6.19 ENFORCEMENT

These rules are subject to enforcement under Section 19-5-115 of the Utah Water Quality Act.

6.20 HEARING AND APPEALS

A. Any person may request a hearing before the Board who:

1. is denied a permit by rule by the Executive Secretary under R317-6-6.2;
2. objects to a discharge limit established by the Executive Secretary;
3. objects to conditions or limitations proposed or established by the Executive Secretary in the ground water discharge permit; or
4. objects to monitoring, sampling, information, or other requests or requirements made by the Executive Secretary;
5. objects to denial by the Executive Secretary of a proposed Corrective Action Plan under

R317-6-6.15; or

6. objects to conditions proposed or established by the Executive Secretary in a Corrective Action Plan under R317-6-6.15.

B. Any person who is denied a permit or whose permit is proposed to be terminated or revoked by the Executive Secretary may appeal that decision to the Executive Director of the Department of Environmental Quality pursuant to Section 19-5-112(2).

C. Hearings under R317-6 will be conducted using the Utah Administrative Procedures Act, Title 63, Chapter 46b.

KEY: water quality, ground water

Date of last substantive amendment: March 20, 1995

Notice of Continuation December 12, 1997

This rule is authorized by, and implements or interprets, the following: 19-5

Converted by the Division of Administrative Rules. Questions about the *Utah Administrative Code* should be addressed to:

Mike Broschinsky Administrative Code Editor
PO Box 141007
Salt Lake City, Utah 84114-1007
Tel. (801) 538-3003

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[\[Utah Administrative Code List of Titles\]](#) | [\[Search Rules Publications\]](#)

RECD JAN 18 1999

UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF COLORADO

In re:)
)
ATLAS CORPORATION,) Case No. 98-23331 DEC
) Chapter 11
EIN: 15-5503312)
)
Debtor.)

STATE OF UTAH'S SUPPLEMENT TO ITS PROOF OF CLAIM

On October 21, 1998, the State of Utah filed an initial Proof of Claim in this proceeding. The State hereby supplements its claim with respect to Item 4 on the Proof of Claim form ("Total Amount of Claim at Time Case Filed").

At this date, the State of Utah asserts a \$77 million obligation relating to the two items described on the attachment to the State of Utah's initial Proof of Claim ("Attachment") dated October 21, 1998 *i.e.*, "Groundwater Corrective Action," as described in part A of the Attachment and "Natural Resource Damage Claim," as described in part B of the Attachment. The \$77 million obligation was arrived at by evaluating the cost of constructing, operating and maintaining a passive reactive groundwater treatment system extending across the width of the uranium plume to accommodate local groundwater hydrologic conditions; computing monitoring and closure costs; and defining the cost to remove and dispose of the reactive wall materials after 100 years of operation in order to avoid Colorado River erosion and subsequent

EXHIBIT F

Exhibits 100-110

pollution. Finally, the \$77 million obligation is premised on the assumption that the tailings pile will provide no additional seepage or contamination discharge to groundwater after the cover is constructed over the tailings pile or the pile is removed.

Dated this 14th day of January, 1999.

Respectfully submitted,
JAN GRAHAM
Attorney General



Denise Chancellor (Utah Bar No. 5452)
Fred G Nelson (Utah Bar No. 2383)
Assistant Attorneys General
160 East 300 South, 5th Floor
P.O. Box 140873, Salt Lake City UT 84114-0873
Telephone: (801) 366-0290; Fax: (801) 366-0292

CERTIFICATE OF SERVICE

I certify that on January 14, 1999, I caused a copy of the foregoing State of Utah's Amended Proof of Claim to be served by U.S. mail, postage prepaid, unless otherwise noted, upon the following:

Clerk
U.S. Bankruptcy Court
U.S. Customs House
731 19th Street
Denver CO 80202-2508
(Original served by
Federal Express)

Office of the U.S. Trustee
721 19th Street, Ste 408
Denver, CO 80202

Harvey Sender, Esq.
Sender & Wasserman,
1999 Broadway, Ste 2305
Denver CO 80202

Anthony Thompson,
Shaw, Pittman, Potts &
Trowbridge
2300 N Street, N.W.
Washington DC
20037-8007

Thomas C. Bell
Davis Graham & Stubbs
370 17th St, Ste 4700
Denver, CO 80201-0185

Robert D. Clark
Assistant U.S. Attorney
U.S. Dept. of Justice
1961 Stout St., Ste 1100
Denver, CO 90294

Kenneth Strong
Harding Lawson Assoc.
7655 Redwood Blvd.
Novato, CA 94945

Peter A. Chapman
24 Perdicaris Place
Tretton NJ 08618

Howard Tallman
Block Marcus Williams
1700 Lincoln St., Ste 3550
Denver Co 80203-1025

John Philbrook
Harding Lawson Assoc.
707 17th St., Ste 2400
Denver Co 80202

Thomas C. Seawell
1600 Stout St. Ste 700
Denver CO 80202

Robert A. Bassett
370 17th St Ste 4400
Denver Co 80202

Charley McVay
Gorsuch Kirgis LLP
Tower I, Ste 1000
1515 Arapahoe Street
Denver CO 80202

Dennis A Hanson
Wood Ris & Hames, PC
1775 Sherman St Ste 1600
Denver CO 80203-4313

Dennis J. Bartlett
Kerr Friedrich Brosseau
Bartlett, LLC
1600 Broadw.
Denver CO 80202

Caroline C. Fuller
One Norwest Center,
Ste 2400
1700 Lincoln St
Denver CO 80203-4524

Sonia A. Chae
Securities & Exchange
Commission
500 W Madison St
Ste 1400
Chicago IL 60661-2511

Edward R. Farley, Jr
188 Parkside Drive
Princeton NJ 08540

Elizabeth Temkin
Nathan M. Longenecker
Ballard Spahr & Ingersoll
1225 17th St., Ste 2300
Denver CO 80202

Atlas Corporation
370 17th St Ste 3140
Denver CO 80202


Denise Chancellor



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY

*File
cc: Carl/Balk*

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Don A. Ostler, P.E.
Director

288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870
(801) 538-6146 Voice
(801) 538-6016 Fax
(801) 536-4414 T.D.D.

Water Quality Board
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Chairman

Lynn F. Penz
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R. Rex Ausburn, P.E.
David S. Bowles, Ph.D., P.E.
Nan Bunker

Leonard Ferguson
Dianne R. Nielson, Ph.D.

Joe C. Nielson
K.C. Shaw, P.E.

