CONVERSATION RECORD

TIME | DATE

TYPE ☐ VISIT ☐ CONFERENCE ☐ TELEPHONE ☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO:
D. Shelley	Kerr McGee	405 270-2631

ROUTING	
NAME/SYMBOL	INT

SUBJECT

SUMMARY

Confirmed:

Kerr-McGee Corporation

Kerr-McGee Center

Oklahoma City, OK 73125

All byproduct licenses correct with exception of 08 license which E. Barry can correct without an amendment.

Mr. Shelley said he is responsible for all upper license & he has a terrible time keeping incoming mailings straight. I suggested he possibly wanted to think about adding a department or other identifying info in his mailing address. I instructed him as to how he could accomplish this & asked him to send 2

ACTION REQUIRED copies for each license he listed on a letter requesting new mailing address

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
	J. Martin	12/21/81

ACTION TAKEN 08 license address corrected to read 73125. Also SUB-1010 corrected to read zip 73125

SIGNATURE	TITLE	DATE

50271-101 ☆ U.S. Government Printing Office: 1980-341-526/6230 CONVERSATION RECORD

OPTIONAL FORM 271 (12-76) DEPARTMENT OF DEFENSE

8512170114 811221
PDR ADOCK 04008027
C PDR

FROM	DATE OF DOCUMENT	DATE RECEIVED	NO.
Kerr-McGee Corporation	12/9/81	[illegible]15/81	20047

LTR: x | MEMO: | REPORT: | OTHER:

TO	ORIG	CC	OTHER
W.T.Crow	1	4	

ACTION NECESSARY ☐ | CONCURRENCE ☐ | DATE ANSWERED

NO ACTION NECESSARY ☐ | COMMENT ☐ | BY

CLASSIF: un | POST OFFICE: | REG NO:

FILE CODE: 40-8027

DESCRIPTION (Must Be Unclassified)

responses to science applica tions,Inc. questions of 4/17/81

ENCLOSURES

REMARKS

REFERRED TO	DATE	RECEIVED BY	DATE
Reg File cy	12/17		
WMUR (2)			
I&E Region			
PDR			
		20047 DLC	

U. S. NUCLEAR REGULATORY COMMISSION — MAIL CONTROL FORM — FORM NRC-326 (1-75)

40-8027

PDR

Return to D. CRAMER 396-SS

KERR-McGEE CORPORATION

KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

ENVIRONMENT AND HEALTH MANAGEMENT DIVISION

December 9, 1981

RECEIVED DEC 23 1981 US NUCLEAR REGULATORY COMMISSION DOCUMENT MANAGEMENT BRANCH

DOCKETED USNRC DEC 17 1981 NMSS MAIL SECTION DOCKET CLERK

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

W. T. Crow, Section Leader
Uranium Process Licensing Section
Uranium Fuel Licensing Branch
Division of Fuel Cycle & Material Safety
US Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 40-8027

Dear Mr. Crow,

On April 17, 1981, Science Applications, Inc. (SAI) requested supplemental information on Kerr-McGee's application concerning the uranium processing sludge disposal process at the Sequoyah facility. The supplemental material is to be incorporated into the preparation of the Environmental Impact Assessment (EIA) concerning the disposal process.

In response to SAI's request, Kerr-McGee submits the attached package (5 copies) answering the questions asked. The format includes the question asked followed by Kerr-McGee's response.

Sincerely,

John C. Stauter

for W. J. Shelley, Vice President
Nuclear Licensing and Regulation

JCS/ba/pls

U.S. NUCLEAR REG. COMMISSION MAIL SECTION

1981 DEC 15 PM 3 24

RECEIVED

FEE EXEMPT

add'l info to 5/1/81 application M/C 19054 $3000 fee pd

~~8201050412~~ 811209
PDR ADOCK 04008027
C PDR

20047

SEQUOYAH FACILITY RAFFINATE SLUDGE DISPOSAL

RESPONSE TO SCIENCE APPLICATIONS, INC.
QUESTIONS OF APRIL 17, 1981

DECEMBER, 1981

Construction of Sludge Processing Facilities

1. Describe the activities associated with the construction of the sludge processing facilities. Specific areas of interest are those of digging and road construction which might produce noticeable amounts of dust in the air or silt in surface waters. Any design standards which will be followed should be referenced. In the event that such facilities involve piping of sludge from the pond to a more remote area for processing, please address the measures taken during construction and after completion of the project to assure restoration of the affected land.

Response:

The sludge processing facilities, disposal pit, pipelines, and roads will be built to specifications set forth by Kerr-McGee. Much of the construction specifications is derived from the Standard Specifications of Highway Construction (SSHC) as promulgated by the Oklahoma State Highway Commission. These specifications are particularly applicable to clearing of brush, road construction, and pipeline installation and burial.

The clearing of brush, trees, and grass is guided by Section 201 of the SSHC. Topsoil will be stockpiled for reclamation of the pit and processing areas according to Section 201 of the Specification. Dust generated during construction will be controlled by water sprinkling as needed.

Rainwater runoff during construction and operation will be controlled by use of bale barriers erected according to Section 222 of the SSHC.

After construction, peripheral areas that are not used for actual processing or burial will be graded and seeded with bermuda grass. These areas would include locations for salvaged topsoil, excavated materials, road embankments, and other areas deemed necessary.

Pipeline excavation and installation will follow the same specifications for salvaging topsoil as set forth previously. All excavated soils will be used to backfill the pipeline trench followed by preparation and seeding with bermuda grass.

At the completion of the project measures will be instituted to provide for total site reclamation consistent with soil conservation practice as was done during construction and operation.

Sludge Processing Facility and Operation

1. Describe the general system to be used for processing the waste, including in the description all of the major processing, storage and effluent control components. This description should address not only the radioactive portions but also the non-radioactive portions of the process (asphalt or cement storage and handling).

   Response:

   The Sequoyah facility generates 7.2×10^6 gallons per year of process raffinate. This raffinate is gravity fed from hold tanks in the process Solvent Extraction section to the Clarifier Basins for treatment and subsequent disposal. The raffinate is neutralized by NH_3 addition generating a solid hydrous precipitate which settles out forming the waste sludge. Clarified raffinate supernatant is transferred by a small pump to another clarifier Basin and from there to a treatment area where soluble radionuclides are removed by contact with barium chloride. The clean raffinate is then transferred to Raffinate Holding Pond #3 for further disposition.

   Settled waste sludge is pumped from the Clarifier Basins and Storage Pond #2 by means of a barge mounted diaphram pump to four primary dewatering tanks of twenty thousand gallon capacity each. There, the sludge is further settled facilitating removal of more clarified raffinate which is returned to the Clarifier Basins or

Pond #2. The settled sludge is pumped to the disposal site for final treatment. The plant and burial site equipment is shown in drawing number 290-M-1011 presenting the proposed sludge treatment process. The process flow diagram for sludge disposal is shown in Figure 1.

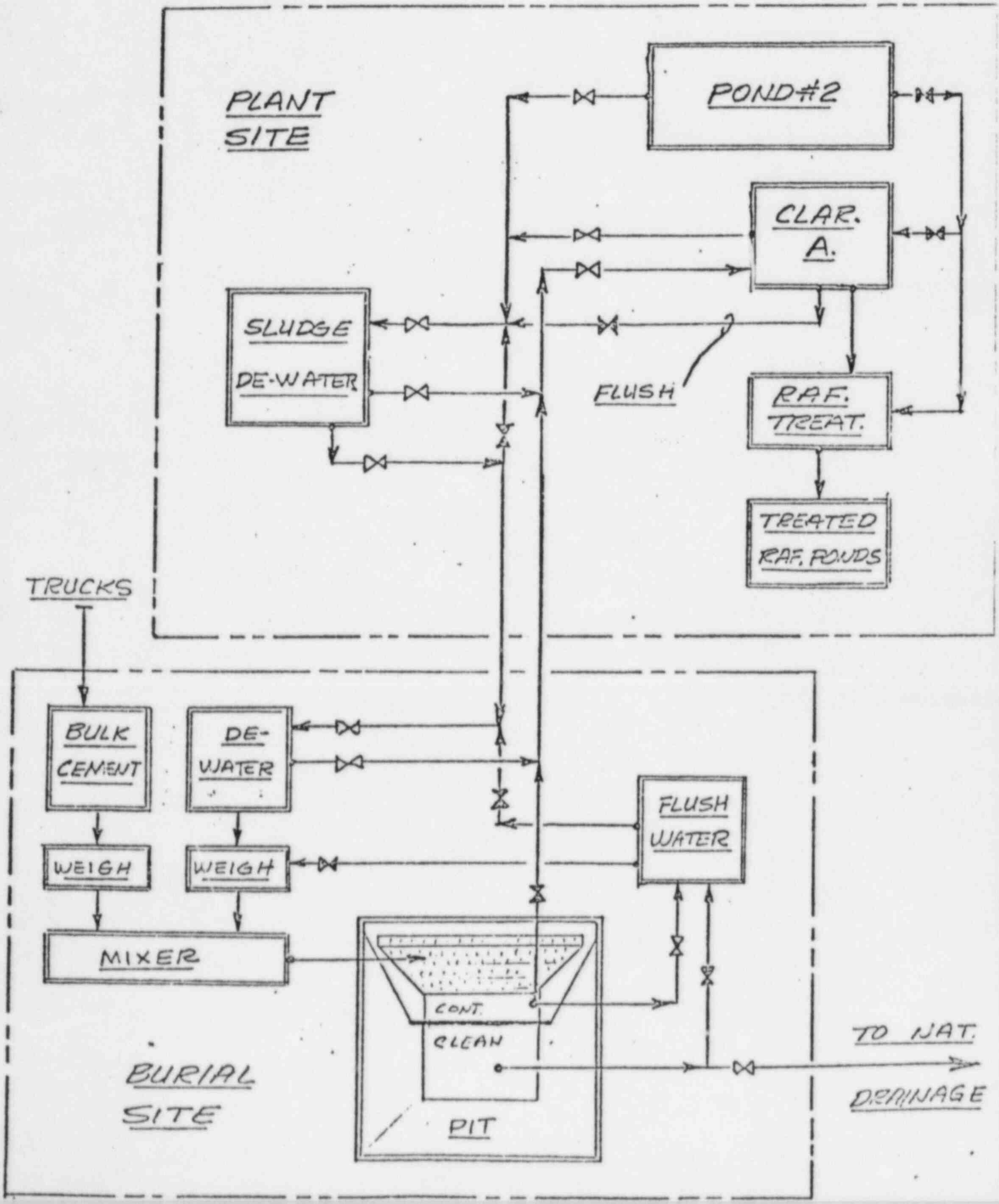
The settled sludge from the primary dewatering tanks is pumped 8,300 feet to the burial site treatment area through a 4 inch pipeline. The treatment area is 140 feet higher than the primary dewatering tank location. A 20,000 gallon surge tank receives the sludge at the burial site where it is allowed additional settling time. Any clarified raffinate is decanted and gravity fed through a 4 inch waste water line that returns to the sludge dewatering plant at the raffinate treatment area.

Settled sludge from the surge tank is discharged to a 1000 gallon capacity sludge measuring tank where the sludge volume is adjusted for the proper cement mix. Approximately 20,000 gallons per day of sludge is processed in this manner.

Dry cement is stored in a 175 ton silo from which 138 tons is consumed per day. Trucks deliver the dry cement and transfer it to the storage silo by air conveyors. Cement dust is controlled by bin vents. Screw feeders deliver dry cement from the silo to a 1,000 gallon capacity measuring tank so that a 1:1 volume ratio of sludge to cement can be obtained.

The sludge and cement measuring tanks empty into a 4.5 cubic yard batch cement mixer. After mixing thoroughly the cement/sludge material is emptied into a 5 cubic yard holding hopper. The holding hopper feeds into the suction side of a concrete pump which discharges into a flexible hose that deposits the material for permanent disposal into 4' x 4' x 8' ready made casting forms erected in the burial pit.

FIG 1: CEMENT PROCESS FLOW DIAGRAM



Wash lines are provided to the parts of the process which are in contact with wet cement. This includes the 4.5 cubic yard mixer, 5 cubic yard holding hopper, the concrete pump and the discharge lines. During flushing, the discharge is emptied into a sump tank where the cement mixture settles out and contaminated water returned via the previously described waste water return line to the plant raffinate treatment area. Two sources of wash water are available. The primary source is contaminated rainwater from the pit which is stored in a 1,000 gallon tank. Potable water is available as a backup supply.

