40-8037

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

PROGRAM CODE 11400
LICENSE NUMBER SUB-1010
NOTICE DATE 01/02/75

KERR-MCGEE NUCLEAR CORPORATION
MCGEE TOWER
OKLAHOMA CITY OKLAHOMA 73102

SUBJECT: NOTICE OF EXPIRATION

YOUR SOURCE MATERIAL LICENSE EXPIRES ON 02/28/75.

IF YOU DESIRE TO CONTINUE YOUR PROGRAM USING SOURCE MATERIAL(S), AN APPLICATION FOR RENEWAL OF THE LICENSE SHOULD BE FILED WITH THIS OFFICE PURSUANT TO TITLE 10, CODE OF FEDERAL REGULATIONS, PART 40 SECTION 40.43(B). THE APPLICATION SHOULD BE SUBMITTED USING FORM AEC-2 IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED WITH THE FORM.

IT IS TO YOUR ADVANTAGE TO FILE SUCH AN APPLICATION AT LEAST THIRTY (30) DAYS BEFORE THE EXPIRATION OF YOUR EXISTING LICENSE. YOUR PROGRAM WILL THEN BE COVERED BY YOUR EXISTING LICENSE UNTIL ACTION IS TAKEN ON YOUR APPLICATION FOR LICENSE RENEWAL. IF AN APPLICATION IS RECEIVED LESS THAN THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE OF YOUR LICENSE AND CANNOT BE PROCESSED BEFORE YOUR EXISTING LICENSE EXPIRES, THIS COULD RESULT IN YOUR POSSESSING MATERIAL WITHOUT A VALID LICENSE.

IF YOU DO NOT WISH TO RENEW THE LICENSE, PLEASE COMPLETE THE ENCLOSED FORM AEC-314, CERTIFICATE OF DISPOSITION OF MATERIALS, AND RETURN TO THIS OFFICE

THIS NOTICE OF YOUR LICENSE EXPIRATION IS SENT FOR YOUR CONVENIENCE, BUT IT SHOULD NOT BE INTERPRETED THAT SIMILAR NOTICES WILL BE SENT IN THE FUTURE. THE RESPONSIBILITY FOR LICENSE RENEWAL REMAINS WITH THE LICENSEE.

PLEASE DISREGARD THIS NOTICE IF YOU HAVE OBTAINED AN AMENDMENT WHICH HAS EXTENDED THE EXPIRATION DATE OF ABOVE LICENSE OR IF A NEW LICENSE HAS BEEN ISSUED WHICH SUPERSEDES THE ABOVE LICENSE.

ENCLOSURES: AEC-314
AEC-2

MATERIALS BRANCH
DIRECTORATE OF LICENSING

FROM:

Kerr-McGee Nuclear Corporation
Oklahoma City, OK

DATE OF DOCUMENT: Oct. 25, 1974

DATE RECEIVED: Nov. 1974

NO.: 2229

LTR: X | MEMO: | REPORT: | OTHER:

TO:

James R. Miller

ORIG.: | CC: | OTHER: 1 cy

ACTION NECESSARY ☐ | NO ACTION NECESSARY ☐ | CONCURRENCE ☐ | COMMENT ☐ | DATE ANSWERED: | BY:

CLASSIF: U | POST OFFICE | REG. NO:

FILE CODE: Docket No. 40-8027

DESCRIPTION: (Must Be Unclassified)
Ltr. trans:

ENCLOSURES:
Attachment: Status Report on the Sequoyah Facility

REFERRED TO	DATE	RECEIVED BY	DATE
Miller	11-14		
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Distribution			
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REMARKS:

U.S. ATOMIC ENERGY COMMISSION

MAIL CONTROL FORM FORM AEC-3286 (8-60)

☆ U.S. GOVERNMENT PRINTING OFFICE: 1973 — 503-135

40-8027

Regulatory File Cy.