J. Ann Wechsler
Leroy H. Wullstein, Ph.D.

Don A. Ostler, P.E.
Executive Secretary

RECORDED

JAN 23 1997

Stoel Rives S.L.C.

January 8, 1996

7

Mr. James Holtkamp
Stoel Rives Attorneys
One Utah Center -
201 S. Main Street, Suite 1100
Salt Lake City, UT 84111-4904

Dear Mr. Holtkamp:

Subject: Atlas Uranium Mill Tailings, November 14, 1996 Schedule Modification
Response: Schedule Modification for Required Submittals.

This letter is to respond to your November 14, 1996 submittal referenced above, and to clarify recent discussions regarding submittal of the required Ground Water Contaminant Investigation (GWCI) Report and Ground Water Corrective Action (GWCA) Plan for the Atlas uranium tailings facility near Moab, Utah specified in our September 12, 1996 Notice.

We agree that submittal of a schedule for completion of the GWCI Report and GWCA Plan can be deferred until after the Nuclear Regulatory Commission's (NRC) publication of the Final Environmental Impact Statement regarding the Atlas tailings reclamation plan, anticipated sometime in March, 1997.

There also appears to be mutual agreement with the objective of avoiding the need to revisit ground water issues after closure of the tailings pile, which could potentially require retrofit of the NRC-approved closure design. Therefore, it is essential Atlas resolve State concerns regarding groundwater and surface water protection before construction or completion of any NRC-sanctioned closure mechanisms, including both closure of the tailings pile and decommissioning of the mill site and vicinity. In addition, resolution of State concerns will need to focus on both: 1) the Atlas Groundwater Corrective Action Plan currently approved or to be approved under the NRC license, and 2) the upcoming Atlas application to the NRC for groundwater alternate concentration limits for the uranium tailings facility.



EXHIBIT G
Attachment No. 012

Mr. James Holtkamp
January 8, 1996
Page 2

Therefore, pursuant to previous discussions, the terms of the referenced September 12, 1996 Notice is hereby ammended in accordance with UAC R317-6-6.15.C.1, as follows:

1. Atlas shall provide a final schedule for completion and submittal of the required GWCI Report and GWCA Plan within 30 days of NRC publication in the Federal Register of the availability of the Final Environmental Impact Statement for the reclamation of the Atlas uranium mill tailings near Moab, Utah.
2. Atlas shall resolve all State concerns regarding the GWCI Report and GWCA Plan, to the satisfaction of the Executive Secretary, before construction of closure mechanisms that may require retrofit to meet state requirements. The schedule, required by Item 1 above, must reflect this objective.

If you have any questions about this approval, please call Loren Morton, Division of Radiation Control, (801) 536-4250. We appreciate your cooperation and continued efforts to ensure resolution of these issues and protection of Utah's water resources.

Sincerely,



Don A. Ostler, P.E.
Director

DAO/LBM:FCP:wlm

cc: Dianne Nielson, DEQ
Bill Sinclair, DRC
Loren Morton, DRC
Denise Chancellor, Attorney General's Office
Richard Blubaugh, Atlas
George Robinson, Harding Lawson Associates
Tony Thompson, Shaw, Pittman, Potts & Trowbridge
Mike Fliegel, NRC

F:\wq\clerical\wmaxell\capsch3.ltr
File: Atlas GW Corrective Action Plan



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY

Michael O. Leavitt
Governor

Dianne R. Nielson, Ph.D.
Executive Director

Don A. Ostler, P.E.
Director

288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870
(801) 538-6146 Voice
(801) 538-6016 Fax
(801) 536-4414 T.D.D.

Water Quality Board
Leroy H. Wullstein, Ph.D.
Chairman

Lynn F. Pett
Vice Chairman

Robert G. Adams

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Leonard Ferguson

Dianne R. Nielson, Ph.D.

K.C. Shaw, P.E.

J. Ann Wechsler

Don A. Ostler, P.E.
Executive Secretary

Certified Mail

(return receipt requested)

November 20, 1997

Mr. Richard Blubaugh
Vice President, Environmental and Governmental Affairs
Atlas Corporation
370 Seventeenth Street, Suite 3150
Denver, CO 80202

Re: Atlas Uranium Mill Tailings, Moab, Utah; Schedule Modification for Required Submittals:
Notice to Submit Required Schedule in 30 Days.

Dear Mr. Blubaugh:

In a letter of January 8, 1997, the Division of Water Quality (DWQ) agreed that submittal of a schedule for submission of a Ground Water Contaminant Investigation (GWCI) Report and a Ground Water Corrective Action (GWCA) Plan could be deferred until after NRC issuance of a Final Environmental Impact Statement (FEIS). This schedule deferral was approved by DWQ in response to a November 14, 1996 request from Atlas counsel, Mr. James Holtkamp. Central to Mr. Holtkamp's request was the concept that this deferral of State-mandated action on groundwater issues would avoid complications of "... inconsistent requirements and ... thorny jurisdictional issues".

At the time of our January 8, 1997 agreement to defer, it was our understanding that the NRC would publish the FEIS sometime in March, 1997. Obviously, that time has long since passed and the FEIS has yet to be published.

Since our January 8, 1997 schedule modification, intensive DWQ water quality sampling and analysis has been conducted of the Colorado River in the immediate vicinity of the tailings pile. These samples collected January, 1997 have shown the tailings pile has caused local river water quality to exceed State water quality standards, and thus resolution of these issues does not appear to be achievable through the NRC process. DWQ advised NRC that the river exceeded State water quality standards in a letter of October 9, 1997. A copy of this letter was also sent to Atlas.

The authority and responsibility to protect the Colorado River resides within DWQ. Based on the lack of NRC authority over matters of Colorado River water quality, lack of publication of the FEIS,



Mr. Richard Blubaugh
November 20, 1997
Page 2

hydraulic connection of contaminated groundwater at the pile with the Colorado River, and the adverse impact of the tailings pile on river water quality recently evidenced by DWQ sampling; we have concluded that deferral of State action in this matter to NRC time lines and milestones is no longer appropriate.

Notice to Submit a New Schedule

Pursuant to UAC R317-6-6.15C.1, Atlas is hereby required to submit within 30 days of receipt of this notice a proposed schedule for submission of the GWCI Report and the GWCA Plan. After review of this Atlas schedule, the Executive Secretary may approve, reject, or modify it.

If you have any questions regarding this notice or the Utah groundwater corrective action order process, please call Dennis Frederick of my staff at (801) 538-6146, or Loren Morton at the Division of Radiation Control at (801)536-4262.

We appreciate your cooperation in resolution of the Atlas uranium mill tailings reclamation plan and in your efforts to protect Utah water resources.