Rainwater is separated into uncontaminated and contaminated water in the disposal pit by a partition across the pit bottom. Contaminated water has come in contact with the cast sludge/cement material. Uncontaminated water is pumped from the burial pit to natural drainage. Contaminated rain water is pumped to storage. This contaminated water can be used as wash water or fed directly to the waste water return line described previously.

Ammonia evolved from the cast cement/sludge blocks is diluted with air and vented through a stack located adjacent to the disposal pit. Sufficient air dilution is maintained to achieve the 50 ppm ($35 mg/m^3$) NIOSH recommended ceiling for permissible exposure and is established at the facility boundary limits. Sufficient ambient air movement within the pit is provided to maintain radiation levels below Federally regulated criteria as promulgated in 10 CFR Part 20.

2. Describe the expected normal and accidental releases associated with the proposed operation. Estimates should be made of both radiological and chemical effluents and the basis for the estimates (design calculations or experimental data) provided.

Response:

Ammonia evolution is the most noteworthy occurrence from the sludge disposal facility. The dewatered sludge feed assays

approximately 2.5 wt % NH_3 of which approximately 90% is ultimately released. Ammonia release occurs over a period of time after mixing and casting may be closely approximated using the following equation generated from a least squares analysis of the data for times greater than five hours:

$$\% \ NH_3 \text{ evolved} = (60.3 \times \log \text{Time}) - 18.6$$

where time is expressed in hours. Only 24% of the ammonia is evolved after 5 hours. Release is essentially complete after 72 hours (3 days). Of note is the absence of an immediate initial release of the bulk ., the ammonia upon addition of cement through which significant capture could be accomplished by a scrubbing system attached to the mixing facility.

Since the slow release of ammonia negates the installation of a scrubbing system, a hooded ventilation/dilution system covering an area of approximately three days production of cast blocks in the pit is proposed. A constant flow of air is drawn over the blocks and vented up a stack at the pit surface thus diluting the ammonia evolved. The vented ammonia, being at the top of the disposal site hill, undergoes further dilution once discharged to the atmosphere. Sufficient initial sweeping air flow will be maintained so as to meet the NIOSH recommended 50 ppm (35 mg/m^3) 8-hour time weighted average concentration at the site boundary after additional atmospheric dilution.

During disposal operations ammonia evolution will average approximately 60 $ft.^3$ per minute and is the volume ultimately diluted by the atmosphere. Dilution to permissible exposure concentrations will be accomplished by exhausting ammonia and air through a stack at the top of the disposal hill. Approximately 250,000 SCFM air will accomplish the initial sweep volume dilution followed by normal atmospheric dilution for the remainder.

Radon evolution rates following block casting and disposal are currently being determined in order to provide an accurate release rate equivalent to that determined for ammonia release. As noted in

the original submittal, however, radon levels are expected to be insignificant and well within promulgated standards.

Overall radiological dose rates to personnel operating the sludge disposal system will be similar to dose rates resulting from handling uranium compounds of the same uranium concentration in slurry form as currently practiced at the Sequoyah facility. It is estimated that an operator working in the disposal pit around solidified sludge would be exposed to less than 2 millirem per hour of gamma radiation.

3. Describe the equipment and operational procedures which will be used for dealing with accidental spills and discuss how these will limit the extent or consequence of a spill.

Response:

The environmental impacts from possible accidents during processing were thoroughly discussed in Section 5.0 of the submitted sludge disposal plan. Described in each possible event occurrence were general procedures employed to detect the various potential system component failures.

Operation of the sludge disposal facility will be such that early recognition of a potential problem will be forthcoming and appropriate action taken. The modular construction of the processing facility into dewatering, pumping, mixing, and casting segments aids greatly in the control of accidental events as they can be readily localized and contained. Typically, each process module and ancillaries are erected on pads to provide stability and directed containment.

Breaks in the slurry pipeline will be detected by pressure sensors set to shut down operation and minimize the extent of such spills. Further environmental safeguards exist in that the slurry in transit is neutral in pH thus limiting the potential for harmful leaching at the spill point.

In the event of a spill, proper equipment will be dispatched to clean up and excavate or remove all contamination followed by restoration of the natural contour.

4. Describe the operational procedures which will be used to assure proper operation of environmental protection equipment such as radon or ammonia scrubbers.

Response:

The procedures to assure proper operation of environmental protection equipment are those established for the Sequoyah Facility now in operation: namely routine maintenance and calibration of the process and monitoring equipment. The sludge disposal facilities will be subject to rigid quality, health physics and monitoring controls much as those already instituted at the plant to assure the maximum protection achievable.

Monitor wells and airborne contaminant measurements will be sampled on a set routine. Air monitoring for radon and other airborne radionuclides or particulates will be a continuing function during pit disposal and closure operations with records of these measurements maintained.

Radon and ammonia releases will be dispersed by atmospheric dilution as neither are evolved at a rate sufficient for the optimum use of scrubbers. The rate of ammonia evolution was addressed previously in Question 2 of this section.

Pit Construction/Operation/Closure

1. Describe in quantative terms how rain water will impact pit operation, how much contaminated leachate is expected to be formed and how it will be handled.

Response:

The solidified sludge blocks will lay up the side of the burial pit (along the slope in a brick pattern) in widths as required for each year. At the end of each year the top surface of the waste at filled pit level will be covered for permanent disposal with a clay, Hypalon, and soil layer sequence. This will minimize rainwater contact with the disposed material and minimize contaminated rainwater accumulation in the pit.

The average rainfall for the area is about 42.7 inches/year. Rain accumulation in the pit will diminish yearly due to the partial closure steps mentioned above. In addition, a divide erected in the pit to facilitate separation of contaminated and non-contaminated water will further minimize water treatment requirements. Drawing 290-C-1014 shows the proposed utilization of the rainwater divided gutter.

The rainwater divide wall in the pit will be designed to contain and keep separated a three inch rainfall without the need for pumping. Design for this rainfall capacity provides for all but rare excessive precipitation occurrances. The schematic flow diagram of the disposal operation shown in Figure 1 depicts the rainwater treatment process to be employed. Contaminated rainwater accumulation will be pumped to clarifier A or Pond #2 and ultimately become part of the treated raffinate produced at the facility as discussed in Question 1 of the "Sludge Processing Facility and Operation" section of this submittal. Uncontaminated rainwater is discharged directly to site run-off.

2. Describe the geologic/hydrologic investigations to be conducted during development of the pit in order to verify original design assumptions. Discuss the options to be considered if the assumptions are not supported by the additional investigations.

Response:

The geologic/hydrologic data used in the sludge disposal pit design are relatively straight-forward and have been confirmed by field tests. The groundwater monitoring wells and core holes developed at the proposed disposal site have further defined the geology and hydrology of the underlying Atoka Formation and have provided detailed information on conditions projected to be encountered during pit development.

The pit design depth of 70 feet as shown on KM drawing number 290-C-1014 places the pit bottom in an upper sandstone unit of the Atoka. Excavation will go completely through a shale unit overlying this sandstone. The descriptions and properties of the shale and sandstone units are described in detail in Exhibit C "Hydrologic Assessment" of the Sequoyah Facility Sludge Disposal Plan. Figures 5 and 6 of Exhibit C show the units to be encountered during pit development.

Groundwater at the pit site is approximately 35 feet below the completed pit bottom. A "perched" lens of water contained in the basal section of the highest shale unit has been shown to exist by monitor wells. This water will be drained during initial pit excavation. The perched water is not expected to reoccur after draining because the primary source of recharge, an old stock pond, has been eliminated.

Although pit construction is not expected to encounter any geologic or hydrologic conditions significantly different than those described in Exhibit C, Kerr-McGee plans to routinely examine

and document the geologic units encountered during pit excavation by field logs and photographs. Data collected during these investigations will be compared to previously collected data and any significant changes (faulting, rock type, etc.) will be considered and any needed design changes made. Routine monitor well measurements will also be done to identify any changes in the groundwater environment occuring during pit development. All hydrogeologic data collection and interpretation during pit construction will be done under the direction of the Kerr-McGee Hydrology Department.

3. Describe and provide the rationale for the expected hydrologic performance of the site during operation and after closure.

Response:

The hydrologic performance of the sludge disposal pit area will be closely monitored by wells and surface sampling points during construction, operation and a sufficient time after closure to confirm the integrity of the disposal pit design.

Surface water will exist only as intermittent runoff following precipitation events. The planned pit construction includes surface drainage away from the pit area. Water collected in the pit is segregated and will be analyzed. Any uncontaminated water will be returned to natural drainage outside the pit walls. Contaminated water will be returned via pipeline to treatment facilities at the plant site.

Groundwater protection is provided by the initial solidification of the sludge with concrete. Pit development includes the installation of a Hypalon membrane liner installed over five feet of compacted clay exhibiting a very low permeability. During pit closure a clay, Hypalon liner, and native topsoil cover will be placed over the solidified sludge to greatly reduce the possibility of surface water penetration. A

cross-section of the disposal pit during operation and after closure is presented in drawing 290-C-1014 showing the sludge isolation procedure from the environment.

Projected permeabilities and fluid travel time velocities through the cover were presented in detail in Exhibit C. The information indicates that projected impacts to both surface water and groundwater resources are expected to be negligible. Documentation and assessment of impacts, nevertheless, will be possible with the monitoring program.

Long Term Site Performance

1. Describe the expected performance of the closed site relative to both hydrologic and wind erosion phenomena. Please provide the analytical and data bases for the performance prediction. Discuss the sensitivity of the performance to design variables such as soil thickness, cover crop, rainfall, adsorption coefficients, fracture pattern, etc.

Response:

The effect of wind and water erosion of soil placed over the disposal pit during closure was investigated using an analysis described in Estimating Soil Loss Resulting from Water and Wind Erosion, State of Oklahoma, U. S. Department of Agriculture, Soil Conservation Service, Stillwater, Oklahoma. The method for evaluation of soil loss resulting from water erosion was the Universal Soil Loss Equation. Soil loss from wind erosion is not considered by the Soil Conservation Service to be a factor in the eastern two-thirds of Oklahoma and was therefore neglected following an exploratory calculation of 0.1 ton soil loss per acre per year based upon best parameter estimates.

Soil loss by water erosion was calculated under worst case criteria for the first year assuming a bare ground situation followed by a cover of bermuda grass in all later years.

The universal soil loss equation for first year bare earth exposure yielded a value of approximately 41.5 tons of soil lost per year per acre or about one quarter inch of cover depth. Coverage with mulch would reduce the loss to one thirty second inch per year per acre (0.83 tons soil per acre per year). After the first year, when a stand of grass is established, the soil loss drops to an insignificant 0.12 tons soil per acre per year.

The above analysis further assumed that closure would be done all at once rather than the planned yearly coverage of completed disposal area and is therefore a worst case. Incremental pit closure assures immediate attention and provides the ability to perform any required remedial action during operation of the disposal site. The proposed top earth cover of five foot thickness is sufficient to insure against erosion and exposure of the disposal pit clay and Hypalon liner system. The earth cover is also adequate in preventing frost damage to the clay liner.

2. Describe the proposed monitoring program that will be used to assure that the facility is performing as designed. The description should include a rationale for location and number of monitoring points.

Response:

A hydrologic monitoring program will be initiated during construction of the pit and will continue for some reasonable time after closure of the facility. Monitoring locations will consist of both surface water and groundwater points.

Surface water will only occur as rainfall into the pit area and as runoff from adjacent mixing and operation areas. Samples from both areas will be collected as dictated by precipitation events and any contaminated water will be sent to treatment facilities via pipeline.

Groundwater will be monitored quarterly from wells surrounding the pit area. Wells S-10c, S-11c and S-12, near the pit boundaries, monitor the shallow zone that would be the first stratum impacted if seepage did occur from the pit. Other wells, S-4 thru S-9, monitor the deeper zone that represents a regional water table. Detailed well descriptions and locations were presented in Exhibit C of the submitted plan. The location of monitor points in relation to the completed disposal site is shown in drawing 290-C-1013.

Alternative Actions

1. Describe the alternatives to on-site disposal that were considered. Provide the rationale for weighing each alternative, including the consideration of timing.

Response:

Alternatives to on-site disposal of raffinate wastes were presented in the Sequoyah Sludge Disposal Plan as three possibilities; combination with mill tailings, storage in an abandoned mine and commercial burial in a licensed burial site. No additional alternatives have been forthcoming.

