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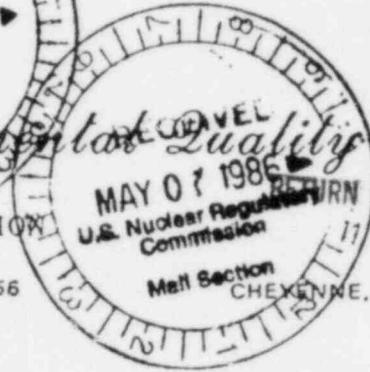
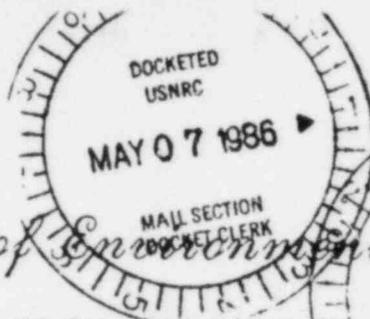
Department of Environmental Quality

LAND QUALITY DIVISION

TELEPHONE 307-777-7756

HERSCHLER BLDG. - THIRD FLOOR  
122 WEST 25TH

CHEYENNE, WYOMING 82002



ORIGINAL TO PDR, HO

April 21, 1986

Mr. M. K. Beck  
Vice President and Manager of Development  
Malapai Resources Co.  
P. O. Box 20824  
Phoenix, Arizona 85036

Sent to  
NRC TLOD  
5-6-86  
B. U. K.

RE: Willow Creek ISL Project, Research and Development License No. 14

Dear Mr. Beck:

In response to Donna Wicher's letter of April 14, 1986, to Glenn Mooney of the District III Office, I hereby authorize Malapai Resources to drill and construct the additional production well, RW-02, within the approved wellfield pattern at the Willow Creek site.

A set of three maps showing the location of the new well within the wellfield should be submitted within thirty (30) days of the completion of the new well so that we may keep our permit documents up to date.

If you have any questions, please contact Glenn Mooney in our Sheridan District III Office at (307) 672-6488, 30 East Grinnell, Sheridan, Wyoming 82801.

Sincerely,

*Roger Shaffer*

Roger Shaffer  
Administrator

xc: District III  
Bill Kearney  
Susan Hogg

FEE NOT REQUIRED

DESIGNATED ORIGINAL

Certified By: *Mary C. Hood*

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# Department of Environmental Quality

## LAND QUALITY DIVISION

HERSCHLER BLDG. - THIRD FLOOR  
122 WEST 25TH

TELEPHONE 307-777-7756

CHEYENNE, WYOMING 82002

### MEMORANDUM

TO FILE: Pathfinder - Shirley Basin Mine, Permit No. 345C

FROM: Paula M. Schmitt diel PMS

DATE: April 22, 1986

SUBJECT: REVIEW OF MODIFIED SEEPAGE CONTROL PLAN FOR TAILINGS POND

CHECKED BY: *[Signature]*

*sent to  
MRC 4/20/86  
5-6-86  
Billie*

### Introduction

In August 1984, Pathfinder submitted to DEQ a preliminary design and monitoring plan for controlling seepage at the Shirley Basin Mine. The as-built plans and initial monitoring data were submitted to the Department (March 1985) ninety (90) days after the system was in operation. A second report was submitted to DEQ in March 1986, which presents the monitoring data related to Pathfinder's Shirley Basin tailings collection system after approximately one year of operation. This memo is a review of that second monitoring report (1986) and Pathfinder's proposal for modifying the collection system to make it more effective.

### Discussion

The monitoring data to date shows that the collection system has maintained the reversal in Mine Creek Plume, but has obtained a reversal in the South and North Plumes only part of the time. Drawdown from pumping has developed to greater than 1,000 feet into the North Plume. Drawing No. 3.0-1 in the report shows the zone of reversal resulting after 360 days of collection well operation. Pathfinder has proposed a recharge drain and three additional collection wells to aid the collection system in maintaining reversals. In most cases, changes in the water quality in the Surficial and White River aquifers and Spring Creek have been small.

The modifications, recharge drains, and three additional collection wells, to the collection system should enable a reversal to be maintained in the South Plume without additional pumping, and develop a continuous reversal in the North Plume. Two new collection wells are proposed in the North Plume while the third well is proposed in the Mine Creek Plume.

Monitoring will be continued to assess the efficiency of the collection system and the data will be submitted in annual reports.