Sincerely,



Don A. Ostler, P.E.
Executive Secretary
Utah Water Quality Board

DAO/LBM/LJM:lm/fb

cc: Dianne Nielson, DEQ
Bill Sinclair, DRC
Loren Morton, DRC
Denise Chancellor, Attorney General
Mike Fliegel, NRC
James Holtkamp, Stoel Rives
George Robinson, Harding Lawson Associates
Grand County Council
Southeastern District Health Department
Dave Arriotti, District Engineer



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY

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Don A. Ostler, P.E.
Director

233 North 1460 West
P.O. Box 144370
Salt Lake City, Utah 84114-4370
(801) 538-6146 Voice
(801) 538-6016 Fax
(801) 536-4414 T.D.D.

1/17/98
Copy:
Dale Edwards
Carole Ostler
Jim Holtkamp
Tony Thompson

Water Quality Board
Teroy H. Wullstein, Ph.D.
Chairman
Lynn F. Pett
Vice Chairman
Robert G. Adams
R. Rex Ausburn, P.E.
Nan Bunker
Leonard Ferguson
Dianne R. Nielson, Ph.D.
K.C. Shaw, P.E.
Ronald C. Sims, Ph.D.
J. Ann Wechsler
William R. Williams
Don A. Ostler, P.E.
Executive Secretary

February 17, 1998

Mr. Richard E. Blubaugh
Vice President of Environmental and Governmental Affairs
Atlas Corporation
370 Seventeenth Street, Suite 3150
Denver, CO 80202

Re: Dec. 5, 1997 Atlas Response for submission of Ground Water Corrective Schedule

Dear Mr. Blubaugh:

We received, on Dec. 19, 1997 from your legal council, Mr. James Holtkamp, your response to our Nov. 20, 1997 request for the submission of a schedule for undertaking the provisions of a ground water corrective action plan as specified in UAC R317-6-6.15.C. We note that the schedule which is depicted in a flow chart prepared by Harding Lawson Associates calls for the submission of a Ground Water Corrective Action Plan to the State on Dec. 10, 1998. Upon consideration, we find this date to be acceptable for the submission of the corrective action plan. However, we do not find the overall schedule to be complete or adequate.

In this regard you will note that the referenced rule requires that the required schedule will include a date for the submission of a Ground Water Contamination Investigation Report, for Executive Secretary approval, as an interim milestone prior to the Corrective Action Plan. While we note several references to similar activities in the flow chart, it is not clearly specified that the Contamination Investigation will be done and submitted to the State. We feel this is a critical omission, in that it is imperative the State have the opportunity to review and comment on the adequacy of any information which will be used in the preparation of a corrective action plan. It would seem essential for this to occur in order to maximize the preparation of a plan which would satisfy the provisions of the referenced rule. Therefore, we are requesting your submission of the unaddressed elements of the schedule within 30 days of receipt of this letter.

In the preparation of the additional schedule items, we offer for your consideration the following comments in regards to items in the Dec. 5 correspondence:

1. We acknowledge your continuation of appeal rights as specified in your Oct. 15, 1996 correspondence.
2. There is an inference that the delays in completion of the NRC final Environmental Impact Statement are a direct result of State requests and additional delays may result from our continued involvement. Please be advised that as an owner/operator of a facility known to have polluted groundwater in violation of UCA Section 19-5-107, Atlas is required to comply with the provisions of the Utah Ground Water Protection Regulations, as found in UAC R317-6-6.15..
3. Your legal council conditioned the submittal of your schedule to automatically incorporate any change required by the NRC and be accepted by the State. While we think reasonably and prudent minds will prevail in resolving these issues and we have already demonstrated our intent to be flexible, we cannot agree to this condition.



February 6, 1998

Page 2

4. Lastly the appropriateness of our request to you to submit a schedule is questioned for several reasons which must be corrected for the record:
- a. The statement that the State does not acknowledge any upstream contamination indicate misunderstanding of State application of stream standards to a discharge of contaminants. Regardless of any other contribution of contaminants to the Colorado River, our position is derived from site specific monitoring indicating there is a source of contamination originating at the site which is in excess of Water Quality Standards established for that stream segment. This site specific monitoring evaluated water quality upstream and downstream and thus is independent of any other sources.
 - b. The letter contains a statement that the NRC has preemptive jurisdiction over nonradiological components of byproduct material. While the NRC does have sole regulatory jurisdiction for radiologic contaminants, dual jurisdiction exists between the State and NRC for non-radiologics (see Kerr-McGee vs. City of West Chicago, 7th Circuit Court of Appeals, 1990, Citation 914F2D820). This fact is also confirmed by an August 8, 1997 NRC letter (copy enclosed) which states:

“...NRC and the State of Utah share concurrent jurisdiction over several other nonradiological constituents”.

Therefore, Atlas has a responsibility to comply with State regulatory requirements as they pertain to non-radiologic contaminants.

Should you have any questions concerning the above, please contact this office.

Sincerely,

Utah Water Quality Board



Don A. Ostler, P.E.
Executive Secretary

DAO:ljm/fb

Enclosure:

cc: Bill Sinclair, DRC
Denise Chancellor, Attorney General
George Lawson, Harding etal (W/encl)
Tony Thompson, Shaw etal (W/encl)
Mike Fliegel, NRC

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FILE:

use of standard review plans and design procedures that reflect an approach to tailings management that incorporates an appropriate level of safety.

Of considerable importance in the NRC staff's assessment of Atlas' proposed design of the rock apron is the concept of "reasonable assurance." NRC regulations require (Part 40, Appendix A, Criterion 6) "...a design which provides reasonable assurance of control of radiological hazards to...be effective for 1000 years...." This requirement comes directly from U.S. Environmental Protection Agency (EPA) requirements in 40 CFR Part 192. These standards do not require absolute nor even near certainty.

Several reasons can be offered to justify the appropriateness of a "reasonable assurance" requirement, rather than a more conservative requirement. Of primary importance is that exposure to uranium mill tailings do not pose an immediate acute risk to the health and safety of individuals. Rather, the risk posed by tailings is from continual exposure to low levels of radioactivity and is a long-term cumulative risk. If control of tailings were lost (for example, if an earthquake beyond the design basis were to damage the cover and expose tailings), actions could be taken to repair the damage, with little likelihood of endangering individuals.