In addition to the described drawbacks to the alternate disposal processes in the submitted plan, the nature of the sludge itself establishes further barriers to off-site disposal.

Mixing of the raffinate sludge slurry with mill tailings at Grants, New Mexico does not cement or fix the contained nitrates, present as ammonium nitrate, therefore producing a volume of potentially harmful nitrate excursion into a groundwater aquifer from seepage. Nitrates are notorious for their solubility and mobility in groundwater and it is doubtful that the State of New Mexico would permit the untreated placement of such material into the mill tailings environment under any circumstances.

Sludge disposal in an abandoned limestone mine containing recoverable resources is tenuous at best besides being an inefficient consumption of a valuable raw material. Attempted disposal in an abandoned, mine-out pit would further be precluded since the potential for liquid migration and intrusion is enhanced due to the previous severe mining activity.

Licensed burial sites would expressly prohibit disposal of liquid radioactive waste. Rupture or degradation of the storage container would expose the facility to seepage of huge volumes of contaminated material in the form of radionuclides, heavy metals, and nitrates. Proposed rules for licensing future low level waste disposal facilities expressly prohibit liquid disposal unless accompanied by an appropriate absorbant volume to mitigate against such a release occurrence.

In summary, timing has negligible impact on assessment of disposal options for the low level radioactive sludge waste produced at the Sequoyah Facility since these alternatives are technically undesirable.

Long-Term Site Care

1. Describe the arrangements that have been or will be made for ownership, surveillance and/or maintenance of the burial site after closure in order to assure its restricted use.

Response:

In accordance with Federal and State regulations concerning hazardous waste and radioactive waste disposal, arrangements will be made to pass title of the site to the State of Oklahoma. Preliminary discussions with the Oklahoma State Department of Health, the agency charged with regulatory authority of hazardous and radioactive wastes, has indicated appropriate title transfer would be facilitated. The basis of title transfer would depend upon

approval of the technical criteria for site construction, operation, and closure.

2. Identify the permits, licenses, approvals and other entitlements which must be obtained for the proposed action and describe the status of compliance.

Response:

Application for permit to develop and operate a low level radioactive waste disposal facility for raffinate sludge at Sequoyah would be made to the State of Oklahoma and to the United States Nuclear Regulatory Commission. Radioactive waste disposal permitting is part of, and in addition to, a more general approval process under the hazardous waste statutes of the State of Oklahoma.

OVERSIZE DOCUMENT PAGE PULLED

SEE APERTURE CARDS

NUMBER OF PAGES: 1

ACCESSION NUMBER(S):

8201050417

APERTURE CARD/HARD COPY AVAILABLE FROM RECORD SERVICES BRANCH, TIDC FTS 492-8989

FROM	DATE OF DOCUMENT	DATE RECEIVED	NO
Kerr-McGee Corporation	11/19/81	11/[illegible]1	19962

LTR: X | MEMO | REPORT | OTHER

TO: WANixon

ORIG: 1 | CC | OTHER

ACTION NECESSARY ☐ | CONCURRENCE ☐ | DATE ANSWERED

NO ACTION NECESSARY ☐ | COMMENT ☐ | BY

CLASSIF: un | POST OFFICE | REG. NO

FILE CODE: 40-8027

DESCRIPTION (Must Be Unclassified):
in reference to their monitor well program concerning the leakage of raffinate pond No. 2

REFERRED TO	DATE	RECEIVED BY	DATE
Reg File Cy FCUF (4)	12/03		
I&E Region PDR			
		cec 19962	

ENCLOSURES:
1 cy rec'd

REMARKS

U.S. NUCLEAR REGULATORY COMMISSION

MAIL CONTROL FORM

FORM NRC-326 (1 75)

40-8027
PDR
Return to Dave Cramer 39655

KERR-McGEE CORPORATION

KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

ENVIRONMENT AND HEALTH MANAGEMENT DIVISION

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

November 19, 1981

DOCKETED USNRC DEC 2 1981 NMSS MAIL SECTION DOCKET CLERK

Mr. William A. Nixon
Division of Fuel Cycle and Material Safety
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Docket No. 40-8027, Sequoyah Facility

Dear Mr. Nixon:

This is in reference to our monitor well program concerning the leakage of raffinate pond No. 2. Recent data shows a build-up of NO_3(N) levels in well 2319. This well was dry in 1978, yielded an average of 790 mg/ℓ in 1979, and showed 520 mg/ℓ in 1980. Because of elevated levels of NO_3(N) the sampling frequency was increased.

Meanwhile, additional wells will be emplaced down gradient from the pond.

Should you require additional information, please let me know.

Very truly yours,

WJ Shelley

W. J. Shelley, Vice President
Nuclear Licensing & Regulations

RECEIVED DEC 7 1981 U.S. NUCLEAR REGULATORY COMMISSION

FEE EXEMPT

8112180090 811119
PDR ADOCK 04008027
C PDR

Original not received

19962

SEQUOYAH FACILITY
Kerr-McGee Nuclear Corporation

Monitor Well 2319

Date	mg/ℓ $NO_3(N)$	mg/ℓ Uranium	Depth to Water, Feet
1978			
Jan-Dec			Dry
1979			
March			Dry
June	792	0.010	21.2
July	800	<0.007	N/A
September	760	0.018	[illegible]
December	820	0.012	[illegible]
1980			
March	600	0.017	22.4
June	451	0.042	23.8
September			Dry
December			Dry
1981			
February	190	0.027	19.9
May 29	2540	<0.007	7.3
June 11	3725	0.011	18.8
18	4120	<0.007	18.5

Date	mg/ℓ $NO_3(N)$	mg/ℓ Uraniun	Depth To Water, Feet
1981			
July 2	3200	0.007	18.1
9	3400	0.024	16.4
16	4100	0.011	18.4
24	1300	0.031	18.6
31	3820	0.008	18.1
August 6	2300	<0.007	19.9
14	4600	0.008	18.8
20	3800	<0.007	18.7
Sept 1	5100	<0.007	18.6
5	4200	0.028	21.7
10	3500	0.013	18.9
Oct 1	4200	<0.007	19.2
8	4200	-----	19.2
13	3300	-----	19.1
14	3800	-----	18.3
15	3800	0.010	18.7
16	2100	-----	18.7
17	2400	-----	17.2
18	2000	-----	17.2
19	2300	-----	18.7
20	2500	-----	18.7
22	2200	0.012	18.7
Nov 5	3300	<0.007	15.5
12	5700	0.009	13.4

19962

FROM	DATE OF DOCUMENT	DATE RECEIVED	NO.
Kerr-McGee Corporation	11/16/81	11/23	19945

LTR	MEMO	REPT	OTHER
X			

TO	ORIG.	CC	OTHER
WANixon	1		

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

CLASSIF: un

POST OFFICE

REG. NO.

FILE CODE: 40-8027

DESCRIPTION (Must Be Unclassified)

attached is the data summary for 1980

ENCLOSURES

1 cy rec'd

REMARKS

REFERRED TO	DATE	RECEIVED BY	DATE
Reg File Cy	12/03		
FCUF (4)			
I&E Region			
PDR			
		cec 19945	

U. S. NUCLEAR REGULATORY COMMISSION

MAIL CONTROL FORM

FORM NRC-326 (1-75)

40-8027
PDR
Return to Dave Cramer 39655

KERR-McGEE CORPORATION

KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

ENVIRONMENT AND HEALTH MANAGEMENT DIVISION

November 16, 1981

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. William A. Nixon
Division of Fuel Cycle and Material Safety
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 40-8027 (Sequoyah)

Dear Mr. Nixon:

Please refer to our transmittal of January 11, 1977 concerning leakage of raffinate pond No. 2 which stated that we would furnish the NRC monitor well data on an annual basis. Attached you will find the data summary for 1980.

During 1980 monitor wells 2314, T-4, T-2 and T-1 exhibited the highest nitrate values, while well ED-1 showed a decrease in nitrate levels compared to 1979.

Well 2314 exhibited a wide range of nitrate concentration (~450-3250 mg/ℓ) which was partially due to the variation in well volume. Although the average concentration of NO_3(N) increased there was no significant impact upon the underflow rate or raffinite leakage rate. Based upon the 1980 data the underflow resulting from raffinate leakage is approximately 0.088 gpd. Hence, the calculated value of the leakage rate is consistent with data from previous reports.

Should you require additional information, please let me know.

Sincerely,

W J Shelley

W. J. Shelley, Vice President
Nuclear Licensing & Regulations

cc: Ron Jarman
Okla Water Resources Board

DOCKETED USNRC DEC 2 1981 NMSS MAIL SECTION DOCKET CLERK

RECEIVED DEC 7 1981 U.S. NUCLEAR REGULATORY COMMISSION

FEE EXEMPT

8112210076 811116
PDR ADOCK 04008027
C PDR

Original not Rec'd

1980 LOCATION 91-16	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
2201	$NO_3(N)$	mg/l	0.2	0.2	0.4	0.1	.2	0.3	0.2	.2	0.3	.2	0.2	0.1	1/30
Illinois	Fluoride	mg/l	0.2	0.5	0.3	0.2	.2	0.1	0.2	.2	0.1	.4	0.2	0.3	
River -	Gross α	pCi/l	<10	<10	<10	<10	<10	<10	<10	26	<10	<10	<10	<10	
Upstream	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<18	<20	<20	<20	
	Uranium	ug/l	11	<7	<7	<7	<7	8	6	15	<7	9	7	10	
	Ra-226	pCi/l			0.13			.27			0.14			.021	
2202	$NO_3(N)$	mg/l	0.3	0.3	0.2	0.2	0.2	0.3	0.1	.1	0.3	.4	1.6	0.5	[illegible]
Illinois	Fluoride	mg/l	0.3	0.2	0.2	0.4	0.1	0.3	0.5	.2	0.7	.2	0.2	0.5	
River -	Gross α	pCi/l	82	<10	<10	16	<11	<10	<10	<10	43	108	64	637	
Downstream	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<18	<20	<20	53	
	Uranium	ug/l	28	35	21	14	11	10	8	16	46	<7	75	9	
	Ra-226	pCi/l			0.05			.05				0.06		.057	
2203	$NO_3(N)$	mg/l			0.4			0.5			0.2			0.2	1/90
Arkansas	Fluoride	mg/l			0.5			0.3			0.3			0.4	
River -	Gross α	pCi/l			<10			<10			<10			11	
Upstream	Gross β	pCi/l			<18			<18			<20			<20	
	Uranium	ug/l			<7			7			<7			23	
	Ra-226	pCi/l			0.12			.37			0.1			.035	
2204	$NO_3(N)$	mg/l			0.5			0.5			0.4			0.2	1/90
Arkansas	Fluoride	mg/l			0.3			0.3			0.2			0.5	
River -	Gross α	pCi/l			<10			<10			<10			15	
Downstream	Gross β	pCi/l			<18			<18			<20			<20	
	Uranium	ug/l			13			<7			[illegible]			14	
	Ra-226	pCi/l			0.12			.61			0.04			.123	
2205	$NO_3(N)$	mg/l						4						2.0	1/180
Farm Pond -	Fluoride	mg/l						0.6						0.3	
East	Gross α	pCi/l						<10						<10	
	Gross β	pCi/l						<18						<20	
	Uranium	ug/l						7						18	
	Ra-226	pCi/l						.06						.014	
Total Rainfall	for month	in.	0.42	0.85	2.83	1.57	3.77	8.09	0.99	0.46	6.73	1.93	1.89	1.74	

