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UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
Reno District Geothermal Office
Kietzke Plaza, Bldg. D, Suite 137
4600 Kietzke Lane
Reno, Nevada 89502

August 14, 1981

Mr. Harry J. Olson
AMAX Exploration, Inc.
7100 West 44th Ave.
Wheat Ridge, Colorado 80033

Dear Mr. Olson:

On Tuesday, 8/4/81, Doug Koza of my staff and I conducted an inspection tour of AMAX Exploration, Inc.'s operations sites in the McCoy Federal Leasing Unit, Churchill and Lander Counties, Nevada. We found that all four drilling locations (well numbers 66-8, 25-9, 38-9, and 14-7) have been left in an unsafe and unacceptable condition. This is inexcusable since not only are the USGS permit stipulations clear and explicit, but AMAX field personnel have also been reminded in person on several occasions by my staff as to USGS requirements.

The most serious of the points of noncompliance involves the completion of the wells. For wells #25-9, and 38-9, the tubing is free standing in the hole with the annulus open to the surface. Well 14-7 has no tubing and the casing opening is covered with a board. The conditions of approval for the drilling permits issued by the USGS for well numbers 25-9 and 38-9 require:

"12. Upon completion, the tubing should be hung in the wellhead such that both the annulus and tubing are shut-in. This completion is in lieu of the proposed 10' annulus cement plug. Also, a valve should be placed on the tubing in lieu of a cap."

The completion procedure for well #14-7 as approved in AMAX Exploration, Inc.'s own drilling program states:

"14A. If 2000' depth is reached without drilling formations considered to merit flow testing, complete as a temperature gradient hole as follows:

a. Run 2000' of 1" sch. 40 pipe. Cap bottom end with 3000 psi cap and use sch. 80 pipe couplings.

b. Cement from 500' to surface using 180 ft³ (152 sk) class A neat cement. See step 9 for properties. Cement by running 1" pipe down annulus to 500'. Remove 1" cementing pipe after cement is in place, if possible."

Neither AMAX Exploration, Inc.'s own approved drilling program nor the USGS conditions of drilling permit approval have been complied with.

Cleanup of the drill sites has also not been completed satisfactorily. The mud pit at well #38-9 has only been partially filled in and it is evident that the pit was left open for drying without any protective fencing.

The manner in which protective fencing was erected around the cellars of well numbers 66-8 and 25-9 is inadequate for its intended purpose. The fencing is not attached to the posts and is so loose that it provides no protection for livestock or wildlife.

Surface disturbance associated with the drilling of well #25-9 is much greater than should be expected for an operation of this type. Regrading of the site was done very poorly leaving a very irregular surface. The access route authorized and flagged in the presence of John Deymonaz prior to startup of the subject drilling operation was not used. No request for a change in that route was ever received in this office.

During the drilling of well #38-9, a producing water zone was encountered. AMAX field personnel elected to overflow the mud pit without prior approval. When questioned over the phone at the time as to where the excess water was going, AMAX field personnel indicated it flowed a short distance and percolated into the ground. A subsequent field inspection by Doug Koza and Dick Whiting of my staff revealed that contrary to what we had been told, the excess water had traveled downslope about one-half mile, cutting gulleys in natural drainages and along access roads, before entering a depression blocked by a small dam (approximately 15' high) constructed years ago by mining claimants. At the time of the inspection the dam had less than 6" free board, water was seeping under it, the dam wall was saturated and was

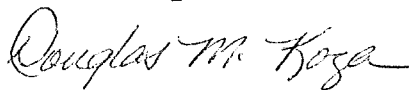
developing cracks. The main county road through the area lay only several hundred feet below the dam. My staff instructed your field personnel to lower the level of the pond with a pump which they did do. However, the gulleying is still very prominent and is essentially irreparable.

Throughout the drilling operations at McCoy Unit, this office had trouble obtaining required information from your field personnel. Often, we didn't hear from them for several days at a time, despite a USGS requirement for daily drilling reports. This problem has continued with AMAX operations in the Tuscarora Federal Leasing Unit.

The problems discussed above indicate to me that AMAX exercises very poor control over its lease operations. As a result, until AMAX can satisfactorily show consistent compliance with permit conditions and GRO Orders, its lease activities will be closely monitored by my staff. Unworkmanlike operations will not be allowed to continue on Federal leases under the jurisdiction of this office. The deficiencies described for the McCoy Unit operations must be corrected within 2 weeks of receipt of this letter. Any future violations of permit conditions, approved drilling programs and plans of operation, or GRO orders will result in immediate shutdown of operations until the violation is corrected.

If you have any questions, please contact this office at (702)784-5676.

Sincerely,



for Bernard Moroz
District Geothermal Supervisor

DMK:bj 8/14/81