Additionally, uranium mill tailings disposal sites will be under perpetual government custodial care. If the features providing control of the tailings were damaged or compromised in the future, the government custodian could assess the situation and provide repairs. Although NRC standards require that the design for control of radiological hazards not rely on



UNITED STATES
NUCLEAR REGULATORY COMMISSION
 WASHINGTON, D.C. 20545-0001

*cc: B. [unclear]
 Fox: [unclear]
 H. [unclear]
 G. [unclear]
 D. [unclear]*

January 26, 1999

Ms. Susan D. Daggett
 Mr. Robert Wiygul
 Ms. Marie A. Kirk
 Earthjustice Legal Defense Fund
 1631 Glenam Place, Suite 300
 Denver, CO 80202

SUBJECT: 10 CFR 2.206 PETITION CONCERNING ATLAS CORPORATION

Dear Mss. Daggett and Kirk and Mr. Wiygul:

This letter acknowledges receipt of your letter of January 11, 1999, on behalf of the Grand Canyon Trust and other parties (collectively identified as "Trust") requesting that the U.S. Nuclear Regulatory Commission (NRC) take immediate action with regard to Source Material License No. SUA-917 held by Atlas Corporation for its shutdown facility near Moab, Utah. You assert, as grounds for your request, that NRC is currently in violation of numerous provisions of the Endangered Species Act (ESA) as previously indicated in two 60-day letters to the NRC (the first on October 12, 1998, and a supplemental letter on November 13, 1998.) You assert that the mill tailings pile at the no longer operating Atlas site is currently leaching toxic chemicals into the Colorado River at levels that are harming and killing endangered fish, seriously degrading the quality of at least a mile of river where these fish spawn and live, and threatening the extinction of these species. You request that NRC take six immediate actions to halt these impacts and to ensure the conservation of the endangered species. The specific actions requested are as follows:

- 1) Set water quality standards for the Atlas site that are protective of endangered fish and incorporate those standards into the Atlas license.
- 2) Require immediate corrective action to eliminate the take of and jeopardy to endangered fish from the Atlas site.
- 3) Prohibit any irreversible and irretrievable commitment of resources for the purpose of stabilizing and capping the tailings pile in its present location in the Colorado River floodplain until after consultation on the entire action has been completed.
- 4) Require the removal of the tailings out of the floodplain of the Colorado River for long-term disposal.

EXHIBIT I

- 5) Consult with the U.S. Fish and Wildlife Service to develop a specific plan to conserve the endangered Colorado squawfish and razorback sucker, including, but not limited to, steps to protect the Colorado squawfish nursery areas in the vicinity of the Atlas pile.
- 6) Take all other actions necessary to eliminate taking, prevent jeopardy to, and insure the recovery of, the Colorado squawfish and the razorback sucker and to preserve the designated critical habitat on which these species depend.

→ Your Petition has been referred to the staff for action pursuant to 10 CFR 2.206 of the NRC's regulations. As provided by section 2.206, action will be taken on your request within a reasonable time. Within the next week, I will send you, for your information, a copy of the notice that will be filed with the Office of the Federal Register for publication.

~~We have considered the Trust's request for immediate action on in that context. Based on this review, we conclude that none of the Trust's addresses a health, safety, or environmental concern that requires emergency steps before a complete review as provided for in section 2.206.~~

→ The Trust's request is based on asserted impacts to endangered species in the Colorado River. NRC has consulted with the U.S. Fish and Wildlife Service (FWS) in conformance with the ESA. In July 1998, FWS issued its final Biological Opinion (FBO) on this matter including a Reasonable and Prudent Alternative (RPA) and Reasonable and Prudent Measures (RPMs.)
→ ~~The RPA and RPMs do not require the immediate actions requested by the Trust's petition. While we recognize that the Trust is disputing the FBO in a Federal court action, NRC is relying on the FWS as the expert Federal agency with regard to matters related to the ESA, and at this point, our independent study has not yet revealed any thing in the FBO that would cause us to do otherwise in this regard.~~

→ ~~Moreover, while you request emergency action, we are aware of no practicable emergency action that could be taken. Even the ultimate action you recommend (moving the tailings to another location off the floodplain of the Colorado River) will require considerable time for planning and even more time to actually implement. You should be aware that the licensee has undertaken steps to reduce the seepage of contaminants to the groundwater, which will result in a reduction of contaminants reaching the river. Actions to reduce seepage to the ground water are the only activities (other than monitoring) now being undertaken at the site, mill operations having ceased in 1984. These actions do not appear to us to expend resources unnecessarily or in contradiction of the solution you recommend. This matter will be further considered in the course of our 2.206 review~~

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If you have any further questions, please feel free to contact either me or Mr. N. King Stablein, the Acting Branch Chief responsible for the Atlas site. I can be reached at (301) 415-7358, and Mr. Stablein can be reached at (301) 415-7238.

Sincerely,



Martin J. Virgilio, Deputy Director
Office of Nuclear Material Safety
and Safeguards

cc: See attached list

SENDER & WASSERMAN, P. C.
ATTORNEYS & COUNSELORS AT LAW
1999 BROADWAY, SUITE 2305
DENVER, COLORADO 80202

TELEPHONE
(303) 296-1999
TELECOPIER
(303) 296-7600

HARVEY SENDER
ALSO MEMBER OF NEW MEXICO BAR
e-mail: sender@sendwass.com

January 29, 1999

Robert Clark, Esq.
Assistant U. S. Attorney
1961 Stout St. #1100
Denver, CO 80294

RE: Atlas Corp.

Dear Bob:

In accordance with our earlier conversation, the purpose of this letter is to provide you with a liquidation analysis for Atlas, i.e. Atlas Corp. and its subsidiaries, should the State of Utah and NRC be successful in asserting their claims in the amounts requested and the priority requested. On or before the bar date the State of Utah filed a claim in the amount of \$77 million dollars as a priority administrative expense. The NRC filed a claim of \$44 million dollars seeking the same priority. Atlas clearly disputes the amount and priority of both claims. It also disputes the validity and jurisdiction as to the Utah claim. A formal objection to the Utah claim will be filed next week. For purposes of this letter only, the assumption is that both entities are successful in maintaining their claim.

The Utah claim has no collateral. The NRC has collateral consisting of the ACSTAR bond of \$6.5 million. For purposes of this analysis, I have assumed that ACSTAR will not claim it has the same priority as NRC upon payment of the bond amount. The result is that after applying the collateral, NRC has a claim of \$37.5 million and Utah has a claim for \$77 million. Therefore there is effectively a 2/3 1/3 split between Utah and NRC of what is left after liquidation.

