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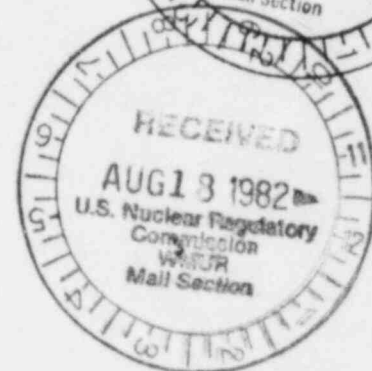
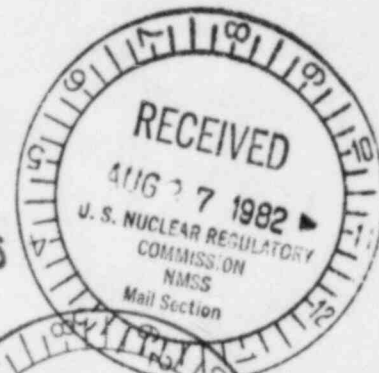
Malapai Resources Company

P. O. Box 20824 Phoenix, Arizona 85036

Return to: 396-SS



40-8771



August 13, 1982

Mr. W. C. Ackerman, Administrator
Land Quality Division
Wyoming Department of Environmental Quality
401 W. 19th Street
Cheyenne, WY 82002

Re: Stipulation 1 of Research & Development
License Number 11RD

Dear Mr. Ackerman:

Attached is a copy of a letter sent to Mr. Mark Smith by which stipulations 3 and 4 of our Research and Development License Number 11RD have been agreed to satisfying both the WDEQ and Malapai Resources.

Malapai Resources has just completed its 1982 field program for the Peterson property. Budget constraints, in view of current uranium market place conditions, only permitted minimal reserve development field drilling and do not permit additional 1982 field work. However, work required under stipulation number 1 certainly could be performed during the 1982 field season. Consequently, by this letter, I am requesting that the January 1, 1983 date for data submission, as per stipulation 1, to the WDEQ-LQD be revised to January 1, 1984. As a pumping test will be performed in the actual well field pattern to prove confinement prior to chemical injection, as requested by the WDEQ-LQD, this time extension will permit Malapai Resources the opportunity to perform the actual work during the 1983 field season and prepare the necessary data submission.

I realize that the entire process to obtain this license has taken a long time and this request is a further time factor. However, it is my intention to satisfy the WDEQ

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Info only


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Mr. W. C. Ackerman
Administrator, Land Quality Division
Wyoming Department of Environmental Quality
August 13, 1982
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and "get on" with the process. If you could grant us the requested time extension, I am sure that Malapai Resources will be in a better position to comply with stipulation number 1 to WDEQ's satisfaction.

Thank you for your consideration of this request.

Sincerely,



Mike Beck
Vice President &
Manager of Development

MB/ch

Enclosure

cc: B. Ward
C. Schmitt

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Malapai Resources Company

P. O. Box 20824 Phoenix, Arizona 85036



August 6, 1982

Mr. Mark Smith
Associate Engineer
District 1
Land Quality Division
Wyoming Department of Environmental Quality
401 W. 19th Street
Cheyenne, WY - 82002

Re: Stipulations 3 and 4 of Research & Development License
Number 11 RD

Dear Mark:

The requirement of stipulation number 3 of the above-referenced R&D License has been met. The Water Quality Division of the WDEQ issued the Permit to Construct #82-49R for the evaporation ponds on June 2, 1982.

In reference to stipulation number 4, attached are permit pages modified to meet the requirements as we discussed over the phone. Below is a brief outline of the responses in the same order as addressed in your July 15 letter.

General - Item 2

The commitment to verify the direction of groundwater flow and magnitude of the gradient is included on revised page 4-30.

Mine Plan - Item 3

The requested commitment to supply the drilling mud product name is included on page 4-23 as revised.

Mine Plan - Item 6

A commitment to plug unplugged holes and to jointly search out the exploration holes is included on page 4-29.

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Mr. Mark Smith
Land Quality Division
Wyoming Department of Environmental
Quality
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Page 2

Mine Plan - Item 7

The phrase "of accuracy" has been deleted from both revised pages 4-32 and 5-1a.

Reclamation Plan - Item 1

Commitment to a 12 month stabilization period is included on revised page 5-4.

I believe the above and attached are responsive to your stipulations 3 and 4.

Sincerely,



Crew Schmitt
Sr. Analyst

CS/ch

Attachment

cc: M. Beck
B. Ward
W. Ackerman

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addition to the B Aquifer, monitor wells will be placed in the C Aquifer and Shallow Aquifer (Figures 4.8 and 4.9). Exact depths cannot be provided until well construction occurs. The estimated depth of the B Aquifer monitor wells should be about 260 feet and the completed intervals will range from about 220 to 260 feet. For the A (upper) Aquifer the completed interval will be approximately 180 to 200 feet and in the C (lower) Aquifer the completed interval will be about 280 to 320 feet. All monitor wells constructed will be completed and developed prior to leach solution injection.

