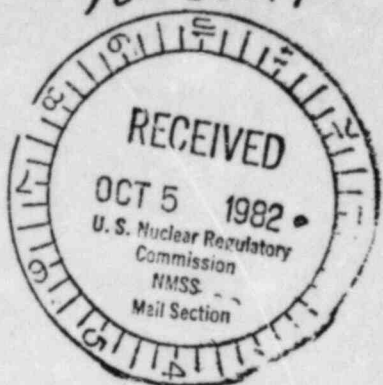


40-8027



# KERR-MCGEE CORPORATION

KERR-MCGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125



ENVIRONMENT AND HEALTH MANAGEMENT DIVISION

September 17, 1982

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

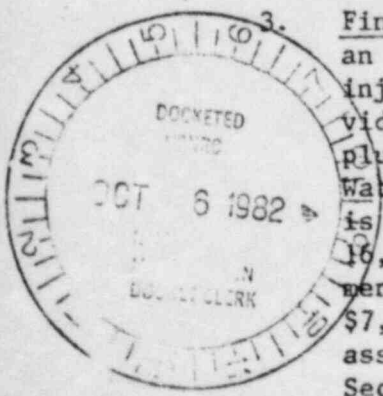
Donald A. Hensch, P.E., Director  
Industrial Waste Division  
Oklahoma State Department of Health  
1000 N.E. 10th Street  
P.O. Box 53551  
Oklahoma City, OK 73152

*PDR*  
*cc. W.A. Nixon* Return  
*To: 39655*

Dear Mr. Hensch:

Please refer to your letter dated August 24, 1982 outlining additional requirements (3 items) for the Kerr-McGee Nuclear Corporation Sequoyah facility injection well permit. These items are addressed below:

1. Two Cross sections of the geological formations normal to each other and passing through the well bore, extending over a 2 mile radius, are attached.
2. Closure plans for the injection well were previously provided in my letter to you dated July 16, 1982 (response to item 8, "Plan for plugging and abandonment", page 4) a copy of which is attached. The abandonment and plugging procedures conform to the OSDH regulations-Section 7.E.14.
3. Financial Assurance: Kerr-McGee Corporation currently has an active performance bond for the Sequoyah facility injection well under permit No. IW-70-011. This bond provided assurance that the injection well would be properly plugged when abandoned in conformance with 1973 Oklahoma Water Resources Board Regulations. This performance bond is still in force and at the annual renewal date, October 16, 1982, will be transferred to the Oklahoma State Department of Health, Industrial Waste Division and increased to \$7,500. This bond amount (\$7,500) fulfills financial assurance requirements as specified in OSDH regulations-Section 9.3.1.



Kerr-McGee has also reviewed the draft permit issued for injection well operation and offers the following comments on Draft permit Conditions:

Condition #5: states that the injection pressure shall not exceed 300 psi in the well. Kerr-McGee has submitted results of testing which demonstrate injection well tubing held at

*info by*  
*21301*

Donald A. Hensch  
September 17, 1982  
page two

3000 psi and in the annular area maintained a minimum of 400 psi during testing conducted June, 1982. (See Kerr-McGee July 16, 1982 letter). Therefore, it is requested that we have the option to operate the well at pressures equal to the pump capacities or 400 psi. This request (400 psi) conforms with injection pressures allowed under the OSDH regulations part 7E.7.

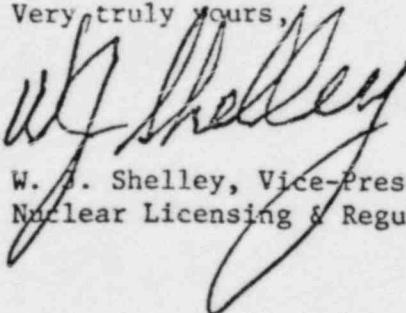
Condition #6: requires that a monitoring well be located about 200 feet southwest of injection well and completed to a depth of 400 feet.

The location described above requires that the well be placed in the space between the raffinate clarifier and the fluoride clarifier. This area is crowded with buried pipelines and utility conduits and will shortly be a construction area for the installation of a new facility. We therefore request that the distance from the injection well be extended to approximately 800 feet southwest or approximately 300 feet to the northwest of the injection well so as to place it in an area where it will be undisturbed.

Based upon our review of the lithology, Kerr-McGee believes that water exceeding 10,000 mg/l TDS may be encountered at a depth of less than 400 feet. Therefore, we request that the condition be changed to read that the depth requirement read 400 feet or at a depth where saltwater is encountered during drilling.