8112210081 811116
PDR ADOCK 04008027
C PDR

1980, p2-16

LOCATION	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Freq.
2207	NO_3 (N)	mg/l	1.5	1.0	1.28	1.3	1.8	1.8	2	1.3	2	2.3	2.2	2.2	1/30
Facility	Fluoride	mg/l	0.4	0.46	0.47	0.53	0.66	0.43	0.45	0.58	0.42	0.58	0.75	0.85	
Effluent	Gross α	pCi/l	1031	693	722	483	801	772	1315	1037	101[illegible]	1490	2060	2313	
(comb. stream)	Gross β	pCi/l	139	94	68	90	78	53	98	[illegible]	[illegible]	110	210	260	
	Uranium	ug/l	1.45	0.89	0.83	0.63	0.95	0.92	1,800	1300	1300	2120	2700	3480	
	Ra-226	pCi/l			0.09±50%			.093			.42		0.16–0.085	0.027	
	Th-230	pCi/l	0.068	0.112	0.088	0.023	.040	.15	.13	.045	.11	.015	0.046	.031	
	Th232	pCi/l	0.011	0.011	0.017	0.008	.003	.005	.013	.010	—	.009	0.007	.012	
2208	NO_3 (N)	mg/l						0.3						0.2	1/180
Tenkiller	Fluoride	mg/l						0.1						0.1	
Raw Water	Gross α	pCi/l						<10						13	
	Gross β	pCi/l						<18						<20	
	Uranium	ug/l						<7						18	
	Ra-226	pCi/l						0.06						.071	
			1-31-80	2-28-80	3-27-80	4-24-80			7-31-80						
2209	NO_3 (N)	mg/l	0.2	0.1	0.3	0.2	.2	0.2	.2	.2	.5	.2	0.2	3.9	1/180
Salt Fork	Fluoride	mg/l	0.3	1.1	0.2	0.3	.3	0.2	.2	.2	.2	.1	0.3	0.1	
River	Gross α	pCi/l	12	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	17	<7	<7	<7	<7	<7	<7	<7	<7	15/5	<7	<7/21	
	Ra-226	pCi/l			0.14			0.11	.13	0.05	0.02	0.06		.049	
	Th230									.019/.013	.044	0.009		[illegible]	
2210	NO_3 (N)	mg/l	0.1	0.1	1.3	0.1	0.1	0.2	.1	.1	[illegible]	.2	0.6	.2	1/180
Carlisle	Fluoride	mg/l	0.2	1.1	0.2	0.3	0.2	0.2	.3	.4	0.2	.2	0.2	.2	1/30
School Pond	Gross α	pCi/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	14	<7	<7	<7	<7	<7	<7	12	<7	10	<7	27	
	Ra-226	pCi/l			0.03			.009			0.01			.03	

180 P3-16

LOCATION	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
2301	NO_3(N)	mg/l			28			26			14			274	1/90
West of	Fluoride	mg/l			1.0			.8			.8			0.8	
Settling Basin#1	Gross α	pCi/l			15			<10			<10			35	
	Gross β	pCi/l			<18			<18			<20			<20	
	Uranium	ug/l			10			11			45			25	
	DTW	Ft.			3			3.0			3			3.33	
	Ra-226	pCi/l			0.33			.25			0.1			.481	
			1-31-80	2-28-80	3-27-	4-24	5-29	6-28-80	7-31-80						
2302	NO_3(N)	mg/l	38	38	36	40	41	38	38	43	40	56	67	62	1/30
West of	Fluoride	mg/l	3.1	1.1	0.8	0.6	0.5	.5	.5	.4	.5	.4	0.4	0.5	
Settling Basin#1	Gross α	pCi/l	105	151	14	34	23	19	<10	16	25		30	18	
	Gross β	pCi/l	<18	24	<18	<18	<18	<18	<18	<20	<20		<20	<20	
	Uranium	ug/l	94	25	27	27	33	29	24	38	29	45	13	27	
	DTW	Ft.	1.5	1.6	0.6	2.00	1.6	.5	2.7	3	2.6	1.25	1.0	1.25	
	Ra-226	pCi/l			0.46			.17			0.12			.116	
2303	NO_3(N)	mg/l	2.0	15	27	34	34	27	31	28	29	51	74	69	1/30
North of	Fluoride	mg/l	0.5	0.5	0.9	0.4	0.6	.6	.5	.5	.5	.4	0.6	0.6	
Raff. Pond #1	Gross α	pCi/l	17	24	66	31	19	16	16	<10	<10	13	26	37	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	22	<20	<20	<20	<20	<20	
	Uranium	ug/l	43.	27	94	49	39	18	24	75	15	12	14	42	
	DTW	Ft.	9.42	10.25	7.8	7.8	6.5	7.6	8.9	8.8	7.7	7.9	7.4	6.33	
	Ra-226	pCi/l			0.11			.24			0.14			.11	
2305	NO_3(N)	mg/l	46.	55	51	66	54	22	38	58	58	75	74	96	1/7
East of	Fluoride	mg/l	1.2	0.6	0.9	0.2	0.4	.3	.3	[illegible]	1	.4	0.4	0.3	1/30
Raff. Pond # 2	Gross α	pCi/l	395	13	99	51	<10	<10	22	14	26	25	<10	<10	
	Gross β	pCi/l	34	<18	20	22	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	467	140	105	92	21	9	20	42	41	28	23	16	
	DTW	Ft.	22.33	23.2	17.8	21.2	14.5	20.5	21.1	20.7	22.8	21	16.4	16.3	
	Ra-226	pCi/l			0.27			.04			0.10			.178	
2306	NO_3(N)	mg/l	1.4	1.2	0.7	1.5	1.4	1.4	1.0	.2	1.6	.2	0.2	0.5	1/30
South of	Fluoride	mg/l	0.3	0.2	0.8	0.2	0.3	.3	.2	.3	.4	.2	0.4	0.3	
Clarification	Gross α	pCi/l	25	32	<10	22	<10	<10	<10	<10	<10	<10	12	<10	
Pond	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<18	
	Uranium	ug/l	49.	8	16	20	21	9	<7	10	<7	42	10	25	
	DTW	Ft.	4.	4	4.	4.	5	5	13.8	13.7	13.7	12.6	4.8	5.5	
	Ra-226	pCi/l			0.10			.08			0.14			.087	

Pg 4 of 16

LOCATION	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
2307	NO_3(N)	mg/l						0.1						1.6	1/180
Fault Well	Fluoride	mg/l						0.5						0.4	
	Gross α	pCi/l						16						12	
	Gross β	pCi/l						<18						<20	
	Uranium	ug/l						33						20	
	DTW	Ft.						9.6						10.84	
	Ra-226	pCi/l												.077	
2310	NO_3(N)	mg/l			68			49			3.9			133	1/90
North of	Fluoride	mg/l			0.7			.3			0.1			0.5	
Raff. Pond #2	Gross α	pCi/l			65			57			57			44	
	Gross β	pCi/l			<18			<18			<20			<20	
	Uranium	ug/l			19			16			19			7	
	DTW	Ft.			24.1			24.5			24.[illegible]			25	
	Ra-226	pCi/l			0.03			.08			0.19			.117	
2311	NO_3(N)	mg/l			34			19			DRY			58	1/90
West of	Fluoride	mg/l			7.4			.6						0.5	
Raff. Pond #2	Gross α	pCi/l			<11			<10						<10	
	Gross β	pCi/l			<18			<18						<20	
	Uranium	ug/l			21			<7						25	
	DTW	Ft.			11.6			13.8						7.17	
	Ra-226	pCi/l			0.09			.17						.154	
			1-31-80	2-28-80	3-27	4-24	5-29	6-27-80	7-31-80						
2312	NO_3(N)	mg/l	150	180	200	330	320	300	320	280	190	240	290	410	1/7
West of	Fluoride	mg/l	0.2	0.2	0.8	0.4	0.9	.3	.4	0.3	.4	.1	0.3	0.5	1/30
Raff. Pond #2	Gross α	pCi/l	41	27	13	20	14	37	23	25	23/12?	38	34	31	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	25	<7	25	<7	18	26	9	28	14	<7	29	16	
	DTW	Ft.	13.67	12.67	11	11	10.2	11.1	12.4	12.1	11.8	12.1	12.6	11.17	
	Ra-226	pCi/l			0.35			.28			0.38			.28	
2313	NO_3(N)	mg/l			DRY			18			DRY			Dry	1/90
West of	Fluoride	mg/l						.3							
Raff. Pond #2	Gross α	pCi/l						<10							
	Gross β	pCi/l						<18							
	Uranium	ug/l						<7							
	DTW	Ft.						4.2							
	Ra-226	pCi/l						[illegible]							

1980 Well Water LOCATION	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
2314	NO_3(N)	mg/l	800	1150	1075	1800	1275	1775	* 150	1300	1400	2050	3250	1150	1/7
South of	Fluoride	mg/l	1.6	1.9	3.1	2.4	2.2	2.5	2.5	2.2	2.3	.2	1.5	1.8	1/30
Raff. Pond #2	Gross α	pCi/l	68	64	77	65	56	32	37	15	32	23	36	17	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20/35	<20	<20	<20	<20	
	Uranium	ug/l	76	26	74	51	48	34	31	34	13	114	19	18	
	DTW	Ft.	14.67	14.50	14.2	14	14.4	14.7	15.2	14.9	14.7	15.4	15.8	15.9	
	Ra-226	pCi/l			0.48			.60			0.52			0.524	
2315	NO_3(N)	mg/l	11.2	10	6	12	10	12	9.6	8.8	11	13	36	36.5	1/30
West of	Fluoride	mg/l	0.8	0.5	0.9	0.5	0.5	.5	.5	.6	0.5	.1	0.7	0.8	
Settling Basin #1	Gross α	pCi/l	43	24	<10	13	<10	<10	<10	11	16	10	11	36	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	104	19	10	36	9	8	<7	25	<7	7	12	60	
	DTW	Ft.	4	4.67	4.4	5	4.7	4.4	8.8	9.5	7	3.9	4.2	4.83	
	Ra-226	pCi/l			0.09			.07			0.12			.106	
2316	NO_3(N)	mg/l			2.0			4.2			11.8			7.8	1/90
West of	Fluoride	mg/l			0.4			.3			0.3			0.2	
Settling Basin #1	Gross α	pCi/l			<10			16			<10			<10	
	Gross β	pCi/l			<18			<18			<20			<20	
	Uranium	ug/l			13			30			28			39	
	DTW	Ft.			15.4			14.2			13.3			13.25	
	Ra-226	pCi/l			0.21			.06			0.05			.095	
2317	NO_3(N)	mg/l	64	72	68	76	64	56	104	76	41	78	9.3	168	1/30
West of	Fluoride	mg/l	0.3	0.3	0.5	0.4	0.3	.3	.3	.3	.5	.3	0.4	0.4	
Raff. Pond #2	Gross α	pCi/l	30	25	19	<10	<10	<10	<10	<10	<10	14	12	12	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	136	9	18	8	<5	10	7	33	<7	<7	<7	8	
	DTW	Ft.	5.42	4.92	2.9	4.9	5	3.8	12.7	12.9	14.9	4.1	4.25	4.75	
	Ra-226	pCi/l			0.22			.17			0.15			0.25	
2318	NO_3(N)	mg/l	50	55	46	54	48	37	40	44	27	64	70	96	1/30
West of	Fluoride	mg/l	0.3	0.5	1.1	0.5	.5	.4	.8	.7	.5	.3	0.4	0.6	
Raff. Pond #2	Gross α	pCi/l	59	40	42	17	14	17	16	18	<10	<10	14	18	
	Gross β	pCi/l	<18	<18	<15	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	82	51	35	20	11	24	21	40	8	27	<7	16	
	DTW	Ft.	15.09	14.09	4.3	10.9	4.42	4.0	13.4	15.1	12.8	10.9	6.8	3.92	
	Ra-226	pCi/l			0.12			.03			0.21			0.18	
*							Discarded						

1980 PG 4/16

LOCATION well water (cont'd)	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
2319	NO_3(N)	mg/l			600			451			DRY			Dry	1/90
South of	Fluoride	mg/l			2.2			2.1							
Raff. Pond #2	Gross α	pCi/l			46			54							
	Gross β	pCi/l			<18			<18							
	Uranium	ug/l			17			42							
	DTW	Ft.			22.4			23.8							
	Ra-226	pCi/l			0.87			.36							
2321	NO_3(N)	mg/l			0.2			4.8			12			15	1/90
SW Corner	Fluoride	mg/l			0.5			0.3			.2			0.4	
Raff. Pond #3	Gross α	pCi/l			22			24			24			25	
	Gross β	pCi/l			<18			<18			<20			<20	
	Uranium	ug/l			30			37			20			27	
	DTW	Ft.			18.6			30.5			19.5			18.7	
	Ra-226	pCi/l			0.01			.2			0.05			.04	
2322	NO_3(N)	mg/l			DRY						DRY			DRY	1/90
NW Corner	Fluoride	mg/l													
Raff. Pond #3	Gross α	pCi/l													
	Gross β	pCi/l													
	Uranium	ug/l													
	DTW	Ft.													
	Ra-226	pCi/l													
2323	NO_3(N)	mg/l									DRY			3	1/90
NE Corner	Fluoride	mg/l												0.3	
Raff. Pond #3	Gross α	pCi/l												16	
	Gross β	pCi/l												<20	
	Uranium	ug/l												23	
	DTW	Ft.			DRY									19.7	
	Ra-226	pCi/l												.03	
2324	NO_3(N)	mg/l			0.2			0.2			DRY			3	1/90
SE Corner	Fluoride	mg/l			1.5			1.0						0.9	
Raff. Pond #3	Gross α	pCi/l			14			17						17	
	Gross β	pCi/l			<18			<18						<20	
	Uranium	ug/l			30			10						14	
	DTW	Ft.			29.8			31.2						26.2	
	Ra-226	pCi/l			0.02			.42						.03	