WELL COMPLETION

Several well completion procedures and casing materials may be used during the pilot test for production and injection wells. The well construction methods that will receive the greatest attention are shown in Figures 4.10, 4.11 and 4.12. As these well construction methods are used, summaries of the well completion data for each well will be forwarded to the WDEQ-LQD and State Engineer so as to maintain acceptable documentation of project activities.

The well construction methods are not necessarily numbered herein in order of preference. Preliminary plans are to use biodegradable drilling muds. After the wells are completed, the product name of the drilling mud will be submitted to WDEQ-LQD along with the well construction data. Method No. 1 (Figure 4.10) involves the perforation of blank casing after it is cemented in the ground. This method involves the drilling of a pilot hole and then geophysically logging this hole. The hole would next be reamed to the optimum diameter and casing set and cemented in the hole. Next an abrasive water jet or mechanical technique would perforate the casing in the producing interval, and the well would likely be developed by air lifting and pumping.

Method No. 2 (Figure 4.11) also involves the drilling and logging of a pilot drill hole and subsequent reaming of this hole. A string of casing with a length of screen attached at the lower end would be lowered into the hole. A cement basket will be attached to the blank casing just above the screen. Cement will be pumped down the inside of the casing to a plug just above the screen, out weep holes at the base of the casing, and will be

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directed by the cement basket back to the surface through the annulus. Subsequently, the residual cement and plug will be drilled out, and the well will be developed.

Method No. 3 (Figure 4.12) involves drilling a pilot hole through the ore zone, logging the hole, and reaming the hole to the top of the ore zone. Casing will then be set in the reamed hole and cemented in place. Next the residual cement will be drilled out, and drilling will continue through the

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If the pressure does not remain constant, the well casing may be checked for cracks or holes by down hole TV or other methods. When possible, the well will be repaired, and the packer test will be repeated. If the well casing leakage cannot be repaired or corrected, the well will be plugged and reclaimed as described in Section 5.1 of this application report.

APS-NAC will submit to the WDEQ-LQD, data that describes all mechanical integrity tests and their results after this testing is complete. The results of the packer tests will be signed by the supervisor responsible for the testing. In addition, the WDEQ-LQD will be notified when the wells initially failing tests have either been repaired or plugged.

ABANDONED EXPLORATION DRILL HOLES

Before leaching start-up, location and abandoned condition of exploration drill holes will be verified within 200 feet of wellfield Nos. 1 and 2. APS records show that 37 drill holes occur within this area. The average depth of these drill holes is 280 feet and none of them penetrate deeper than the B Aquifer. Prior to locating the drill holes, APS will notify WDEQ-LQD so that an agency representative may be on-site to assist in locating the 37 holes. Where the drill holes can be located and they have not been previously plugged, the holes will be plugged with bentonite slurry meeting the specifications of Chapter XV WDEQ-LQD Rules and Regulations and also will be capped according to Chapter XV. Because most of the drill holes are many years old, it is highly possible that some holes may be very difficult to locate. If, in fact, any of the holes prove to be too difficult to reasonably locate through the joint efforts of APS and WDEQ-LQD on-site representative, the search will be abandoned but only with the concurrence of the WDEQ-LQD representative.

LEACH SOLUTION CIRCULATION

Initially, formation water will be pumped from the recovery wells in the wellfield area and transferred through a pipeline to the process plant. At

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this point chemicals and an oxidizer will be added to the formation water, and the resulting leach solution will be returned to the wellfield injection wells. Following injection, the pregnant solution will be pumped from the recovery wells and transferred back to the process plant. After processing and chemical make-up, the leach solution will be recirculated as described.

The solution will be circulated with a bleed of waste solutions to the solar evaporation ponds. This solution bleed will be maintained by pumping more solution from the B Aquifer than is injected. Therefore, the underground process will be operating in a positive hydraulic cone of depression in which solutions surrounding the pumping wells will be drawn inward toward those wells.

EMERGENCY PROCEDURES

The wellfield-piping systems will be equipped with automatic high-pressure and low-pressure shutdown systems. The pressure controls will also include alarms to attract the operator's attention should a malfunction or abnormal operating pressure occur.

If fluid were released by a pipeline rupture, the localized area potentially affected by the leach solution would be surveyed. Any contaminated material would be transferred to the solar evaporation ponds, and the contaminated area would be reclaimed.

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WATER SAMPLING

Prior to start-up of leaching, baseline water quality, the direction of ground water flow and the magnitude of the gradient in each of the monitor, injection and production wells will be established. The baseline quality, the direction of ground water flow and the magnitude of the gradient and control limits will be based on sampling each monitor, injection and production well on at least three separate occasions, at least two weeks apart, prior to start-up of leaching. If the data in any of the three samples deviates significantly from the other two, additional sample(s) will be taken for verification. Before the collection of each water quality sample, water levels will be recorded. The volume of water pumped from each well will be recorded in addition to field values of pH, temperature and specific conductance. Before samples are collected, at least two casing volumes of water will be pumped from the well. If pH, temperature and specific conductance do not stabilize, an explanation of why stabilization could not be achieved will be included with the results. At least two samples will be split during each sampling period to evaluate laboratory quality control. WDEQ-WQD will be notified of the sampling schedule to allow them to obtain duplicate samples.