KERR-McGEE NUCLEAR CORPORATION
KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

October 25, 1974

Mr. James R. Miller, Chief
Fuel Fabrication and Reprocessing
Branch No. 2
Directorate of Licensing
U.S. Atomic Energy Commission
Washington, D.C. 20545

Dear Mr. Miller:

Please refer to your letter of September 25 requesting a plan to accomplish certain objectives directed toward stopping or containing the present leakage as well as preventing the occurrence of further leakage in raffinate pond #2 at the Sequoyah Facility.

In accordance with your request, a plan discussing a proposed attack on this problem plus data through the month of September is attached. May we have your concurrence with this proposed plan as soon as practicable.

Sincerely yours,

W. J. Shelley, Director
Regulation and Control

WJS:ml

Attachment

2223

ATTACHMENT

LEAK IN RAFFINATE POND #2
STATUS REPORT, OCTOBER 25, 1974

On May 13, monitor well #2314 on the south side of the #2 raffinate storage pond of the Sequoyah Facility showed an increase in liquid level, uranium and nitrate concentration leading to the conclusion that the raffinate storage pond #2 may be leaking. Close attention paid to the pond over the ensuing 2.5 months demonstrated that a leak apparently did exist. During the ensuing three months, Kerr-McGee Nuclear Corporation constructed 14 additional monitor wells to the south and west of raffinate storage pond #2 and determined that:

1. Pond #2 was apparently leaking in a narrow plane resulting in liquid flowing from the pond to monitor well #2314 at a rate of about .25 gal/da.
2. The leak was confined to a relatively narrow front perhaps restricted to a single fissure terminating in well #2314.

The data surrounding this discovery and the information collected in the 2.5 month period ending July 30 was described in a report to the USAEC on August 14, 1974.

On September 25, the USAEC requested a plan for positive action directed toward stopping or containing the present leak be determined and submitted for their approval. This report meets the requirement of this request.

As described in the report of August 17, monitor well #2314 has been watched closely and the liquid measured and sampled approximately once per week during August and September. The results

of these observations and measurements are shown on the Figure 2 along with the data collected from May 13 through July 30 (Fig. 1). Examination of this data demonstrates that the rate of fluid accumulation in monitor well #2314 has decreased to the rate of approximately .03 gal/da. or approximately 10% of the rate determined during the first 2.5 months of the leak. The uranium concentration in the liquid has moved from approximately 700 mg/l to approximately 250 mg/l, while nitrate concentrations have been much more erratic. No pond fluid has appeared in any of the other 14 test wells drilled in May and June except well T-3 which is located between #2314 and raffinate pond #2.

From the accumulated evidence, it appears that containment efforts undertaken upon the discovery have been successful in reducing the rate of leak. These efforts included continuous evaporation of pond #2 by the use of the submerged combustion burner and maintaining the basic condition with the pH well above neutral. It is realized that leakage appearing in the monitor well #2314 might be duplicated along the south boundary of pond #2 and not intercepted by the monitor wells more remote from the pond. If it is assumed that the leak rate is occurring between wells T-2 and T-4 (33 ft., see previous report dated 8-14-74) and not appearing in either well, it could amount to the equivalent of 49.5 x .03 gal/da. or 1.5 gallons/da. It is reasonable to conclude that this pond fluid would drain to the outfall or the Illinois River and eventually into the Arkansas. The effect of this much undetected leakage has been calculated in terms of the resultant contaminate concentration of the surface waters and are tabulated below:

CONCENTRATION OF CONTAMINATES

	MPC	Pond Leak	Outfall	Illinois	Arkansas
Flow (gal/da.*)		1.5	2×10^{6}(1)	9.73×10^{8}(2)	1.62×10^{10}(2)
Ra(pCi/l)	30	150	2.2×10^{-4}	2.3×10^{-7}	1.4×10^{-8}
U(uCi/ml)	3×10^{-5}	1.8×10^{-7}	2.6×10^{-10}	2.7×10^{-13}	1.6×10^{-14}
NO_3(mg/l)	.9	645	9.7×10^{-4}	1.0×10^{-6}	6.0×10^{-8}

*Av Flow (1) Plant Records
(2) Water Resources Data for Okla. - 1973; U.S. Geol. Survey

By examination of this tabulation, it is observed that the resultant contamination would not be detectable in the receiving streams and is well below applicable limits. Based upon these assumptions, the leak rate would have to be 10^4 times as great to result in a nitrate level in the outfall exceeding Oklahoma Regulations and only then approach the radium limit in drinking water.