MEMO

Pathfinder -Shirley Basin Mine

Permit No. 345C

April 22, 1986

Conclusions/Recommendations

The modifications proposed by Pathfinder at their Shirley Basin Mine should improve the efficiency of the seepage collection system. The design, as described in the report, should enable the pumping to continue throughout the winter months without freezing up. Pathfinder will continue to monitor the water levels and water quality in the plume to ensure the system is operating efficiently.

It is recommended that Pathfinder's proposed modifications to the collection system be approved as submitted. The monitoring program should be adequate to detect any problems that may occur with the effectiveness of the recharge drains.

sah

c: Susan Hogg  
Bill Kearney  
District I, Lisa Geesey



# Department of Environmental Quality

## LAND QUALITY DIVISION

HERSCHLER BLDG. - THIRD FLOOR  
122 WEST 25TH

TELEPHONE 307-777-7756

CHEYENNE, WYOMING 82002

### MEMORANDUM

TO FILE: RME, Bear Creek, Permit No. 399  
FROM: Jim Finley, Hydrologist  
DATE: May 2, 1986  
SUBJECT: Receipt of Information at April 30, 1986 Meeting

CHECKED BY: *[Signature]*

*sent to NRC, WAD  
5-6-86  
B.L/K.*

### Introduction

Per the April 11, 1986 letter and earlier telephone conversations, representatives of DEQ, NRC, and RME met at the RME offices in Broomfield, Colorado on April 30, 1986. The topic of the meeting concerned seepage from the tailings pond at the Bear Creek uranium recovery facility.

### Discussion

As is seen on the enclosed meeting agenda, subjects discussed covered all aspects of the proposal presented in the April 11, 1986 letter (Mr. Robert Medlock, RME, to Mr. Roger Shaffer, DEQ/LQD). Specifically, the installation of two tailings seepage pumpback wells and additional downgradient monitor wells were discussed. These represent the preferred alternative chosen by RME as part of their tailings seepage mitigation plan. The attached data package was presented as part of the general discussion.

Preliminary approval was granted by the regulatory authorities for the placement and operation of the pumpback wells. RME's objective was to gain verbal approval such that well construction and tailings seepage mitigation can begin this spring. It was agreed that the April 11, 1986 plan would entail a license amendment for the NRC and that this action would satisfy DEQ requirements (less the WQD UIC program). A target date of August, 1986 was selected for submittal of the full scale, detailed reclamation plan for the Bear Creek tailings pond.

JF:klr

### Enclosure

cc: District I w/o enclosures  
Susan Hogg w/o enclosures  
Bill Kearney w/o enclosures



# Department of Environmental Quality

## LAND QUALITY DIVISION

HERSCHLER BLDG. - THIRD FLOOR  
122 WEST 25TH

TELEPHONE 307-777-7756

CHEYENNE, WYOMING 82002

May 1, 1986

*sent to NRC  
5-6-86  
B.71K*

Mr. Carleton Rutledge, Jr.  
Manager  
Environmental and Regulatory Programs  
Uranium Resources Division  
Westinghouse Electric Corp.  
Penn Center  
Box 355  
Pittsburgh, PA 15230

Re: Westinghouse Irigaray Ranch Mine, Permit No. 478

Dear Mr. Rutledge:

This letter is in reply to your letter of April 25, 1986, wherein you requested authorization to temporarily cease pumping groundwater for the purpose of stabilizing the wellfield. This pumping of groundwater was originally required by the Environmental Quality Council Stipulation of September 22, 1982, as part of the five-year temporary shutdown authorized for the Irigaray Ranch Mine.

I am giving Westinghouse Electric permission to stop pumping groundwater from the mine's wellfields for as such time as the static water level in the wellfields reach an equilibrium condition to allow the conducting of pump tests to study the hydrologic conditions in the wellfield.

Once these pump tests have been completed and accepted by the Department of Environmental Quality, the pumping is to resume in order to reach the one-foot drawdown level as stated in the EQC Stipulation of September 22, 1982. All other portions of the EQC Stipulation of September 22, 1986, shall remain in force both during the cessation of pumping and the testing period.

If you have any questions regarding this temporary lifting of the pumping requirements, please contact Glenn Mooney of the Land Quality District III Office at 30 East Grinnell, Sheridan, Wyoming, telephone (307) 672-6488.