EXCURSION

As previously discussed, monitor wells will be located in the producing zone (B Aquifer) around the perimeter of the wellfield area. A total of six monitor wells will be located in the B Aquifer, two wells in the C Aquifer below, and two wells in the Shallow Aquifer above (Figures 4.8 and 4.9).

During extraction operations, a water sample from each monitor well will be collected once every two weeks. The concentrations of the excursion parameters will be determined and compared to the upper control limits as described in the following section. Water levels will be recorded prior to obtaining water samples as described above and reviewed for indications of excursions.

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The proposed monitor wells discussed previously will be constructed in advance of the leaching operations to be able to document upper control limits for the excursion parameters in each well. Since data are not currently available, upper control limits and supporting data will be provided to the WDEQ - LQD for approval of these values before start-up of leaching. Such approval shall be assumed to be granted if no response is received within 30 days. The procedure for determining the upper control limits is outlined on page 4-31.

Based upon the above analysis, the following excursion detection procedures will be used:

1. Monitor wells will be sampled once every two weeks. The static water level will be recorded before pumping at least two casing volumes prior to a sample collection.
2. If any two parameters from a well exceed their respective UCL, an additional sample will be collected from this well within 24 hours. In addition, the static water level measurements will be compared to previous readings for significant variations.
3. If the sample collected after 24 hours, as described in Item 2 above, also contains at least two parameters above their upper control limits, an excursion will be identified.
4. The WDEQ - LQD will be notified within 24 hours that an excursion has occurred, and the excursion parameter concentrations and the well(s) in excursion status will be reported.
5. A written report will be submitted to WDEQ-LQD within seven days after detecting an excursion detailing procedures for mitigating and controlling the excursion.

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A summary of sample restoration values based on water quality analyses for water from the hydrologic test well (OW-3) in Wellfield No. 1 is shown in Table 5-1. Final restoration goals and minimum restoration requirements for Wellfield No. 1 will be determined upon completion of baseline analysis of Wellfield No. 1 and will be submitted to the WDEQ-LQD for approval of these values in the same form as the sample Table 5-1. Such approval shall be assumed to be granted if no response is received within 30 days. The procedure for determining the restoration goals and minimum restoration requirements is outlined on page 5-2. The final restoration goals and minimum restoration requirements for Wellfield No. 2 will be determined upon completion of baseline analysis of Wellfield No. 2 and will be submitted to the WDEQ-LQD for approval in the same form as sample Table 5-1. Lixiviant injection will not begin in Wellfield No. 2 until the WDEQ-LQD has approved the final restoration goals and minimum restoration requirements for Wellfield No. 2. Based on Table 5-1, the range of baseline values exceeds domestic water use standards for total dissolved solids, sulfate, chromium, iron, lead, manganese, gross alpha and radium-226. The baseline values exceed the livestock water use criteria for chromium, copper, gross alpha and radium-226. For these parameter values baseline rather than water use criteria would apply.

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Depending upon information and experience gained during ground water restoration testing, alternative methods may be implemented to improve ground water restoration. During the restoration period APS-NAC will collect water samples from the injection, production and monitor wells in the leached zone once every four weeks to monitor the progress of restoration. In addition, upper and lower monitor wells will be sampled once every four weeks.

After completion of ground water restoration, APS-NAC will collect water samples from the leached zones once every four weeks over a period of twelve months to determine if the concentrations of the chemical parameters of the ground water have stabilized. Chemical parameters to be tested shall be those outlined in WDEQ Guideline No. 8. After twelve months, the monitoring data will be submitted to WDEQ-LQD for analysis. When chemical stabilization is achieved, and after such stabilization is agreed to by the Wyoming Department of Environmental Quality and U.S. Nuclear Regulatory Commission, ground water restoration shall be deemed completed. The use of a twelve month stabilization period during the R&D project is not meant to set a precedence, but rather to be used as a guide for establishing reasonable durations for future stabilization periods.

Subsequent to the completion of ground water restoration, all injection and recovery well casings will be filled with a bentonite slurry to a level seven feet (2.1 m) below the land surface. The bentonite slurry will meet the specifications of Chapter XV of the WDEQ-LQD Rules and Regulations. Next, a plug will be placed at least seven feet (2.1 m) below the land surface, and the hole above the plug will be filled with cement to within two feet (60 cm) from the land surface. The well casing will then be cut off at least two feet (60 cm) below land surface, and the remaining hole will be filled with soil. Any well not reclaimed in this manner will remain as a water well and will be permitted with the Wyoming State Engineer.

The Wyoming State Engineer will be given the location of the wellfield areas and the range of depths of the production zones prior to bond release.