For purpose of liquidation, I am assuming that the time period necessary to accomplish the sale of the assets to be sold would be before the end of this year. The liquidation costs, given the complexity of the assets and the need to sell some of them as going concerns, would be similar regardless of in what chapter of the Code the case proceeds. During that time period, the liquidation and other administrative costs will consume most of the net proceeds from the sale of Cornerstone.

The principal assets then remaining would be the land at Moab, the water rights at Moab, the mining interest at Grassy Mountain and Gold Bar, and the equity interest in Arisur. In earlier correspondence with the NRC, the land was valued at \$4.2 million assuming it was cleaned up. The water rights were valued at \$800,000. All of the \$4.2 million can not be achieved without the pile first being covered and a portion of the land being then made available for sale on the open market. Since in this analysis, the land would not be cleaned up by anyone on behalf of the estates, that number would have to be substantially discounted. Assuming the true net proceeds from the land is \$2.2 million, the land and water rights would generate \$3,000,000. This is based upon the assumption that a portion of the land can still be sold with minor cleanup. The valuation division provided is purely arbitrary since no separate appraisal on that portion has been prepared. The then remaining Title X receivable would generate an additional \$1,000,000 resulting in net funds from Moab of \$4,000,000.

As to Grassy Mountain, the property is owned by Atlas Precious Metals, Inc. There is an issue as to the value of the property and the distribution priority between among Atlas Corp. and the creditors of Atlas Precious Metals. A reasonable estimate of the net proceeds from the property available to Atlas is \$1,000,000.

The other U.S. mining property is Gold bar, which is held by Atlas Gold Mining Inc. In a liquidation, there is unlikely to be any net value to Atlas from this asset. In a going concern transaction, where someone assumes the bond and environmental liabilities, there a potential recovery of as much as \$1,000,000.

The remaining asset is Arisur. If the company is shut down, the senior secured creditor, CAF, would seize the assets in Bolivia. If the company were sold as a going concern, a reasonable expected net value would be \$2,000,000. In a reorganization, with the new financing, the long term upside in this asset is greater, but for purposes of liquidation, either in Chapter 11 or 7, the realistic range would be 0 to \$2,000,000.

Assuming that all of the assets are sold as a going concern, in a Liquidating Trust under Chapter 11, the following values result:

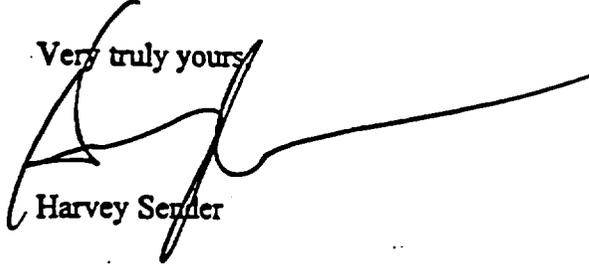
Moab	\$4,000,000
Grassy	1,000,000
Gold Bar	1,000,000
Arisur	<u>2,000,000</u>
Total	\$8,000,000

Assuming a complete shut down and liquidation in Chapter 7, the values go down by the \$3,000,000 attributable to Gold Bar and Arisur. Therefore, the range of available assets goes from \$5,000,000 to \$8,000,000. If both Utah and NRC are successful in their claims, Utah would receive between \$3,200,000 to \$5,200,00. NRC would receive between \$1,800,000 to \$2,800,000.

Therefore, NRC would have a total of between \$8.3 million to \$9.3 million to maintain and clean up the site. The amount would be insufficient under any scenario to accomplish surface reclamation alone, let alone deal with the ground water in any manner.

Please call me if you need any further clarification of any of the valuations or issues discussed herein. Thank you for your cooperation.

Very truly yours



Harvey Sender

HS/sjp

cc: Howard Tallman
Tony Thompson
Richard Blubaugh
Kelly Sweeney

CERTIFICATE OF MAILING

I hereby certify that on this 12th day of February, 1999, true and correct copies of the foregoing **ATLAS CORPORATION'S OBJECTION TO UTAH'S CLAIM FOR ADMINISTRATIVE EXPENSE** were placed in the United States mail, postage prepaid, addressed to:

Office of the U.S. Trustee
721 - 19th Street, Suite 408
Denver, CO 80202

Atlas Corporation
370 - 17th Street, Suite 3140
Denver, CO 80202

Linder Dividend Fund, Inc.
Attn: Bob Lange/Eric Rybeck
7711 Carondelet Avenue, Suite 700
St. Louis, MO 63105

Curt Goldschmidt
c/o Steven Banzahaf, Esq.
2135 E. Grant Rd.
Tucson, AZ 85719

John Devaney & Catherine Weaver
c/o Thomas C. Seawell, Esq.
1600 Stout Street, Suite 700
Denver, CO 80202

John Philbrook
c/o Ken Strong
Harding Lawson & Associates
7655 Redwood Blvd.
P.O. Box 578
Novato, CA 94947

Howard Tallman
Block Marcus Williams LLC
1700 Lincoln St., Suite 3550
Denver, CO 80203-1025

Denise Chancellor, Esq.
Fred G. Nelson, Esq.
Utah Attorney General's Office
P.O. Box 140873
Salt Lake City, Utah 84114-0873

Robert D. Clark
Assistant United States Attorney
U.S. Department of Justice
1961 Stout Street, Suite 1100
Denver, CO 90294



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UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF COLORADO

IN RE:)	
)	
ATLAS CORPORATION,)	Case No. 98-23331 DEC
a Delaware corporation	)	Chapter 11
EI#: 15-5503312)	
)	
ATLAS GOLD MINING INC., a Nevada Corp.	)	Case No. 99-10889 CEM
EI#:84-1023843	)	Chapter 11
)	
ATLAS PRECIOUS METALS INC., a Nevada	)	Case No. 99-10890 SBB
Corp., EI#: 87-0400332	)	Chapter 11
)	
)	
Debtors.	)	(Jointly Administered Under
	)	Case No. 98-23331 DEC)

NOTICE PURSUANT TO LOCAL RULE 202 AND FEDERAL RULE OF
BANKRUPTCY PROCEDURE 3007 OF ATLAS CORPORATION'S
OBJECTION TO UTAH'S CLAIM FOR ADMINISTRATIVE EXPENSE

TO ALL PARTIES IN INTEREST:

NOTICE IS HEREBY GIVEN that an Objection to Utah's Claim for Administrative Expense has been filed by Atlas Corporation seeking an Order disallowing Claim Utah's claim for administrative expense. A copy of the Objection is attached.