Construction methods and a map which shows the preferred location for this monitor well are attached. At this time, in compliance with OSDH Rules and Regulations Part 7F.5.5, Kerr-McGee requests that these specifications be approved by your Department, as required, prior to monitor well installation. Please advise.

Very truly yours,



W. J. Shelley, Vice-President  
Nuclear Licensing & Regulation

WJS/pd

ATTACH.

least one local radio station.

7. Monitoring - 7.5 Automatic Surveillance System

Response: Sequoyah facility personnel will be on-site during actual injection operations and therefore Section 7.5.2 is not applicable.

8. Plan for Plugging and Abandonment

Response: Upon completion of injection well use and permanent abandonment of the Sequoyah No. 1 "other" industrial waste disposal injection well, provisions of 7.E 14 (Parts 1-8) will be followed to include:

- (1) Kerr-McGee will provide notification to the Department of intent to plug and time during which all plugging will take place.
- (2) The well will be filled with mud from the well bottom to a point one hundred (100) feet below the top of the highest disposal zone and then with a cement plug from there to one hundred (100) feet above the top of the disposal zone.
- (3) A cement plug will also be set from a point fifty (50) feet below the shoe of the surface casing to a point five (5) feet above the lowest fresh water zone.
- (4) A final cement plug will extend from a point thirty (30) feet below the ground surface to a point five (5) feet below the ground surface.
- (5) All intervals between plugs will be filled with mud.
- (6) The top of the plugged well will clearly show the well permit number and date of plugging by permanent markings; inscribed in cement or a steel plate imbedded in cement.
- (7) Within fifteen (15) days after a well has been plugged, Kerr-McGee will file a plugging record in triplicate with the Department.

The Kerr-McGee Nuclear Sequoyah Facility operates under U.S. Nuclear Regulatory Commission License SUB-1010. As such, closure procedures for ancillary facilities (i.e. pits, ponds, lagoons) which are not used exclusively in conjunction with the injection program will be conducted in accordance with License SUB-1010.

MONITORING WELL SPECIFICATIONS  
KERR-McGEE SEQUOYAH FACILITY  
GORE, OKLAHOMA

INTRODUCTION

It has been requested by the Oklahoma Department of Health that a monitoring well be installed approximately 200 feet southwest of the #1 waste injection well located at the Sequoyah Nuclear Facility. The intended purpose of the well is to monitor the base of the fresh water zone for any indication that the operation of the waste injection well is impacting groundwater.

The following well specifications are presented for State review and approval. The specifications may change according to the availability of the well contractors equipment and by conditions encountered in the field. However, the approved specifications will be adhered to whenever possible.

WELL LOCATION

The alternate well locations are shown on the attached map.

WELL CONSTRUCTION

Drilling Method:

The well is proposed to be drilled using an air rotary rig with clean tools and drill rods.

Well Depth:

The well is designed to be drilled and completed to a total depth of 400 feet as requested by the Department of Health. It is proposed that during drilling, measurements of the specific conductance of formation water will be recorded, if possible, to determine the depth to the base of the fresh water zone. If these measurements indicate a depth of fresh water to be less than 400 feet, downhole electric logs will be performed to confirm the depth and the monitor well will be completed at the base of the indicated fresh water zone.

Well Materials: (See Figure)

Surface casing - Normal 10" diameter, 0.25" wall, steel casing will be set from surface to a depth of approximately 100 feet. This casing is to be pressure grouted (water displaced) with cement return to surface.

Well Casing - Nominal 4" diameter, 0.237" wall, Schedule 40, PVC casing with threaded couplings will be set from surface to a depth of approximately 300 feet or as determined by field conditions.

Well Screen - Nominal 4" diameter, 0.237" wall, 100 slot PVC screen with threaded couplings will be set from approximately 300 feet to total depth or 400 feet as determined in the field.

Gravel Pack - Fine (2mm-8mm) clean quartz gravel will be placed by tremie pipe from bottom of hole to 20 feet above the top of the well screen.

Bentonite - A bentonite slurry will be placed from the top of the gravel to 1 foot below grade. Portland cement will be placed from top of bentonite to grade.

Well Development:

The well will be developed by washing with clean water and air for a minimum of 30 minutes. Development will continue until on site personnel are satisfied with well performance.

Pumping Equipment:

If sufficient water is encountered a submersible pump will be set for sampling purposes. The pump intake will be set above the well screen if possible. The discharge line and well head will be equipped with a pitless adapter, switchbox and "winterized" subgrade valved installation to enable sampling at the well head.