LOCATION 1980	ANALYSIS	UNITS	JAN. 1-31-80	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
F-1	NO_3(N)	mg/l	0.3	0.4	1.9	2.0	1.5	0.6	.4	.4	0.7	1.3	4.8	5.1	1/30
South of	Fluoride	mg/l	0.6	1.0	1.1	0.8	0.3	0.2	.3	.4	0.9	.6	0.4	0.4	
Fluor. Pit #3	Gross α	pCi/l	<10	16	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	20/<20	<20	<20	<20	<20	
	Uranium	ug/l	10.0	<7	8	<7	28	<7	<7	13	10	<7	16	<7	
	DTW	Ft.	11.5	13.75	3.1	8	12.4	2.2	4.9	10.3	7.8	9.8	8.7	5.92	
	Ra-226	pCi/l			0.06			.23			0.03			0.047	
F-2	NO_3(N)	mg/l	0.2	0.8	15.3	Dry	5	6.4	DRY	DRY	1.2	2.0	1.56	7.1	1/30
South of	Fluoride	mg/l	0.7	1.5	2.0		1.3	1.4			1.2	1.5	1.6	1.1	
Fluor. Pit #3	Gross α	pCi/l	<10	<10	<10		13	13			<10	<10	<10	<10	
	Gross β	pCi/l	<18	<18	<18		<18	<18			<20	<20	<20	<20	
	Uranium	ug/l	<7	<7	20		248	53			<7	12	7	10	
	DTW	Ft.	12.3	14.0	12.5		4.1	12.9	Dry	Dry	4.9	8.4	8.4	6.5	
	Ra-226	pCi/l			0.18			.06			0.10			0.062	
T-1	NO_3(N)	mg/l	420	460	470	480	460	580	640	760	620	940	1160	1040	1/7
South of	Fluoride	mg/l	0.6	1.3	1.6	1.6	1.5	1.2	1.4	1.6	1.4	.4	2.1	1.6	1/30
Raff. Pond #2	Gross α	pCi/l	69	63	40	52	31	26	29	35	19	31	29	33	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	31/20	<20	<20	<20	<20	
	Uranium	ug/l	103	35	48	61	35	31	32	51	49	25	13	29	
	DTW	Ft.	16.7	17.5	16.7	16.3	15.9	13.6	16.7	15.2	15.7	15.8	15.6	15.9	
	Ra-226	pCi/l			0.22			.17			0.68			0.652	
T-2	NO_3(N)	mg/l	380	490	530	670	190	400	380	520	480	740	1050	132	1/7
South of	Fluoride	mg/l	1.3	1.0	1.8	1.0	0.6	.9	1	1	1	1.1	1.9	0.5	1/30
Raff. Pond #2	Gross α	pCi/l	45	46	70	67	18	25	33	26	34	26	45	29	
	Gross β	pCi/l	<18	<18	23	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	61	40	98	89	11	46	45	38	35	39	15	27	
	DTW	Ft.	18.6	18.75	18.6	18.8	17.3	19.7	18.3	19	17.2	18.2	18.5	17.5	
	Ra-226	pCi/l			0.2			.44			0.34			.046	
T-4	NO_3(N)	mg/l	1325	1450	1300	1000	425	1100	900	1420	1125	1525	1000	384	1/7
South of	Fluoride	mg/l	0.9	2.5	3.3	1.4	1.0	1.7	2	2.2	2.1	2.1	1.9	0.9	1/30
Raff. Pond #2	Gross α	pCi/l	20	34	27	<10	<10	<10	<10	14	<10	<10	<10	<10	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<15	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	33	13	25	33	10	18	17	37	17	<7	<7	12	
	DTW	Ft.	10.93	10.41	10.3	10.5	10.5	10.8	10.5	9.6	9.5	9.8	10.2	10.25	
	Ra-226	pCi/l			0.53			.78			0.79			0.354	
F-3	NO_3(N)	mg/l							.2	.3	0.2	.2	.24	.5	
	F	mg/l							.5	.4	0.1	.4	.3	.5	
	Cl	mg/l							62	57	41	40	30	74	
	DTW	Ft.							16.8	16.2	16.6	16.6	16.4	16.3	

1980 - Well Main (Cont'd)

LOCATION p 8 of 16	ANALYSIS	UNITS	JAN. 1-31-80	FEB. 2-28-80	MAR. 3-27-80	APR. 4-24-80	MAY 5-29	JUNE 6-26	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
T-5	NO_3(N)	mg/l	390	430	420	500	410	370	450	480	510	320	44	120	1/7
South of	Fluoride	mg/l	0.6	1.1	1.5	1.0	1.3	1.1	1.3	1.2	1.3	1.6	1.2	1.3	1/30
Raff. Pond #2	Gross α	pCi/l	46	71	73	73	32	11	43	41	36	15	<10	18	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20\35	<20	<20	<20	<20	
	Uranium	ug/l	70	57	<7	75	40	40	50	54	47	41	12	16	
	DTW	Ft.	20.5	20.84	19.3	20	19.5	20.5	20.	19.7	19.2	18.8	18.9	18.8	
	Ra-226	pCi/l			0.40			1.03			0.32			.074	
ED-1	NO_3(N)	mg/l	280	280	310	370	310	290	210	320	80	144	192	48	1/7
South of	Fluoride	mg/l	0.9	1.0	1.2	0.7	0.8	.9	1	.9	0.7	.7	.7	0.8	1/30
Raff. Pond #2	Gross α	pCi/l	<10	<10	<10	<10	13	<10	<10	<10	52	17	26	39	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	<7	9	7	<7	<7	<7	9	<7	95	23	24	44	
	DTW	Ft.	2.17	30.17	30.3	30.2	30.5	32.2	30.2	31.2	29.2	27.9	24.6	24.3	
	Ra-226	pCi/l			0.09			.20			0.25			.21	
			1-31-80												
ED-5	NO_3(N)	mg/l	33	39	38	35	15	11	13	12	26	43	45	45	1/30
West of	Fluoride	mg/l	0.8	0.5	0.5	1.1	0.3	.4	.6	.5	0.5	.4	.5	0.3	
Raff. Pond #2	Gross α	pCi/l	70	29	<10	59	16	13	<10	<10	22	<10	<10	26	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<17	<18	<20	20	<20	<20	<20	
	Uranium	ug/l	83	51	9	18	<7	19	10	18	42	17	9	33	
	DTW	Ft.	7	4.67	1.6	6	3.7	4.1	14.2	17.2	16	15.1	2.4	2.35	
	Ra-226	pCi/l			0.5			.46			0.10			.11	
ED-6	NO_3(N)	mg/l						DRY			DRY			DRY	
West of	Fluoride	mg/l													1/90
Raff. Pond #2	Gross α	pCi/l													
	Gross β	pCi/l													
	Uranium	ug/l													
	DTW	Ft.			DRY			DRY			DRY			DRY	
	Ra-226	pCi/l													
ED-8	NO_3(N)	mg/l			3.4			3.8			4.1			6.2	
North of	Fluoride	mg/l			1.0			1.			1.1			1.2	1/90
Raff. Pond #2	Gross α	pCi/l			25			11			15			33	
	Gross β	pCi/l			<18			<18			<20			<20	
	Uranium	ug/l			15			15			20			31	
	DTW	Ft.			23.6			26.4			24.2			23.03	
	Ra-226	pCi/l			0.14			.53			0.07			0.14	

Well-water 1980 Pg 16 LOCATION	ANALYSIS	UNITS	JAN. 1-31-80	FEB. 2-28-80	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
FD-10	NO_3(N)	mg/l	1.6	1.9	1.9	4.6	2	1.8	1.8	2	1.8	2.5	2.5	3.2	1/30
North of	Fluoride	mg/l	0.6	1.2	1.3	1.1	1.3	1.1	1.7	1.4	1.2	1.2	1.4	1.1	
Raff. Pond # 1	Gross α	pCi/l	45	<10	78	47	41	40	41	58	42	27	43	84	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<21/54	<20	<20	<20	<20	
	Uranium	ug/l	45	62	48	38	28	31	39	65	30	43	17	39	
	DTW	Ft.	23.5	23.33	23.3	23	23.3	23.3	23.4	23.3	22.9	22.6	22.3	21.8	
	Ra-226	pCi/l			0.25			.08			0.06			.081	
FD-11	NO_3(N)	mg/l	2.4	0.4	1.3	1.7	2	1.7	1.8	3.7	2.2	5.2	6.4	6.7	1/30
West of	Fluoride	mg/l	1.3	0.7	0.6	0.6	0.5	.5	.5	.5	0.5	.5	0.4	0.5	
Raff. Pond #2	Gross α	pCi/l	43	30	39	34	25	19	29	23	26	28	22	39	
	Gross β	pCi/l	<18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	47	37	44	59	37	29	38	47	43	16	30	49	
	DTW	Ft.	18.7	18.0	18.2	19	18.9	19.8	19.	18.3	17.6	17.1	17.6	17.2	
	Ra-226	pCi/l			0.14			.16			0.28			.134	
M-3	NO_3(N)	mg/l	28	25	21	37	22	22	20	7	43	53	103	66	1/7
South of	Fluoride	mg/l	1.2	1.5	IS	0.6	0.4	0.5	.4	.4	0.7	.7	0.3	0.3	1/30
Raff. Pond #2	Gross α	pCi/l	85	70	24	37	<10	<10	12	13	<10	20	29	11	
	Gross β	pCi/l	18	<18	<18	<18	<18	<18	<18	<20	<20	<20	<20	<20	
	Uranium	ug/l	88	65	24	25	<7	<7	10	29	42	21	20	11	
	DTW	Ft.	21.08	22.08	18.6	21.1	19.9	21.7	20.9	20.8	18.5	20.2	26.5	19.9	
	Ra-226	pCi/l			0.04			.01			0.10			.023	
					3-22-80										
M-1	NO_3(N)	mg/l			77			15			DRY			Dry	1/90
South of	Uranium	ug/l			16			17							
Raff. Pond #2	DTW	Ft.			21.5										
M-2	NO_3(N)	mg/l			30			30			DRY			59	1/90
South of	Uranium	ug/l			20			24						91	
Raff. Pond #2	DTW	Ft.			19.8									18.7	
F-5	NO_3(N)	mg/l		0.5			0.6	1.0	.2	.3				0.5	1/30
	Fluoride	mg/l		0.6			0.5	0.6	.5	.4				0.5	
	Gross α	pCi/l		287			175	114	46	38	32	20	24	60	
	Gross β	pCi/l		20			<18	<18	<18	36/<20	<20	<20	<20	<20	
	Uranium	ug/l		225			76	125	62	57				74	
	DTW	Ft.	Dry	13.42	Dry	Dry	17?	16.3?	16.2?	16.2	[illegible]			16.3	
	Ra-226	pCi/l						.12			0.37?			.014	

1990 p10-16

LOCATION	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
M-4	NO_3 (N)	mg/l			49			30			22			64	1/90
South of	Uranium	ug/l			13			14			29			27	
Raff. Pond #2	DTW	Ft.			12.8						11.4			15.08	
M-5	NO_3 (N)	mg/l			0.4			0.3			Dry			3	1/90
South of	Uranium	ug/l			13			11						26	
Raff. Pond #2	DTW	Ft.			16.2									16.61	
M-6	NO_3 (N)	mg/l			0.4			.4			Dry			3	1/90
South of	Uranium	ug/l			<7			15						51	
Raff. Pond #2	DTW	Ft.			22.1									19.84	
M-7	NO_3 (N)	mg/l			Dry			Dry			Dry			Dry	1/90
South of	Uranium	ug/l													
Raff. Pond #2	DTW	Ft.			↓										
M-8	NO_3 (N)	mg/l			0.6			0.9			0.9			2	1/90
South of	Uranium	ug/l			8			14			8			46	
Raff. Pond #2	DTW	Ft.			10.5						9.7			11.34	
M-9	NO_3 (N)	mg/l			22			14			Dry			100	1/90
South of	Uranium	ug/l			23			24						<7	
Raff. Pond #2	DTW	Ft.			13									11.33	
M-10	NO_3 (N)	mg/l			1.8			1.8			3.5			6.5	1/90
South of	Uranium	ug/l			73			12			25			26	
Raff. Pond #2	DTW	Ft.			9.2						8.9			9.76	