Pursuant to Rule 202 of the Local Rules of Bankruptcy Procedure, and Federal Rule of Bankruptcy Procedure 3007, **you must file a written response and request for hearing with the Court on or before March 17, 1999** and serve a copy thereof on the undersigned attorney. Responses and requests for hearing shall clearly specify the grounds upon which they are based, including a citation of supporting legal authority, if any. General objections will not be considered by the Court.

In the absence of a timely and substantiated Response and Request for Hearing by any interest party, the Court may grant the relief requested by Atlas Corporation without any further notice to creditors or other interested parties.

4/12

Dated this 12th day of February, 1999.

Respectfully submitted

SENDER & WASSERMAN, P.C.

By: 

Harvey Sender, #7546

Bonnie A. Bell, #14923

Daniel J. Garfield, #26054

1999 Broadway, Suite 2305

Denver, Colorado 80202

(303) 296-1999; Fax No. (303) 296-7600

E-mail: sender@sendwass.com

ATTORNEYS FOR ATLAS CORPORATION

13

February 25, 1999

Memorandum

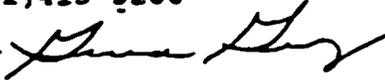
TO: Paul Boudreaux, Esq.
DOJ W/MR; ENRD/DOJ; tel:(202)305-0216; fax (202) 305-0275

Bob Clark, Esq.
AUSA/Denver; tel:(303)844-3885; fax (303) 844-0098

Bob McCue
FWS, Denver; tel:(303)236-8155; fax (303)236-8163

Joe Holonich, NRC-Rockville
tel: (301)415-7238 (or 7319); fax (301)415-5397

Marjorie Nordlinger, Esq.
NRC - OGC; tel: (301) 415-1616; fax (301)415-3200

FROM: Gina Guy and Steve Hoffman; DOI, Denver 

RE: Atlas Conference Call - Monday, 3/1 -11 a.m. MST/1 p.m. EST

Paul Boudreaux asked me to set up a call on Atlas, preferably Monday afternoon, March 1, due to the impending response date of March 10 to the plaintiff's Motion for PI in the ESA litigation pending in the district court in Utah. AUSA Bob Clark asked for the 11 a.m. time, since he has a hearing that afternoon at 1:30. It is very important that he participate because he is counsel for the United States/NRC in the Atlas bankruptcy.

Please let us know ASAP if you can't join us. We will arrange the call, in which I hope we can discuss and clarify for everyone:

1. Status of Atlas bankruptcy and implications for cleanup. What decisions need to be made, when and by whom? When is bankruptcy court decision likely? Impact on ESA case?
2. Status of ESA litigation against NRC and Atlas in Utah. How does this relate to bankruptcy options?
3. Status of NRC decisionmaking - EIS, ROD, license amendment(s). Possible relationship of bankruptcy options to NRC decisions. Timeline?
4. Status of the biological opinion from NRC perspective.

H/13

Maria: Your copy.
Steve 14

UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF COLORADO

IN RE:)	
ATLAS CORPORATION, a Delaware corporation	)	Case No. 98-23331 DEC
EI#: 15-5503312	)	Chapter 11
)	
ATLAS GOLD MINING INC., a Nevada Corp.	)	Case No. 99-10889 DEC
EI#: 84-1023843	)	Chapter 11
)	
ATLAS PRECIOUS METALS INC., a Nevada	)	Case No. 99-10890 SBB
Corp., EI#: 87-0400332	)	Chapter 11
)	
Debtors.	)	(Jointly Administered Under
	)	Case No. 98-23331 DEC)

NOTICE PURSUANT TO LOCAL RULE 202 OF ATLAS
CORPORATION'S AMENDED MOTION FOR ORDER ABANDONING MOAB
URANIUM TAILINGS SITE PURSUANT TO 11 U.S.C. SECTION 554(a)

Notice is hereby given that the Atlas Corporation ("Atlas") has filed an Amended Motion for Order Abandoning Moab Uranium Tailings Site Pursuant to 11 U.S.C. § 554(a). Atlas is the fee owner of a closed uranium processing mill and adjoining property consisting of approximately 400 acres in Moab, Utah (the "Mill Property"). Unless the United States Nuclear Regulatory Commission approves the amendment of Atlas' Materials License to maintain and remediate the Mill Property and the proposed remediation plan, there is no value or equity which can be realized by the estate for distribution to creditors from the Mill Property and it is burdensome to the estate. This Amended Motion does not seek abandonment of any water rights arising from the Colorado River. It is in the best interests of the estate to abandon the Mill Property pursuant to 11 U.S.C. Section 554(a). In support of the Amended Motion, Atlas incorporates the factual and legal arguments in its Objection to the Nuclear Regulatory Commission's Claim for Administrative Expense, filed with the Court on February 25, 1999.

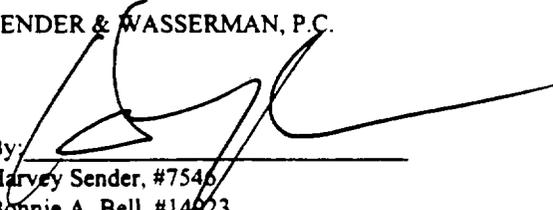
A copy of the pleading is available for inspection in the Bankruptcy Court Clerk's Office, or upon request from the undersigned attorney.

Pursuant to Rule 202 of the Local Rules of Bankruptcy Procedure, if you desire to oppose this action you must file a written objection and request for a hearing with the Court on or before **March 22, 1999**, and serve a copy thereof on the undersigned. Objections and requests for hearing shall clearly specify the grounds upon which they are based, including the citation of supporting legal authority, if any. General objections will not be considered by the Court.

In the absence of a timely and substantiated objection and request for hearing by an interested party, the Court may approve or grant the aforementioned application without any further notice to creditors.

Dated February 24, 1999.

SENDER & WASSERMAN, P.C.

