



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
URANIUM RECOVERY FIELD OFFICE
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Return to URFO 467-55
40-8745
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Docket No. 40-8745
04008745210E
04008745250E

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MEMORANDUM FOR: Docket File No. 40-8745
FROM: Yvonne A. Young, Project Manager
Uranium Recovery Field Office
SUBJECT: REVIEW OF OGLE PETROLEUM INCORPORATED'S EXCURSION
NOTIFICATION OF MONITOR WELL M-17 (DATED APRIL 9,
1982) AND QUARTERLY EXCURSION REPORT FOR MONITOR WELL
NOS. M-14, M-17 AND M-72 (DATED JULY 21, 1982)

Background

By telephone on April 8, 1982, Ogle Petroleum, Incorporated (OPI) informed the Nuclear Regulatory Commission (NRC) that monitor well M-17 completed in the "B" sand; the first aquifer overlying the Production zone was in excursion status. Written notifications regarding the excursion status of monitor well M-17 as well as the technical excursion status of evaporation pond monitor well M-72 completed in the first saturated unit below the surface were submitted by OPI on April 9, 1982.

Prior to OPI's notification of the excursions of monitor wells M-17 and M-72 mentioned above, monitor well M-14 (completed in the ore zone aquifer - "D" sand) was reported (by telephone on February 12, 1982 and written notification on February 16, 1982) to be in excursion status. Additional information regarding the excursion status of monitor well M-14 was submitted in numerous telephone conversations between Mr. Bruce Lawson (OPI) and Mr. Terry Johnson (NRC), and OPI's monthly report dated March 22, 1982. Also, additional information regarding the excursion status of the three monitor wells mentioned above was submitted in the July 21, 1982 follow-up report. However, monitor well M-72 will not be discussed in NRC's present review of the excursion reports because it was fully covered in Mr. Ted Johnson's memorandum to Docket File, dated June 22, 1982.

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Discussion

OPI was given permission from the NRC and WyDEQ to discontinue the sampling of all monitor wells in Mining Unit No. 1 to stabilize the piezometric surfaces prior to the aquifer test of Mining Unit 2 which was scheduled to begin in March 1982. However, due to unstable aquifer conditions, this test was cancelled. Subsequently, on March 30, 1982 OPI sampled M-14 which was previously on excursion status and the other excursion monitor wells. A synopsis of NRC's review of OPI's March 30, 1982 and subsequent samplings of monitor wells M-14 and M-17 is as follows:

Monitor Well M-14

The March 30, 1982 sample results of monitor well M-14 showed that there was a substantial reduction in the excursion indicators for M-14. All values of the excursion indicators for M-14 were less than the highest baseline concentrations.

Ogle rescheduled the pump test in the Mining Unit No. 2 and again received permission from NRC and WyDEQ to discontinue the sampling of all monitor wells in Mining Unit No. 1. Again, unstable aquifer conditions caused the cancellation of the rescheduled pump test. On April 27, 1982 all monitor wells were sampled. M-14 sample results showed that in addition to all excursion parameters being below their highest baseline concentrations, the excursion had been controlled and M-14 had completely recovered from the excursion. All subsequent samples have shown that monitor well M-14 is off excursion status.

Ogle attributed the cause of M-14's excursion to the overpumping of the northeast portion of the wellfield which caused a gradient to occur toward M-14. Ogle also stated that, immediately following the detection of the excursion, they adjusted the wellfield patterns and rates; thus, positive results were observed in M-14 samples.

Monitor Well M-17

The excursion of Monitor Well M-17 located within Mining Unit No. 1 and completed in the "B" sand; the first aquifer overlying the production zone, was first detected in the March 30, 1982 sample from M-17. Carbonate plus bicarbonate and chloride exceeded their upper control limits plus twenty (20) percent values. On April 5, 1982 a confirmation sample of M-17 showed that this well was on excursion status.

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Subsequently, Ogle sampled M-17 on a weekly basis and it was noted that the samples collected in April showed a gradual decrease in chloride and carbonate plus bicarbonate concentrations.

The continued weekly samplings through May 11, 1982 showed that current results were the same as the former. Mining Unit No. 2's pump test was conducted in May 1982. Therefore, sampling of M-17 was discontinued until June 4, 1982. Sample resumption on June 4, 1982 showed that in addition to chloride, carbonate plus bicarbonate was also below its UCL.

The late June and early July 1982 samplings of M-17 showed that chloride concentrations were gradually increasing. On July 1, 1982 sample results of M-17 showed that M-17 was equal to its chloride UCL of 23, and thus, remains on the borderline for the chloride UCL. M-17 was no longer on excursion status.

OPI attributed the cause of the excursion of M-17 to the communication between M-17 (the first aquifer overlying the production zone) and the production zone itself. OPI stated that they are studying wellfield data and other sources of information in order to determine the source of the contaminants.

On October 25, 1982, I talked with Mr. Glenn Catchpole (OPI) to see if OPI had determined the cause of the excursion of M-17, and what corrective actions if any, had been taken to remedy the excursion of this well. Subsequently, Mr. Catchpole informed me that currently OPI hasn't determined the cause of the excursion of M-17 and therefore, no corrective actions were taken to control the excursion. However, he speculated that the excursion of M-17 could have resulted from one of the following reasons: 1. A small leak in an old exploration hole, and 2. Migration of lixiviant between cement and formation in injection and recovery wells.

Additionally, Mr. Catchpole stated that the most recent chloride and carbonate plus bicarbonate UCL readings for M-17 were 22 mg/l and 124 mg/l, respectively (The UCL for carbonate plus bicarbonate = 124 mg/l). If monitor well No. 17 goes on excursion again, then, it is a possibility that the injection wells in the vicinity of M-17 will be taken out of service until the cause of the excursion has been determined and correct mitigating actions have been taken to control the excursion.

OPI stated that currently monitor wells M-14 and M-17 are no longer in excursion status at the Bison Basin Project site. OPI further stated

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that they will closely watch monitor well M-17 and will notify the NRC, as required in the license, if the chloride and carbonate plus bicarbonate levels in the monitor well rise and cause monitor well M-17 to go on excursion status.

The NRC's review of the submittal (including numerical data) shows that OPI's monitor wells M-14 and M-17 are no longer on excursion. The NRC will review forthcoming submittals regarding the excursion status of monitor well No. 17. If this well goes on excursion status again, then the NRC will require OPI to implement active mitigating measures.

Yvonne Young

Yvonne A. Young, Project Manager
Uranium Recovery Field Office

Approved By:


John J. Linehan, Section Chief
Uranium Recovery Field Office

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