Sincerely,

*Roger Shaffer*

Roger Shaffer  
Land Quality Administrator

cc. District III  
Bill Kearney ✓

IN THE DISTRICT COURT OF THE SECOND JUDICIAL DISTRICT  
IN AND FOR CARBON COUNTY, STATE OF WYOMING

Docket No. 85C-268

THE PEOPLE OF THE STATE )  
OF WYOMING )  
 )  
Plaintiffs, )  
 )  
vs. )  
 )  
PATHFINDER MINES )  
CORPORATION, operator of )  
the Shirley Basin Mine, )  
Shirley Basin, Wyoming, )  
 )  
Defendant. )



*sent to NRC  
and LAD Dist I  
5-6-86  
B.11K*



SETTLEMENT STIPULATION

COME NOW the parties the above-entitled matter, who hereby stipulate and agree as follows:

1. Both the Plaintiffs in this action and the officers of the Defendant Corporation are desirous of terminating this litigation without further proceedings, and hereby agree to the entry of the Consent Decree proposed herewith.
2. This Court has jurisdiction over the subject matter of the action and over the parties hereto pursuant to W.S. 35-11-901.
3. The Amended Complaint in this matter was filed with the Clerk of the District Court on October 16, 1985. Defendant filed its Answer to the Amended Complaint on November 14, 1985.
4. Pathfinder Mines Corporation, the Defendant herein, is a Delaware Corporation authorized to do business in the State of Wyoming and is presently conducting a uranium mine operation at Shirley Basin, Carbon County, Wyoming.
5. The Amended Complaint alleges Defendant violated

three separate provisions of the Wyoming Environmental Quality Act, to wit: W.S. 35-11-301(a)(i); W.S. 35-11-301(a)(ii); and, W.S. 35-11-301(a)(iii). W.S. 35-11-301(a)(iii) was alleged to have been violated by the construction and operation of a wastewater pond and a pumpback system without a permit authorized from the Department of Environmental Quality, Water Quality Division. W.S. 35-11-301(a)(i) was alleged to have been violated when a tailings pond (a/k/a Tailing Pond #5) located on the Defendant's minesite was found to be emitting pollution into waters of the State of Wyoming. W.S. 35-11-301(a)(ii) was alleged to have been violated by the alteration of the physical, chemical, radiological, biological or bacteriological properties of waters of the State through the discharge of pollution from said Tailings Pond #5.

6. Without waiving any existing or future arguments concerning the State of Wyoming's jurisdiction to regulate Defendant's Shirley Basin mine and mill site. Pathfinder Mines Corporation admits to the violations referenced herein at paragraph five (5).

7. Since the commencement of this action, the Plaintiffs and Defendant have taken significant steps to resolve the Department of Environmental Quality's concerns regarding Defendant's failure to recognize the authority of the Department of Environmental Quality, Water Quality Division, to regulate nonradiological hazards at their mine and mill sites in Wyoming.

8. The Plaintiffs and Defendant agree that ten thousand dollars (\$10,000.00) is an appropriate penalty for the Court to assess against Pathfinder Mines Corporation for the violation committed and admitted to herein.

9. Defendant further agrees to commit funds and resources to accomplish the following:

a. The permitting, installation and effective operation of a recharge trench and additional pumpback wells below Tailing Pond #5 so as to control and contain existing plumes of contamination from further degrading the groundwater in the area, and to ultimately restore the affected aquifer(s).

b. Monitoring of the groundwater for levels of total dissolved solids, sulfates, chlorides, static water level and ph, as required by the Department of Environmental Quality, Water Quality Division. The monitoring program will include:

- (i) Annual composite samples of Pit 309 water.
- (ii) Annual samples of the White River aquifer and the Wind River aquifer so as to allow an evaluation of impacts to underlying aquifers. If necessary, additional wells may be required to provide adequate information on gradients and impacts to the aquifers.
- (iii) Annual composite samples of the pit located west of the uranium mill tailings reservoir.
- (iv) Semi-annual sampling of monitor wells located on all sides of the reservoir.

c. Submittal of reports containing water quality data and contour plots to the Department of Environmental Quality, Water Quality Division, on a semi-annual

basis. Submittals will include data collected for Nuclear Regulatory Commission requirements. Reports should include total dissolved solids, chlorides, sulfates and static water level contour maps; and

- (i) An evaluation of the chemistry of the recharge water.
- (ii) An evaluation of the extent and the chemical content of the contaminant plumes.
- (iii) An evaluation of system effectiveness in providing complete containment of contaminants and aquifer rehabilitation.
- (iv) An evaluation of impacts to underlying aquifers.