By: 
 Harvey Sender, #7546
 Bonnie A. Bell, #14023
 Daniel J. Garfield, #26054
 1999 Broadway, Suite 2305
 Denver, Colorado 80202
 (303) 296-1999; Fax (303) 296-7600
 E-mail sender@sendwass.com
 ATTORNEYS FOR DEBTOR

A/14

UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF COLORADO

IN RE:)	
)	
ATLAS CORPORATION, a Delaware corporation	)	Case No. 98-23331 DEC
EI#: 15-5503312	)	Chapter 11
)	
ATLAS GOLD MINING INC., a Nevada Corp.	)	Case No. 99-10889 DEC
EI#:84-1023843	)	Chapter 11
)	
ATLAS PRECIOUS METALS INC., a Nevada	)	Case No. 99-10890 SBB
Corp., EI#: 87-0400332	)	Chapter 11
)	
Debtors.	)	(Jointly Administered Under
	)	Case No. 98-23331 DEC)

**NOTICE PURSUANT TO LOCAL RULE 202 OF ATLAS CORPORATION'S AMENDED MOTION FOR ORDER
REJECTING MATERIALS LICENSE FOR MOAB URANIUM TAILINGS
SITE PURSUANT TO 11 U.S.C. SECTION 365(a)**

Notice is hereby given that the Atlas Corporation ("Atlas") has filed an Amended Motion for Order Rejecting Materials for Moab Uranium Tailings Site Pursuant to 11 U.S.C. § 365(a). Atlas is the fee owner of a closed uranium processing mill and adjoining property in Moab, Utah. Atlas maintains the property pursuant to a Materials License (the "License") granted by the United States Nuclear Regulatory Commission (the "NRC"). Pursuant to Section 365, Atlas requests authority to reject the License. Atlas is contemporaneously filing with this Amended Motion an Amended Motion to Abandon the Moab Uranium Tailings Site. Keeping the License would require use of funds which are otherwise necessary to Atlas' reorganization and the use of which to maintain the License will not be in the best interest of the estate or the creditors. There is no benefit to the estate from maintaining the License. Atlas does not believe that there is any equity or value in the License. The License requires that Atlas perform certain duties with respect to the supervising, maintenance, and reclamation of the uranium mill tailings site, and the NRC supervises and approves Atlas' plans and activities at the site. As a consequence, the License constitutes an executory contract as that phrase is used in § 365 and has been construed by the courts. Atlas' rejection of the License in no way affects its rights to funds from the Department of Energy for reimbursement of remediation funds under Pub. L. 102-486, Title X, § 1001, Oct. 24, 1992, 106 Stat. 2946, codified at 42 U.S.C. § 2296a. In support of the instant Motion, Atlas incorporates the factual and legal arguments in its Objection to the Nuclear Regulatory Commission's Claim for Administrative Expense, filed with the Court on February 25, 1999.

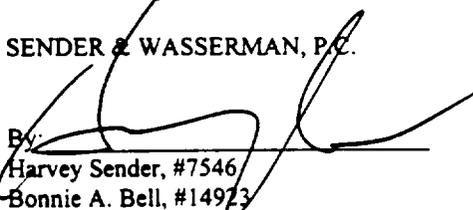
A copy of the pleading is available for inspection in the Bankruptcy Court Clerk's Office, or upon request from the undersigned attorney.

Pursuant to Rule 202 of the Local Rules of Bankruptcy Procedure, if you desire to oppose this action you must file a written objection and request for a hearing with the Court on or before **March 16, 1999**, and serve a copy thereof on the undersigned. Objections and requests for hearing shall clearly specify the grounds upon which they are based, including the citation of supporting legal authority, if any. General objections will not be considered by the Court.

In the absence of a timely and substantiated objection and request for hearing by an interested party, the Court may approve or grant the aforementioned application without any further notice to creditors.

Dated February 26, 1999.

SENDER & WASSERMAN, P.C.

By: 
Harvey Sender, #7546
Bonnie A. Bell, #14973
Daniel J. Garfield, #26054
1999 Broadway, Suite 2305
Denver, Colorado 80202
(303) 296-1999; Fax (303) 296-7600
E-mail sender@sendwass.com
ATTORNEYS FOR DEBTOR

**UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF COLORADO**

IN RE:)	
)	
ATLAS CORPORATION,	)	Case No. 98-23331 DEC
a Delaware corporation	)	Chapter 11
EI#: 15-5503312)	
)	
ATLAS GOLD MINING INC., a Nevada	)	Case No. 99-10889 CEM
Corp., EI#: 84-1023843	)	Chapter 11
)	
ATLAS PRECIOUS METALS INC., a	)	Case No. 99-10890 SBB
Nevada Corp., EI#: 87-0400332	)	Chapter 11
)	
Debtors.	)	(Jointly Administered Under
	)	Case No. 98-23331 DEC)

**NOTICE PURSUANT TO RULE 202 OF FIRST AND FINAL APPLICATION
TO APPROVE PAYMENT OF COMPENSATION TO MONARCH FINANCIAL
CORPORATION AS FINANCIAL ADVISOR AND BROKER FOR THE DEBTOR**

NOTICE IS HEREBY GIVEN that Monarch Financial Corporation has applied to this Court for an Order approving the First and Final Application for Allowance of Fees of Monarch Financial Corporation ("Monarch") as Financial Advisor and Broker for the Debtor. The Application seeks approval of fees in the amount of \$138,100.00. The Application seeks authority for the Debtor to pay Monarch for assisting the Debtor in locating a buyer for the Debtor's interest in Cornerstone Industrial Mineral Corporation ("Cornerstone"). The Debtor owned 61% of the stock of Cornerstone, until its sale to Seven Peaks Mining, Inc. ("Seven Peaks").

The closing date of the sale of the Debtor's interest in Cornerstone to Seven Peaks was January 29, 1999, at which time Seven Peaks paid the Debtor a total of \$3,082,000.00. Under the terms of Monarch's employment, Monarch is to receive a Success Fee of \$125,000.00 plus 5% of any consideration received by the Debtor above \$2,500,000.00. The Debtor provided Monarch with a \$16,000.00 non-refundable retainer which is to be applied to Monarch's Success Fee. The Debtor received \$582,000.00 above the \$2,500,000.00 threshold. 5% of that amount is \$29,100.00. Monarch's total remaining Success Fee, therefore, after applying the initial retainer, is \$138,100.00.

A copy of the Application is on file with the Clerk of the United States Bankruptcy Court, 721 - 19th Street, Denver, Colorado 80202-2508.

UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF COLORADO

IN RE:)	
)	
ATLAS CORPORATION,	)	Case No. 98-23331 DEC
a Delaware corporation	)	Chapter 11
EI#: 15-5503312)	
)	
ATLAS GOLD MINING INC., a Nevada Corp.	)	Case No. 99-10889 CEM
EI#:84-1023843	)	Chapter 11
)	
ATLAS PRECIOUS METALS INC., a Nevada	)	Case No. 99-10890 SBB
Corp., EI#: 87-0400332	)	Chapter 11
)	
Debtors.	)	(Jointly Administered Under
	)	Case No. 98-23331 DEC)

COVER SHEET FOR FIRST AND FINAL APPLICATION TO APPROVE PAYMENT OF
COMPENSATION TO MONARCH FINANCIAL CORPORATION AS
FINANCIAL ADVISOR AND BROKER FOR THE DEBTOR FOR THE PERIOD
FROM OCTOBER 6, 1998, THROUGH JANUARY 29, 1999

Name of Applicant: Monarch Financial Corporation

Authorized to provide professional services to: Debtor-In- Possession

Date of Order Authorizing Employment: November 24, 1998. nunc pro tunc, October 6, 1998

Period for which compensation is sought: October 6, 1998, through January 29, 1999

Amount of fees sought: \$138,100.00

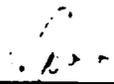
Amount of expense reimbursement sought: \$0.00

This is an Interim Application []. Final Application []

This is the first and final application filed herein by this professional.