1980 7-11-16 LOCATION	ANALYSIS	UNITS	1-3-80	1-10-80	(1-22) Resample 1-17-80	1-24-80	* 1-31-80		Feb 7, 1980	2-14-80	Weekly - Well Samples - 2-21-80	Thru 2-28 *	7-11-16 March 3-6	3-11	3-13
T-1	NO_3 (N)	mg/l	470	510	480	460	420		440	500	430	460	380		470
South of	Uranium	μg/l	46	27	33	35	103		150	62	73	35	275		140
Raff. Pond #2	DTW	ft.	21.4	18.00	17.08	16.6	16.7		17.8	16.9	16.9	17.5	21.3		17.2
T-2	NO_3 (N)	mg/l	360	390	400	340	380		550	410	450	490	240	440	440
South of	Uranium	μg/l	63	46	75	30	61		91	73	103	40	* 368	183	233
Raff. Pond #2	DTW	ft.	18.67	18.78	18.42	18.7	18.6		18.75	19.2	20.3	18.75	18.83	18.8	18.9
T-4	NO_3 (N)	mg/l	1300	1425	(1400) 4500	1300	1325		1425	1350	1400	1450	1075		1250
South of	Uranium	μg/l	28	21	(10) 88	27	33		33	26	39	13	111		35
Raff. Pond #2	DTW	ft.	10.16	10.25	(10.16) 10.15	10.3	10.9		10.3	10.9	10.2	10.4	10.8		10.7
T-5	NO_3 (N)	mg/l	470	480	200	420	390		480	390	430	430	350		410
South of	Uranium	μg/l	51	43	36	49	70		111	65	39	57	204		76
Raff. Pond #2	DTW	ft.	20.3	20.3	20.4	20.7	20.5		20.7	20.3	20.3	20.84	20.5		20.25
M-3	NO_3 (N)	mg/l	32	35	33	30	28		98	80	88	25	116	108	132
South of	Uranium	μg/l	83	29	37	44	88		223	73	141	65	* 873	257	33
Raff. Pond #2	DTW	ft.	22	21.16	21.4	20.5	21.1		22.1	22.2	16.8	22.08	22.2	21.8	21
ED-1	NO_3 (N)	mg/l	290	310	300	280	280		280	270	290	280	240		290
South of	Uranium	μg/l	19	13	78	11	<7		11	16	13	9	24		37
Raff. Pond #2	DTW	ft.	30.4	30.34	29.8	30.2	2.2		31	29.5	29.8	30.17	30.3		30.8
2305	NO_3 (N)	mg/l	48	51	52	48	46		70	42	55	53	55		58
East of	Uranium	μg/l	28	31	71	30	467		390	43	167	140	385		184
Raff. Pond #2	DTW	ft.	22.9	22.9	22.8	22.7	22.3		23.3	23.1	23.9	23.16	24		23.7
2312	NO_3 (N)	mg/l	160	170	200	170	150		170	160	160	180	60		184
West of	Uranium	μg/l	36	19	67	16	25		82	21	15	<7	20		11
Raff. Pond #2	DTW	ft.	12.5	13.5	12.4	13.9	13.7		13	12.5	12.6	12.67	13.7		13.2
2314	NO_3 (N)	mg/l	1000	1375	800	825	800		850	950	925	1150	1025		950
South of	Uranium	μg/l	40	43	74	64	76		33	60	60	26	158		123
Raff. Pond #2	DTW	ft.	14.5	14.5	15.3	8.3	14.7		15.2	15.	15	14.50	14.8		14.6
*Wells pumped to near dryness following sampling.															
2209	NO_3 (N)	mg/l	0.2	0.04	0.1	0.2	0.2		0.3	0.2	0.2	0.1	0.04		
Salt Fork River	Uranium	μg/l	<7	<7	9	<7	17		20	<7	<7	<7	8		
	DTW	ft.													
2318 (Mix)	NO_3 (N)	[illegible]	53	56	57	56	40		53	47	49	55	49		13

7-80 - 9-12-?

LOCATION	ANALYSIS	UNITS	3-28-80	4-3-80	4-10-80	4-17-80	4-24-80	5-1-80	5-8-80	5-15-80	5-22-80	6-5-80	6-12	6-19	5-29
T-1	NO_3 (N)	mg/l	490	510	480	540	480	560	560	520	420	540	600	580	460
South of	Uranium	µg/l	63	38	88	41	61	67	51	54	190	56	49	27	35
Raff. Pond #2	DTW	ft.	16.9	17.2	17.2	17	16.3	17.1	17	17.5	16.5	15.1	15.7	17.2	15.9
T-2	NO_3 (N)	mg/l	490	510	500	440	670	60	390	410	20	120	220	180	190
South of	Uranium	µg/l	113	78	122	67	88	95	62	54	66	-47	50	27	11
Raff. Pond #2	DTW	ft.	18.5	19.2	19.6	18.9	18.8	19	18.7	10.5	17.5	18.3	18.2	18.3	17.3
T-4	NO_3 (N)	mg/l	1450	750	675	750	1000	4125	400	500	200	640	840	460	425
South of	Uranium	µg/l	32	32	17	30	33	52	11	23	36	54	22	9	1.0
Raff. Pond #2	DTW	ft.	10.91	10.6	11.3	10.6	10.5	10.8	10.8	10.9	10.5	10.1	16.3	10.3	10.6
T-5	NO_3 (N)	mg/l	450	440	440	430	500	470	430	480	360	400	Dry	420	410
South of	Uranium	µg/l	94	48	54	60	75	74	46	69	66	72		33	40
Raff. Pond #2	DTW	ft.	20.5	20.9	20.5	19.2	20	20	20.4	20.2	19.7	19.7		19.9	19.5
M-3	NO_3 (N)	mg/l	32	36	27	35	37	49	48	50	19	22	52	12	22
South of	Uranium	µg/l	14	32	16	14	25	41	37	27	48	21	13	13	<7
Raff. Pond #2	DTW	ft.	21	20.7	21.3	21.2	21.1	21.2	21.4	21.1	16.4	20.1	20.3	20.6	19.
TD-1	NO_3 (N)	mg/l	300	340	300	330	370	320	130	290	240	[illegible]	510	280	510
South of	Uranium	µg/l	9	10	156	25	<7	<7	19	13	<7	10	7	14	<7
Raff. Pond #2	DTW	ft.	30.34	31.1	31.1	30.2	30.2	30.3	30.2	30.2	29.7	27.8	38.3	31.7	30.5
2305	NO_3 (N)	mg/l	50	62	55	59	66	63	58	59	37	49	11	13	54
East of	Uranium	µg/l	23	74	112	71	92	61	46	44	52	37	20	10	21
Raff. Pond #2	DTW	ft.	21.3	19.8	20	20.5	21.2	18	14.8	16.8	9.6	18.7	22.2	20.9	14.5
2312	NO_3 (N)	mg/l	208	236	230	280	330	300	310	360	310	430	370	230	320
West of	Uranium	µg/l	<7	8	<7	32	<7	10	15	<7	12	<7	<7	18	18
Raff. Pond #2	DTW	ft.	12	11.8	12.1	11.8	11	11.2	11.5	11.3	10	9.8	11	11.9	10.2
2314	NO_3 (N)	mg/l	1000	1175	950	1075	1500	1100	1100	975	700	700	1375	1450	1275
South of	Uranium	µg/l	94	83	126	92	51	109	79	68	72	63	49	49	49
Raff. Pond #2	DTW	ft.	15.6	15.2	14.4	14.3	14	14.7	14.6	14.5	14.2	9.3	14.4	14.6	14.4
*Wells pumped to near dryness following sampling.															
2209	NO_3(N)		0.4	0.5	<0.2	<0.2	0.2	0.12	1.3	0.2	0.3	4.2	0.2	0.4	[illegible]
	Uranium		<7	23	<7	<7	<7	<7	<7	—	14	22	12	22	<7
2318	NO_3(N)		52	54	48	51	54	50	32	50	39	41	54	37	48
	Uranium		23	23	16	<7	20	35	--	13	260	23	9	26	11
	[illegible]		9.05	5.35	4.2	9.7	10.9	14.7	9.3	9.4	4.1	5.9	9.3	7.6	4.4

New pm ro LOCATION	ANALYSIS	UNITS	June 27 1980	July 3 1980	July 10 1980	[illegible] 1980	[illegible] 1980	[illegible] 1980	[illegible] 1980	[illegible] 1980	[illegible] 1980	[illegible] 31 1980	[illegible]	9-11-80	9-18-80
T-1	NO_3 (N)	mg/l	580	660	460	840	660	640	660	640	680	760	800	760	560
South of	Uranium	µg/l	31	47	61	45	55	32	75	31	102	51	37	45	55
Raff. Pond #2	DTW	ft.	13.6	16.75	16.33	16	15.83	16.7	16.7	15.5	16	15.2	15.8	15.9	15.4
T-2	NO_3 (N)	mg/l	400	200	180	230	370	380	400	430	460	520	530	500	490
South of	Uranium	µg/l	46	55	62	49	54	45	75	41	65	38	50	51	65
Raff. Pond #2	DTW	ft.	19.7	18.08	18.3	18.1	18.42	18.3	18.6	17.8	19	18	18.3	18.2	18.2
T-4	NO_3 (N)	mg/l	1100	725	380	660	880	900	820	780	860	1325	975	950	875
South of	Uranium	µg/l	18	31	34	31	28	17	45	50	30	37	21	12	23
Raff. Pond #2	DTW	ft.	10.8	10.5	10.5	10.5	9.8	10.5	10.4	9.8	10	9.6	9.5	9.9	9.7
T-5	NO_3 (N)	mg/l	370	460	260	500	400	450	480	420	480	480	520	480	480
South of	Uranium	µg/l	40	33	60	44	64	50	58	13	65	54	66	46	45
Raff. Pond #2	DTW	ft.	20.5	20.3	19.7	20	20.2	20.	20.8	19.4	20	19.7	20.2	20.2	19.8
M-3	NO_3 (N)	mg/l	22	17	18	18	21	20	67	105	120	7	120	110	110
South of	Uranium	µg/l	<7	18	21	13	7	10	37	50	84	29	34	53	[illegible]
Raff. Pond #2	DTW	ft.	21.7	20.9	20.8	21.2	20.6	20.9	20.8	20	21.5	20.8	19.9	20.7	[illegible]
EM-1	NO_3 (N)	mg/l	290	100	100	110	140	210	300	150	290	320	50	60	70
South of	Uranium	µg/l	<7	305	237	172	127	9	10	14	32	<7	83	113	102
Raff. Pond #2	DTW	ft.	32.2	31.8	31.9	314	31.4	30.2	23.7	31.2	32.5	31.2	30.4	30.01	29.8
2305	NO_3 (N)	mg/l	22	25	22	30	44	38	53	53	59	58	62	59	58
East of	Uranium	µg/l	9	24	25	23	23	20	46	21	27	42	26	28	26
Raff. Pond #2	DTW	ft.	20.5	22.08	21	21	20.7	21.1	22.1	20.8	22.5	20.7	22.8	21	21.2
2312	NO_3 (N)	mg/l	300	360	220	270	530	320	290	270	270	280	230	210	190
West of	Uranium	µg/l	26	26	27	7	14	8	46	12	31	28	30	26	32
Raff. Pond #2	DTW	ft.	11.1	12.7	12.1	12.2	12	12.4	12.8	12	13.3	12.1	13.8	12.4	12
2314	NO_3 (N)	mg/l	1775	1150	775	700	1550	[illegible]	1500	1050	1375	1300	450	1250	1025
South of	Uranium	µg/l	54	41	63	31	63	31	53	42	56	34	35	59	48
Raff. Pond #2	DTW	ft.	14.7	14.8	14.8	14.9	14.5	15.2	15.01	15.1	15.5	14.9	15.2	14.8	15.25
*Wells pumped to near dryness following sampling.															
2209	NO_3(N)	mg/l	0.2	<.2	Dry	Dry	0.1	0.2	Dry	Dry	Dry	0.2	0.4	0.2	[illegible]
Satt Folk ug/l	Uranium	µg/l	<7	10			<7	<7				<7	7	8	
	DTW	ft													
2318 (mw)	NO_3(N)	mg/l	37	38	28	39	41	40	44	38	41	44	34	33	34
West of Raff Pond #2	Uranium	µg/l	24	74	26	20	21	21	30	32	37	40	31	19	29
	DTW	ft.	4	8.9	10.75	11.3	11.8	13.4	14	14	15.5	15.1	13.8	14.1	14.5