d. In order to demonstrate the effectiveness of the recharge trench and pumpback well system, Pathfinder Mines Corporation will install a grid of piezometers to monitor static water levels throughout the aquifer in the area of the hydraulic fence. The monitor system will be designed to provide sufficient data to document the gradient reversal along the entire width of the plumes.

e. Submittal of annual progress reports to the Department of Environmental Quality, Water Quality Division which will include an evaluation of the effectiveness of the system and any recommended changes in the system and schedules.

f. Records will be maintained and submitted which reflect down-time for all components of the aquifer rehabilitation system. The Water Quality Division shall be notified within 24 hours of the occurrence of a shutdown of the recharge trench and pumpback system components.

g. Groundwater permits will be obtained from the State Engineer.

h. Contingency plans will be developed to handle problems such as freezing of the recharge trench and shutdown of one or more of the pumpback wells. These plans will include corrective actions and a revised static water level monitoring schedule to detect changes in the flow regime.

i. An operations and maintenance manual will be submitted to and approved by the Water Quality Division. The manual will include schedules, operating procedures, sampling protocol, and contingency plans.

j. The permit application for the pumpback system and monitor wells will include construction plans and specifications, monitoring schedules, and reporting schedules.

k. Modifications to the proposed remedial measures may be warranted so as to accomplish the effective operation of the system. Modifications to the monitoring requirements and reporting schedules may be warranted so

as to demonstrate the effective operation of the system. Any revisions or modifications must be first approved by the Water Quality Division before implementation.

10. The provisions of this Stipulation shall apply and be binding upon the Defendant, its officers, agents and assigns and upon the State of Wyoming.

11. The parties agree to comply with the order of the Court in this matter.

DATED this \_\_\_\_ day of \_\_\_\_\_, 1986.

FOR THE PLAINTIFF:

FOR THE DEFENDANT:

\_\_\_\_\_  
Title:

\_\_\_\_\_  
Title:

IN THE DISTRICT COURT OF THE SECOND JUDICIAL DISTRICT  
IN AND FOR CARBON COUNTY, STATE OF WYOMING

Docket No. 85C-268

THE PEOPLE OF THE STATE        )  
OF WYOMING                        )  
                                  )  
                          Plaintiffs,    )  
                                  )  
                          vs.                )  
                                  )  
PATHFINDER MINES                )  
CORPORATION, operator of        )  
the Shirley Basin Mine,         )  
Shirley Basin, Wyoming,        )  
                                  )  
                          Defendant.     )

CONSENT DECREE

This is a civil action against the Defendant for violations of W.S. 35-11-301(a) and to enforce said statute by requesting a penalty for violations of the above statute from Defendant. Plaintiffs filed this action on the 16th day of October, 1985. Defendant subsequently filed its answer in this matter on November 14, 1985. Plaintiffs appeared by their attorney, Weldon S. Caldbeck, Senior Assistant Attorney General of the State of Wyoming. The Defendant appeared through its attorney Mr. John A. MacPherson.

The parties have entered into a Stipulation concerning this matter and have presented it to this Court. The Stipulation sets forth an agreement by the parties. An amount to be paid as penalty for the violations committed is also recommended. Based upon the matters set forth in the Stipulation of the parties,

THE COURT FINDS as follows:

1. This Court has jurisdiction of the subject matter of this action and all parties hereto. The Complaint herein states a claim against the Defendant under W.S. 35-11-901.

2. The Defendant admits that the statutory violations recited by Plaintiffs in their Complaint were committed and that admission is accepted by the Court.

3. W.S. 35-11-901(a) authorizes this Court to assess penalties of up to ten thousand dollars (\$10,000.00) per day for violations of the Wyoming Environmental Quality Act and rules and regulations promulgated thereunder.

4. The sum of \$10,000.00 is an appropriate amount to be paid by the Defendant as a penalty in this matter.

5. The provisions of the Stipulation of the parties should be incorporated in this Order of the Court.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED that:

A. There shall be a penalty assessed against the Defendant in this matter in the sum of \$10,000.00.

B. The provisions of the Consent Decree shall apply to and be binding upon the Defendant and its officers, directors, agents, employees, successors and assigns, and upon all persons, firms and corporations acting under, through, or for it, and upon the State of Wyoming.

D. The terms of the Stipulation of the parties are hereby incorporated in this Order.

Dated this \_\_\_\_ day of \_\_\_\_\_, 1986.

\_\_\_\_\_  
DISTRICT COURT JUDGE

APPROVED AS TO FORM:

\_\_\_\_\_  
Weldon S. Caldbeck

\_\_\_\_\_  
John A. MacPherson