From these calculations, it is concluded that the rate of leakage does not constitute a threat to the environment nor the resident human or biota populations using the water.

Consequently, Kerr-McGee Nuclear Corporation will continue to monitor this leak and take corrective action in the event the leak rate exceeds 50 gal/da.

This corrective action will be as follows:

Dig a trench south of the port road at an appropriate distance to avoid disturbing the subsoil beneath the pond and construct a sump of approximately 300 gallon capacity. A pump will be installed to return collected fluid to the pond. This action will contain pond fluids on the restricted site.

It is planned to submit a request for Amendment to License SUB-1010 providing for the permanent disposal of raffinate by treatment with barium and commercial disposal of resultant ammonium nitrate solution by January 1, 1975. It is expected that approval of this treatment method will be received within a period of six months providing adequate time to install treatment facilities during the calendar year. This installation will provide a continuous method for the treatment of fresh and stored raffinate permitting termination of the storage pond usage and emptying by the end of calendar year 1978. When these storage ponds are emptied, the sludge precipitated in the bottom of the pond due to neutralization will be removed and transported to the Grants Mill for uranium recovery. Upon completion of this effort in calendar year 1979, storage pond #2 will be inspected and the bottom recompacted prior to use as an emergency storage basin in the event of failure of the raffinate treatment facilities.