Location p14-16	[illegible]	[illegible]	[illegible]		[illegible]		1980	1980	[illegible]						[illegible]
T-1	NO_3 (N)	mg/l	620		760	745	780	940	1040	1120	1100	1160	1220	820	1180
South of	Uranium	µg/l	49		39	47	45	35	51	34	66	13	70	59	39
Raff. Pond #2	DTW	ft.	15.7		15.5	15.7	15.8	15.0	15.6	15.8	16	15.6	16.25	15.46	17.7
Y-2	NO_3 (N)	mg/l	480		540	580	570	740	630	550	700	1050	670	120	360
South of	Uranium	µg/l	35		30	69	49	39	48	46	145	15	72	62	54
Raff. Pond #2	DTW	ft.	17.2		18.5	17.8	17.7	18.2	18.6	18.2	19.2	18.5	19.67	16.67	19
Y-4	NO_3 (N)	mg/l	1125		950	1025	925	1525	675	1150	850	1000	275	100	810
South of	Uranium	µg/l	17		30	37	34	<7	10	7	37	<7	13	30	25
Raff. Pond #2	DTW	ft.	9.5		10.5	9.3	9.6	9.8	9.6	10.2	10.25	10.2	10.5	10.25	11
Y-5	NO_3 (N)	mg/l	510		460	480	460	320	260	420	76	44	50	340	100
South of	Uranium	µg/l	47		33	42	42	41	50	40	26	12	56	27	25
Raff. Pond #2	DTW	ft.	19.2		19.5	19.7	19.5	18.8	19.2	19.3	16.4	18.9	20.75	16.17	20.1
Y-3	NO_3 (N)	mg/l	43		40	60	30	53	49	63	68	103	69	43	122
South of	Uranium	µg/l	42		71	76	77	21	63	33	110	20	120	18	68
Raff. Pond #2	DTW	ft.	18.5		20	19.8	20.2	20.2	19.6	20.2	17.3	26.5	21.5	19.66	[illegible]
ED-1	NO_3 (N)	mg/l	80		69	94	112	144	96	148	140	142	240	204	540
South of	Uranium	µg/l	95		56	58	64	23	47	43	78	24	58	70	71
Raff. Pond #2	DTW	ft.	29.2		29.8	27.2	28.6	27.9	26.9	27.3	25.1	24.6	25.67	24.34	25.3
2305	NO_3 (N)	mg/l	58		55	56	55	75	65	64	72	74	71	83	83
East of	Uranium	µg/l	41		41	51	62	28	72	40	60	23	29	18	27
Raff. Pond #2	DTW	ft.	20.5		20.9	20.8	20.7	21	20.7	20.8	13.6	16.4	19.5	13.66	18.4
2312	NO_3 (N)	mg/l	140		190	170	160	240	170	260	280	290	290	400	400
West of	Uranium	µg/l	119		28	53	37	<7	42	29	36	29	38	41	<7
Raff. Pond #2	DTW	ft.	11.8		15.8	12	11.9	12.1	11.5	15.9	13.8	12.8	12.67	11.42	11.42
2314	NO_3 (N)	mg/l	1400		1175	950	925	2050	85	1250	2475	3250	2125	—	2330
South of	Uranium	µg/l	18		45	62	31	114	30	23	70	19	52	40	68
Raff. Pond #2	DTW	ft.	14.7		15.2	15.2	15.1	15.4	14.5	15.3	15	15.8	16.33	15.42	14.5
*Wells pumped to	near dryness	following sampling.													
2209	NO_3(N)	mg/l	0.5		0.1	Dry	.1	.2	DRY	DRY	0.6	0.2	0.5	5	[illegible]
	U	µg/l	<7		<7		10	15			15	<7	13	<7	10
	Fluoride							.1				0.3			
2318 NW	NO_3(N)	mg/l	27		41	50	52	64	78	61	76	70	76	81	100
	Uranium	µg/l	8		18	13	13	<7	13	8	453	<7	28	30	16
	DTW	Feet	19.8		9.1	11	11.4	10.9	11.5	12.8	4.4	6.8	9.7	2.92	5.84

LOCATION	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
2403	Fluoride	ug/g				284						130			1/180
South 1000 ft.	Uranium	ug/g				2.6						1.6			
2404	Fluoride	ug/g				110						110			1/180
West 1000 ft.	Uranium	ug/g				4.8						1.5			
2405	Fluoride	ug/g				213						85			1/180
North 1000 ft.	Uranium	ug/g				5.7						2.5			
2406	Fluoride	ug/g				156						140			1/180
East 1000 ft.	Uranium	ug/g				1.7						3.7			
2407	Fluoride	ug/g				111						180			1/180
South 6000 ft.	Uranium	ug/g				1.7						1.9			
2403	Fluoride	ug/g				280						150			1/180
West ς000 ft.	Uranium	ug/g				1.2						1.4			
2409	Fluoride	ug/g				207						410			1/180
North 6000 ft.	Uranium	ug/g				1.9						1.7			
2410	Fluoride	ug/g				249						120			1/180
East 6000 ft.	Uranium	ug/g				0.95						1.6			

P 6-16

LOCATION	ANALYSIS	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	Sample Freq.
2503	Fluoride	ug/g				44						31			1/180
South 1000 ft.	Uranium	ug/g				2						3.4			
2504	Fluoride	ug/g				10						122			1/180
West 1000 ft.	Uranium	ug/g				3.6						15.4			
2505	Fluoride	ug/g				9						34			1/180
North 1000 ft.	Uranium	ug/g				8.8						4.0			
2506	Fluoride	ug/g				29						48			1/180
East 1000 ft.	Uranium	ug/g				4.9						6.5			
2507	Fluoride	ug/g				17						29			1/180
South 6000 ft.	Uranium	ug/g				2.5						3.4			
2508	Fluoride	ug/g				7						26			1/180
West 6000 ft.	Uranium	ug/g				3.1						2.5			
2509	Fluoride	ug/g				10						28			1/180
North 6000 ft.	Uranium	ug/g				1.7						4.4			
2510	Fluoride	ug/g				12						33			1/180
East 6000 ft.	Uranium	ug/g				1.7						13.3			

FORM AEC-783 (8/74)

U.S. ATOMIC ENERGY COMMISSION

MATERI[illegible]S DATA INPUT S/SNM

4 - SOURCE AND SNM REFERENCE COPY

A. TYPE OF ACTION AND IDENTIFICATION CODES

1 [ ] NEW LICENSE [ ] AMENDMENT TO RENEW LICENSE [ ] AMENDMENT TO TERMINATE [ ] VOID

[ ] NEW LICENSE AND NEW LICENSEE [xx] OTHER AMENDMENT [ ] CLERICAL CHANGE NO AMENDMENT 4

DOCKET NUMBER	MAIL CONTROL NUMBER	CHANGE NAME/ ADDRESS
040-08027	19770	[ ]

B. INDICATIVE INFORMATION:

INDIVIDUAL LICENSEES

NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)

ORGANIZATION LICENSEES

3 ORGANIZATION NAME (ALPHABETIC SEQUENCE): Kerr McGee Nuclear Corporation

DEPARTMENT OR BUREAU:

	BUILDING, STREET	CITY	STATE	ZIP CODE
5 ADDRESS	Kerr McGee Center	Oklahoma City	OK	73102

	TYPE OF APPLICANT	DATE REQUEST RECEIVED	INSTITUTION CODE	PENDING PROG. CODE	ACTUAL PROG. CODE
6	[ ] U.S. GOVERNMENT AGENCY [ ] INDIVIDUAL LICENSEE [ ] ORGANIZATIONAL LICENSEE	10/07/81	12636		

SECONDARY PROGRAM CODES AS REQUIRED:

#1	#2	#3	#4	#5

	LICENSE NUMBER	DATE LICENSE ISSUED OR ACTION COMPLETED	EXPIRATION DATE
7	SUB-1010		

APPLICANT'S COMMUNICATION DATED	CLASSIFICATION	ASSIGNED TO	RESULTING AMD. NO.
undated	un		

ENCLOSURES:

UNCLASSIFIED DESCRIPTION:

Radiological Contingency Plan for Sequoyah Conversion Facility.

DISTRIBUTION:

Reg File cy
FCUF (2)
I&E Region
PDR

see report folder

OTHER REFERRALS

NAME	DATE	NAME	DATE
10/14/81 DLC			

40-8027
PDR
Return to
D. CRAMER
396-55

RADIOLOGICAL CONTINGENCY PLAN

FOR

SEQUOYAH CONVERSION FACILITY

KERR-MCGEE NUCLEAR CORPORATION

GORE, OKLAHOMA

RECEIVED
OCT 07 1981
U. S. NUCLEAR REGULATORY COMMISSION
NMSS
Mail Section

DOCKETED
USNRC
OCT 04 1981
NMSS
MAIL SECTION
DOCKET CLERK

DOCKET NO. 40-8027

RECEIVED
OCT 14 1981
U.S. NUCLEAR REGULATORY COMMISSION

SOURCE MATERIAL LICENSE NO. SUB-1010

FEE
19770

8110280397 811007
PDR ADOCK 04008027
C PDR

FROM:	DATE OF DOCUMENT	DATE RECEIVED	NO.:
Kerr McGee Corporation	9/30/81	10 [illegible]/81	19782

LTR: X   MEMO: REPORT: OTHER:

ORIG.: 1   CC: OTHER:

TO: Director

ACTION NECESSARY ☐   CONCURRENCE ☐   DATE ANSWERED:

NO ACTION NECESSARY ☐   COMMENT ☐   BY:

CLASSIF.: un   POST OFFICE   REG. NO.:

FILE CODE: 40-8027

DESCRIPTION: (Must Be Unclassified)

XM ltr regarding Radiological Contingency Plan.

ENCLOSURES:

REMARKS:

REFERRED TO	DATE	RECEIVED BY	DATE
Reg file cy	10/15		
FCUF (4)			
I&E Region			
PDR			
[redacted]			
		19782 DLC	

RETURN TO CENTRAL MAIL STATION   U.S. NUCLEAR REGULATORY COMMISSION   MAIL CONTROL FORM   FORM NRC-326 (6-76)

40-8027

PDR

Return to D. CRAMER

396-55

KERR-McGEE CORPORATION

KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

ENVIRONMENT AND HEALTH MANAGEMENT DIVISION

September 30, 1981

1981 OCT 13 AM 1

DOCKETED USNRC OCT 15 1981 MAIL SECTION DOCKET CLERK

Director
Division of Fuel Cycle and
Material Safety, NMSS
Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 40-8027
License No Sub-1010

Dear Sir:

We are sending under separate cover, six (6) copies of a Radiological Contingency plan for the Sequoyah conversion facility of Kerr-McGee Nuclear Corporation. This plan was prepared in accordance with the USNRC Order to Modify license dated February 11, 1981. Also in accordance with the February 11 order, please accept this letter as our application for license amendment to incorporate the plan as approved as a condition of the license.

We request that an amendment fee be exempted according to 10 CFR 170.31 footnote 1.(d) which states: Amendments which result from written NRC requests may be exempted from these fees at the discretion of the commission when the amendment is issued for the convenience of the NRC.

Sincerely,

W J Shelley

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

WJS:kb

encls.

FEE EXEMPT

response to NRC order

RECEIVED OCT 22 1981 U.S. NUCLEAR REGULATORY COMMISSION

8110260097 810930
PDR ADOCK 04008027
C PDR

10758

SEP 2 9 1981

Distribution:
Doc. t File 40-8027
~~NMSS r/f~~ PDR
FCUP r/f
WANixon
WTCrow

MEMORANDUM FOR: R. G. Page, Chief
Uranium Fuel Licensing Branch

THRU: W. T. Crow, Section Leader
Uranium Process Licensing Section
Uranium Fuel Licensing Branch

FROM: W. A. Nixon
Uranium Process Licensing Section
Uranium Fuel Licensing Branch

SUBJECT: ACID SPILL AT THE KERR-MCGEE SEQUOYAH UF_6 PRODUCTION PLANT

Mr. John Stoddard of Kerr-McGee informed me on Monday, September 28, 1981 that there had been a spill of 56% Nitric Acid at the Sequoyah facility on September 25, 1981. About 1000 gallons of acid was spilled, but all was retained onsite. There were no injuries. Kerr-McGee is neutralizing the acid and cleaning up the area affected. State officials (Mr. Don Hensch, Director, Oklahoma State Department of Health, Industrial Waste Division), and the EPA have been informed. At my suggestion, Kerr-McGee will inform Region IV, if this has not already been done.