DATED this 21st day of February, 1999.

Respectfully submitted,

By: 

Ronald M. Martin, Reg. No. 483
Wendy J. Pifer, Reg. No. 24899
HOLLAND & HART LLP
90 South Cascade Avenue, Suite 1000
Colorado Springs, CO 80903
Telephone No. (719) 475-7730
**ATTORNEYS FOR MONARCH
FINANCIAL CORPORATION**

(3/4/99)

15

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ATLAS ASSET SUMMARY

For Discussion Purposes

Assumes an approximate July 1, 1999 effective date for the plan

<u>Moab Assets</u>	<u>Going Concern</u>	<u>Liquidation</u>
Old Title X Receivables	\$ 1.5 million	\$1.5
Future Title X (56% of clean up cost) Assume \$21 million cost	\$ 11.8 million	\$0.00
Water rights	\$ 1.6 million	\$1.6
Land	\$ 1.5 million	\$1.5
Surety Bond Cash (Face Amount \$6.5)	\$ <u>4.2 million</u>	\$ <u>6.5</u>
Total Moab Assets	\$ 20.6	\$11.1
APMI (Grassy Mtn.) (Equity/ Accounts Receivable)	\$1,000 000	\$0-\$1
AGMI (Gold Bar) (Equity / Accounts Receivable)	\$1,000,000	\$0.00
Arisur (Equity/ Accounts Receivable)	<u>\$2,000,000</u>	<u>\$0.00</u>
Total	\$24.6	\$11.1-\$12.1

Assumptions:

1. If the Moab bond is called, ACSTAR becomes a creditor of APMI and AGMI of up to \$2.3 million dollars, reducing or eliminating any value for Atlas in AGMI and APMI.
2. In a liquidation, the secured creditors of Arisur will foreclose on the assets in Bolivia, leaving no equity for Atlas.

4/15

ATLAS UPDATE - 3/5/99

NRC participated in a conference convened by Assistant U.S. Attorney Bob Clark, who represents the NRC in the Atlas bankruptcy proceeding. The participants included Atlas (its bankruptcy as well as regulatory counsel and Richard Blubaugh, its president), counsel for the unsecured creditors group, counsel for the Fish and Wildlife Service (FWS), counsel from main Justice defending NRC and FWS in the Endangered Species Act litigation, counsel for Earth Justice, counsel for the Grand Canyon Trust, Utah Attorney General's office, and NRC. The conference was held in the Denver offices of Earth Justice, with about half the participants (including NRC) linked by telephone.

The participants discussed the potential scenarios if either Atlas survived through an agreed-upon reorganization plan or Atlas was liquidated. There was also some discussion of governmental takeover of the site; on this point NRC indicated that there was no automatic transfer of the land to any governmental agency or presently identified agency under obligation to take over the site. Atlas' bankruptcy counsel estimated that if a settlement were reached the agreement would be approved in late summer 1999.

ATLAS ASSETS

Bankruptcy counsel for Atlas discussed the potentially available assets in the event of either reorganization or liquidation. A copy of the asset summary used as a basis of discussion is attached. In understanding the asset summary it should be noted that Atlas is organized essentially as a holding company over two subsidiaries: Atlas Precious Metals, Inc. (APMI) and Arisur (a Bolivian company). Another company, Atlas Gold Mining, Inc. (AGMI), is a subsidiary of APMI. Both APMI and AGMI have also filed for bankruptcy, but a reorganization plan for Atlas will essentially address these entities.

KEY DATES

3/12/99 - the government is due to file a response to Earth Justice's motion for a preliminary injunction in the Endangered Species suit. DOJ suggested to Earth Justice that holding this litigation in abeyance pending developments in the bankruptcy proceeding might serve all parties' interests.

3/15/99 - Atlas' reorganization plan is due to the bankruptcy court. Atlas plans to meet this deadline, in the absent of a settlement in principle, by filing a plan that would preserve present value assets and throw to litigation the division among the creditors. The March 15 deadline can only be extended for good cause (such as an agreement in principle on settlement) and itself is an extension of the original 1/22/99 deadline.

OTHER PARTIES' POSITIONS ON POSSIBLE SETTLEMENT

Unsecured creditors: Favor a negotiated settlement

Utah: Is open to a settlement; indicated that the State is not prepared to become the trustee; wants to make sure that proceeding with any particular process will not preclude other options; is willing to consider reclamation trust arrangement if they are a "player" in the ultimate process.

FWS: Favors settlement but has concerns about effects of implementation of reclamation trust

on FWS obligations under Endangered Species Act and possible need to withdraw or modify biological opinion and develop revised "reasonable and prudent" alternatives. FWS has not reconciled itself to NRC's possible action in going forward with approval of the site reclamation plan and the eventuality under a settlement that the site might be transferred to a trustee with limited liability which may not fully implement the NRC approved plan (at least not without additional funding). FWS is not, it should be noted, a party to the bankruptcy proceeding.

Earth Justice: also not a party to bankruptcy, but would likely look to opportunities to attack on settlement in other fora: e.g., NRC administrative proceedings or federal court under Endangered Species Act. Indicated that the "money issue" is separate from its primary concern - ground water clean-up and effects on the endangered fish. In response to a suggestion from Atlas' counsel (Tony Thompson) that a modified cap meeting "the 200 year standard" could provide for interim final closure and free up \$3-4 million of the distributed funds to apply to ground water, Earth Justice indicated it would be concerned whether the "interim final" cap would become the final solution and whether \$3-4 million would provide ground water clean-up.

Grand Canyon Trust: expressed no view but has concerns similar to Earth Justice's.

NEXT STEPS

Government agencies will caucus on **Monday, March 8** to discuss settlement.

Parties to the 3/4 call will reconvene on **Tuesday, March 9**. Objective will be to determine whether parties to the bankruptcy proceeding are prepared to reach an agreement in principle on settlement. Because of the impending 3/15 deadline for filing reorganization plans it is critical that NRC be in a position to indicate its position on a settlement by this date.

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