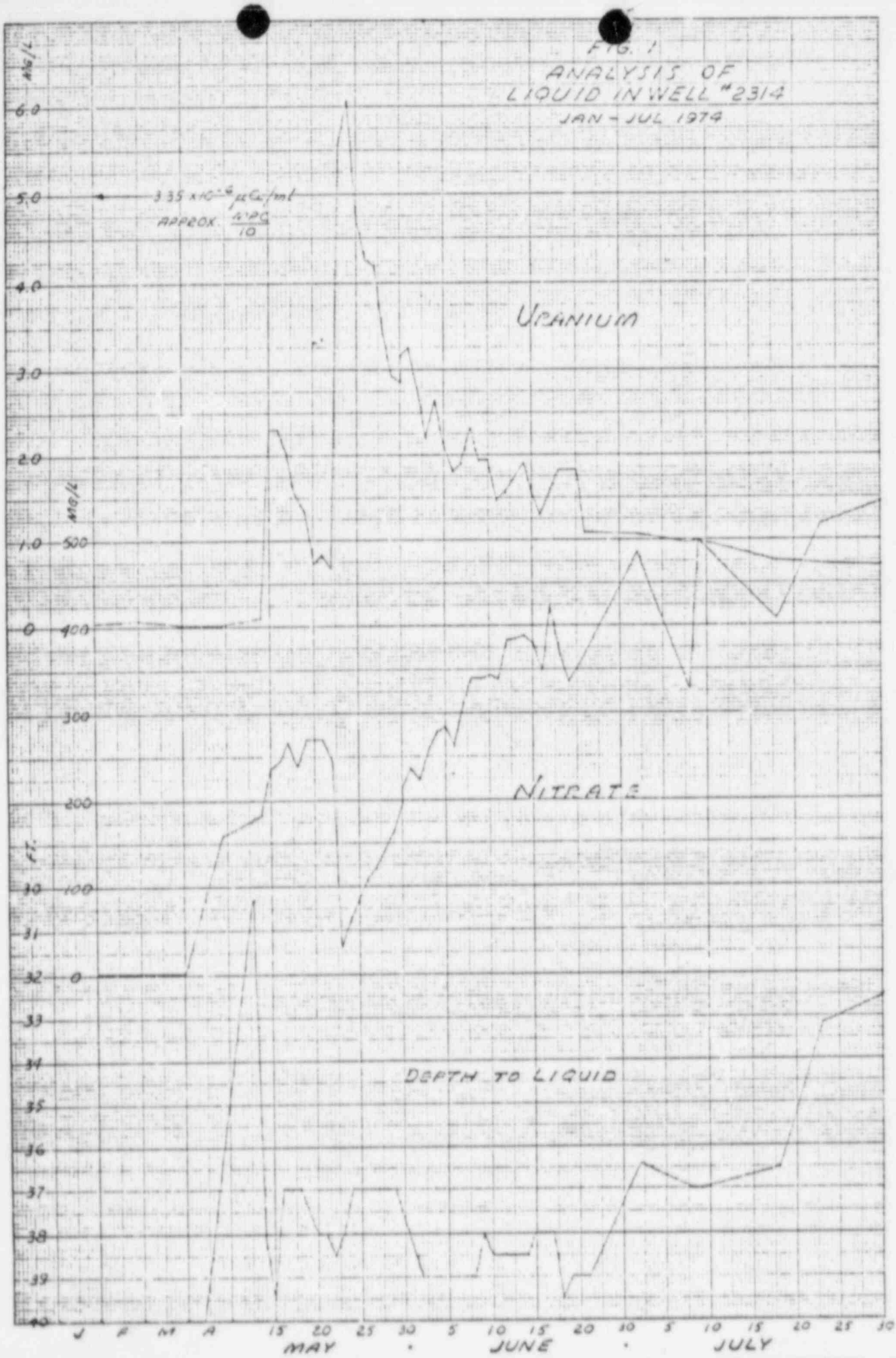
FIG. 1
ANALYSIS OF
LIQUID IN WELL #2314
JAN - JUL 1974
μg/L
6.0
5.0
4.0
3.0
2.0
1.0
0
3.35 x 10⁻⁶ μCi/ml
APPROX. 4 PCi/10
URANIUM
mg/L
500
400
300
200
100
0
NITRATE
Ft.
30
31
32
33
34
35
36
37
38
39
40
DEPTH TO LIQUID
J F M A
15 20 25 30
MAY
5 10 15 20 30
JUNE
5 10 15 20 25 30
JULY