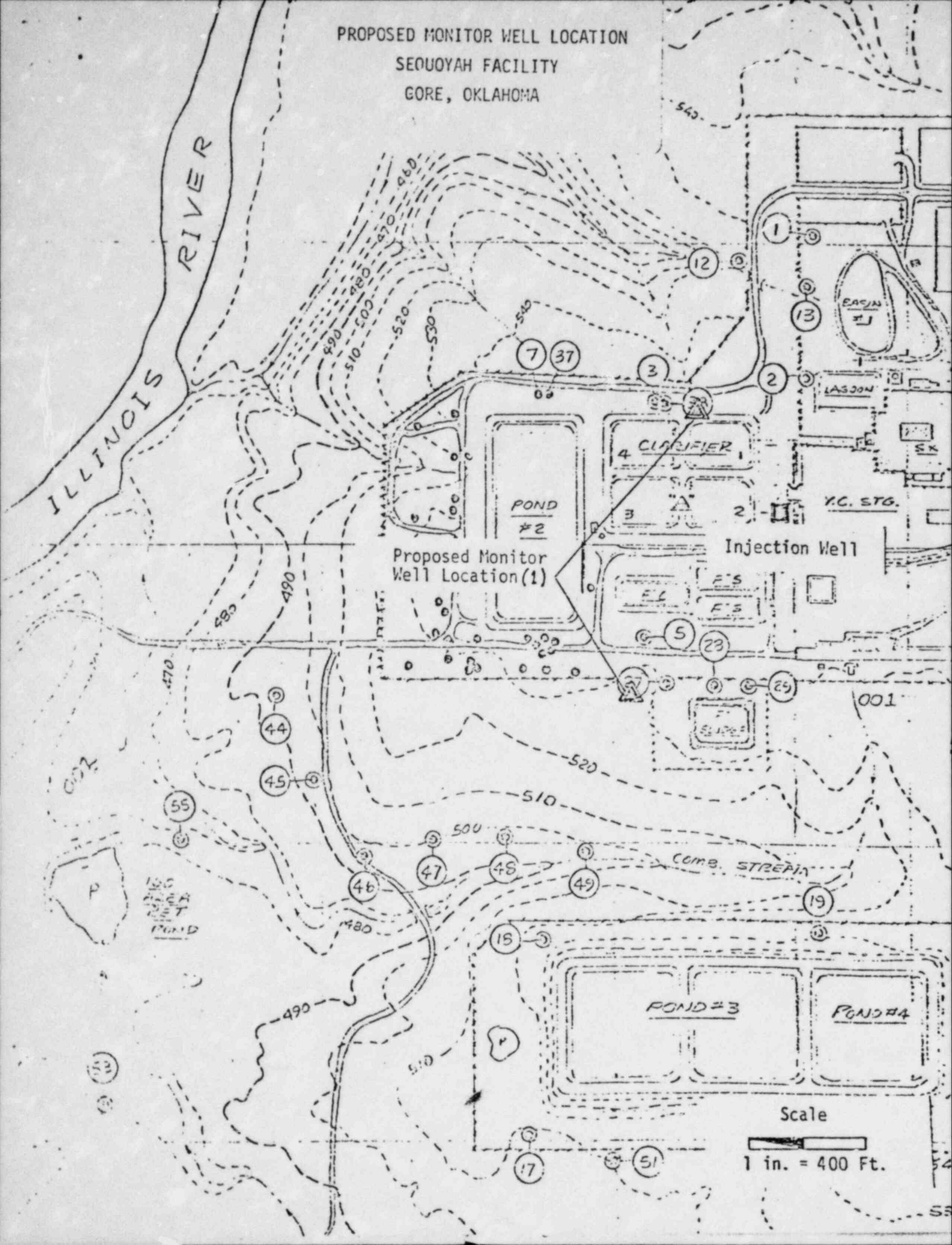
A 1" PVC drop pipe will be set in the well to provide access for water level measurements.

Well Maintenance:

The well will be evacuated by pumping prior to each sample period. Due to anticipated low yields, recovery periods are expected to be lengthy and water levels may decline with frequent pumping. Access will be provided so that servicing of the pump or bailing of the well may be done if needed.

Periodic field tests will be conducted to confirm that the well remains open and responsive to aquifer conditions.

PROPOSED MONITOR WELL LOCATION  
SEOUOYAH FACILITY  
CORE, OKLAHOMA



PROPOSED MONITOR WELL  
SEQUOYAH FACILITY