Original Signed By:
W. A. Nixon

W. A. Nixon
Uranium Process Licensing Section
Uranium Fuel Licensing Branch

~~8110190444~~ 810929
PDR ADOCK 04008027
C PDR

OFFICE	FCUP	FCUP
SURNAME	WANixon:rad	WTCrow
DATE	9/29/81	9/29/81

NRC FORM 318 (10-80) NRCM 0240

OFFICIAL RECORD COPY

USGPO 1980—329-824

Standard Form 1047
September 1973
4 Treasury FRM 2000
1047-106

Pls. ~~Return to~~
~~Allen Cabell L-233~~

PUBLIC VOUCHER FOR REFUNDS

Voucher No. ....

Schedule No. ....

U. S. Nuclear Regulatory Commission
(Department or Establishment, Bureau or Office)

Location: Washington, D.C 20555

Appropriation or Fund: ....

PAID BY

To Address:
Kerr-McGee Nuclear Corporation
Kerr-McGee Center
Oklahoma City, Oklahoma 73102

ATTN: Mr. W. J. Shelley

Deposit received from the above-named depositor on April 9, 19 81

for $3,500 (D81 - 484)

has been applied as herein stated and the balance indicated is returned herewith:

Amount of deposit	Check No. 104915	$ 3,500
Applied as explained in "Remarks" below		
From: Acct-1129 to AA905 AMD-S		646
Balance authorized to be refunded		$ 2,854

RECEIVED
SEP 02 1981
U.S. NUCLEAR REGULATORY COMMISSION

Remarks:

$3,500 - Fee Paid
646 - Fee Due (17 man-hrs. @ $38/man-hr.)
$2,854 - Refund Due

Partial refund of amendment fee for April 13, 1981 application; Amendment No. 13 issued July 21, 1981, (Docket No. 40-8027 License SUB-1010.

DISTRIBUTION:
Docket File
PDR
Matls. License Fee File
Mat'ls. Manpower File
LFMB R/F (SS)
LFMB R/F (Beth)

Original Signed by
Wm. O. Miller

Date SEP 01 1981

(Sign original only) William O. Miller, Chief
Title ~~License Fee Management Br.~~ Office of Administration

Refund by
Check No. ....
Cash, $ .... on .... (Signature of payee) ....
(Sign original only)
Other method, $ ....
(Describe)

9/1/81 9/1/81 9/1/81

U.S. GOVERNMENT PRINTING OFFICE

SEP 01 1981

DOCKET NO. 40-8027

Kerr-McGee Nuclear Corporation
ATTN: Mr. W. J. Shelley, Director
Regulation and Control
Kerr-McGee Center
Oklahoma City, Oklahoma 73102 25

Gentlemen:

Amendment No. 13 to License SUB-1010 was issued on July 21, 1981, in response to your April 13, 1981 application for amendment. Accompanying your application was an amendment fee of $3,500.

In accordance with Footnotes 1(d) and 4 of the enclosed 10 CFR 170, we have reviewed the manpower expenditures required for the review of the subject application for amendment, and the actual review cost is $646. We have notified the NRC Office of the Controller to refund $2,854 to your Company.

Sincerely,

Original Signed by
Wm. O. Miller

William O. Miller, Chief
License Fee Management Branch
Office of Administration

Enclosure:
10 CFR 170

DISTRIBUTION:
Docket File
PDR
Matls. License Fee File ✓
Matls. Manpower File
LFMB R/F (SS)
LFMB R/F (Beth)
ASCabell, LFMB

OFFICE	LFMB:ADM	LFMB:ADM	LFMB:ADM	LFMB:ADM			
SURNAME	DWells:rej	ASCabell	CJHolloway	WOMiller			
DATE	9/1/81	9/1/81	9/ /81	9/1/81			

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

08/26/81

DOCKET NO.: 04008027

MEMORANDUM FOR: WILLIAM O. MILLER, CHIEF
LICENSE FEE MANAGEMENT BRANCH
OFFICE OF ADMINISTRATION

FROM: W. NIXON
URANIUM FUEL LICENSING BR
DIVISION OF FUEL CYCLE & MATERIAL SAFETY
OFFICE OF NUCLEAR MATERIALS
SAFETY AND SAFEGUARDS

SUBJECT: COSTS AND MANHOURS FOR LICENSING ACTION

THE CONTRACT COSTS INCURRED AND MANHOURS USED IN REVIEWING THE APPLICATION DATED 04/13/81 ARE TABULATED BELOW FOR LICENSE NO. SUB-1010 .

1. NAME: KERR-MCGEE CORPORATION

RECEIVED BY LFMB
Date 8/28/81
Log P.M.
By A.L.B.
Orig. To
Action Compl.

2. A) CASEWORK CONTROL NO. 04008027A09S
   B) MAIL CONTROL NO. 18954
   C) TAC NO. -

3. A) COMPLETION DATE: 07/21/81
   B) AMENDMENT NO. 13

4. FINAL FEE TYPE IDENTIFIED BY NMSS: Minor

5. CONTRACT COSTS ASSOCIATED WITH THIS LICENSE APPLICATION:

   A) FOR ENVIRONMENTAL REVIEW $
   B) FOR SAFETY REVIEW $
   C) TOTAL CONTRACT COSTS $

6. TAC WORK BY NRR: - HOURS

7. NMSS HOURS:

A) ENVIRONMENTAL REVIEW	0.0 HOURS
B) SAFETY REVIEW	17.0 HOURS
C) MATERIAL CONTROL	0.0 HOURS
D) PHYSICAL SECURITY	0.0 HOURS
E) TOTAL	17.0 HOURS

W. A. Nixon
W. NIXON
PROJECT MANAGER

APPROVED: R G Page
R. PAGE
BRANCH CHIEF
URANIUM FUEL LICENSING BR

Standard Form 1047
September 1973
4 Treasury FRM 2000
1047-106

PUBLIC VOUCHER FOR REFUNDS

Voucher No. ....

Schedule No. ....

U. S. Nuclear Regulatory Commission
(Department or Establishment, Bureau or Office)

Location: Washington, D.C 20555

Appropriation or Fund: ....

PAID BY

To Address
Kerr-McGee Nuclear Corporation
Kerr-McGee Center
Oklahoma City, Oklahoma 73102

ATTN: Mr. W. J. Shelley

Deposit received from the above-named depositor on April 9, 19 81

for $3,500 (D81 - 484)

has been applied as herein stated and the balance indicated is returned herewith:

Amount of deposit	Check No. 104915	$ 3,500
Applied as explained in "Remarks" below		
From: Acct-1129 to AA905 AMD-S		646
Balance authorized to be refunded		$ 2,854

Remarks:

$3,500 - Fee Paid
646 - Fee Due (17 man-hrs. @ $38/man-hr.)
$2,854 - Refund Due

Partial refund of amendment fee for April 13, 1981 application; Amendment No. 13 issued July 21, 1981, (Docket No. 40-8027 License SUB-1010.

DISTRIBUTION:
Docket File
PDR
Matls. License Fee File ✓
Matls. Manpower File
LFMB R/F (SS)
LFMB R/F (Beth)

Original Signed by
Wm. O. Miller

Date SEP 01 1981

(Sign original only)

William O. Miller, Chief
~~License Fee Management Br.~~

Title Office of Administration

Refund by
Check No. ....
Cash, $ .... *on* .... *(Signature of payee)* ....
(Sign original only)
Other method, $ ....
(Describe)

2C/1150

AUG 10 1981

Kerr-McGee Corporation
ATTN: W. J. Shelley, Vice President
Nuclear Licensing and Regulation
Kerr-McGee Center
Oklahoma City, OK 73125

Gentlemen:

In response to your letters of February 17 and July 17, 1981, we have extended the period to September 1, 1981 for you to prepare and submit a radiological contingency plan for the reasons given in the enclosed Modification of February 11, 1981 Order.

Sincerely,

Original Signed by
Richard E. Cunningham

Richard E. Cunningham, Director
Division of Fuel Cycle and
Material Safety

Enclosure: As stated.

Distribution:

RGPage	PDR
FDFisher	ERESS R/F
WTCrow	NMSS R/F
JTLong	FC Central File
ERESS, Kerr-McGee Corp. ✓	SHO
IE Headquarters (2 Copies)	OELD
IE Region IV	JCosgrove, Jr, OELD
Docket File	

CRESS:ss	FCUF	FCUF	FC	OELD	FC
Fisher 2-H	FDFisher:ch	RGPage	TFCarter	On Draft	RECunningham
8/06/81	8/7/81	8/7/81	8/10/81	8/6/81	8/10/81

~~1152481918~~

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of Kerr-McGee Corporation Kerr-McGee Center Oklahoma City, OK 73125	)))))	Docket No. 40-8027 Source Material License No. SUB-1010

MODIFICATION OF FEBRUARY 11, 1981 ORDER

I.

In an Order to Modify License ("the Order"), 46 Fed. Reg. 12566 (February 17, 1981), the Nuclear Regulatory Commission directed Kerr-McGee Corporation ("the licensee") with facilities in Gore, Oklahoma, to submit within 120 days of the effective date of the Order either a radiological contingency plan and an application for license amendment to incorporate the plan as a condition of the license or, alternatively, to submit an application for license amendment to reduce the possession limits for radioactive materials below specified quantities.

By letters dated February 17 and July 17, 1981, the licensee requested additional time in which to prepare and submit a radiological contingency plan. Specifically, the licensee requested an extension to September 1, 1981. The licensee's reasons for the requested extension were that additional time was necessary due to the press of other regulatory matters.

The licensee should upgrade its existing emergency plan to conform to the guidance contained in Enclosure 1 to the Order at an early date. However, the

requested extension should not significantly affect the licensee's emergency preparedness because the licensee has, as an existing condition of its license, an emergency plan which addresses many of the elements of the radiological contingency plan required by the Order. Since the licensee's request is reasonable under the circumstances, the Director has determined that there is good cause for modifying the Order and granting an extension to September 1, 1981 to submit the revised plan.

II.

Accordingly, pursuant to sections 63 and 161b of the Atomic Energy Act of 1954, as amended, §40.41(e) of 10 CFR Part 40, and §2.204 of 10 CFR Part 2, IT IS HEREBY ORDERED that the time within which the licensee shall submit a radiological contingency plan, pursuant to the Order dated February 11, 1981, shall be extended to September 1, 1981. The Order, except as modified herein, remains in effect in accordance with its terms.

III.

The licensee or any other person who has an interest affected by this Modification of Order may request a hearing on this Modification of Order within 25 days of its issuance. A request for hearing shall be submitted to the Director, Division of Fuel Cycle and Material Safety, U.S. Nuclear Regulatory Commission, Washington, D.C., 20555. Copies of the request shall also be sent to the Secretary of the Commission and the Executive Legal Director at the same address. If a hearing is requested by a person other

than the licensee, that person shall describe, in accordance with 10 CFR 2.714(a)(2), the nature of the person's interest and the manner in which that interest is affected by this Modification of Order.

If a hearing is requested by the licensee or other person who has an interest affected by this Modification of Order, the Commission will issue an order designating the time and place of any such hearing. If a hearing is held, the issue to be considered at such a hearing shall be whether this Modification of Order should be sustained.

This Modification of Order shall become effective upon expiration of the period within which a hearing may be requested or, if a hearing is requested, on the date specified in an order issued following further proceedings on this Modification of Order.

Original Signed by
Richard E. Cunningham

Richard E. Cunningham, Director
Division of Fuel Cycle and Material Safety

Dated at Silver Spring, Maryland
this day of , 1981

Distribution:
RGPage
FDFisher
WTCrow
JTLong
ERESS, Kerr-McGee Corp.
IE Headquarters (2 Copies)
IE Region IV
Docket File
PDR
ERESS R/F
NMSS R/F
FC Central File
SHO
OELD
JCosgrove, Jr, OELD

CRESS:ss	FCUF	FCUF	FC	OELD	FC
Fisher 2-I	FDFisher:per	RGPage	TFCarter	On Draft	RECunningham
8/06/81	8/7/81	8/9/81	8/10/81	8/6/81	8/ /81