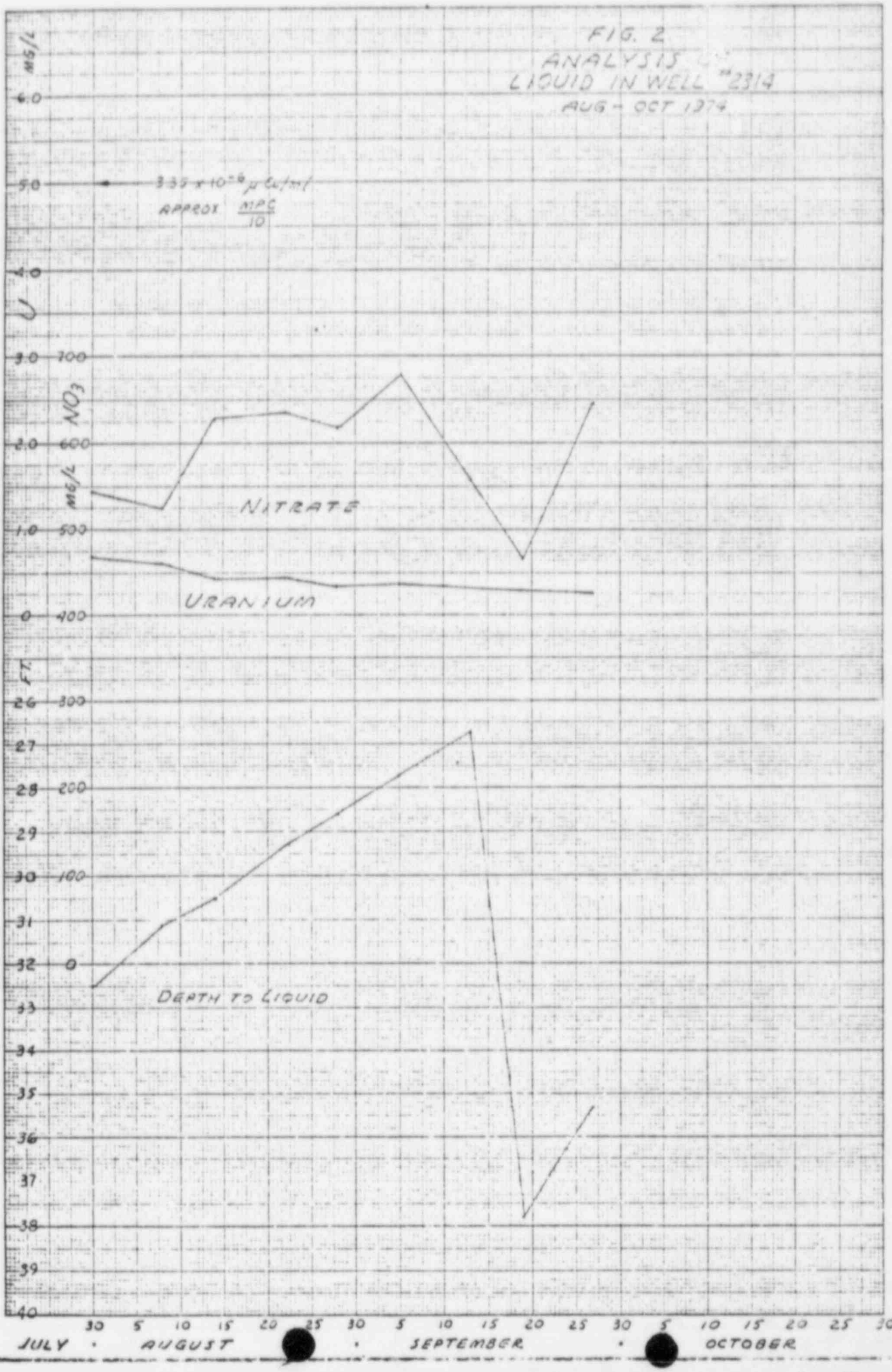
FIG. 2
ANALYSIS OF
LIQUID IN WELL "2314
AUG - OCT 1974
MG/L
6.0
5.0
4.0
3.0
2.0
1.0
0
3.33 x 10⁻⁸ μ Ci/ml
APPROX MPC/10
U
700
600
500
400
NO3
MG/L
NITRATE
URANIUM
FT.
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
300
200
100
0
DEPTH TO LIQUID
30 5 10 15 20 25 30 5 10 15 20 25 30 5 10 15 20 25 30
JULY
AUGUST
SEPTEMBER
OCTOBER

FROM

Kerr-McGee Nuclear Corp.
Oklahoma City, Oklahoma

DATE OF DOCUMENT: 10-25-74

DATE RECEIVED: 10-30-74

NO: 2146

LTR: X MEMO: RPT: OTHER:

TO

James R+ Miller
USAEC

ORIG: X CC: OTHER:

ACTION NECESSARY ☐ NO ACTION NECESSARY ☐

CONCURRENCE ☐ COMMENT ☐

DATE ANSWERED: BY:

CLASSIF: U POST OFFICE: REG NO:

FILE CODE: 40-8027

DESCRIPTION (Must Be Unclassified)

Re plan to accomplish certain objectives directed toward stopping or containing leakage, etc.

ENCLOSURES

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RO(2)			
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REMARKS

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U.S. ATOMIC ENERGY COMMISSION

MAIL CONTROL FORM FORM AEC-326S (8-60)

U. S. GOVERNMENT PRINTING OFFICE: 1973 — 525-196