DOCKET NO. 40-8027

KERR-McGEE CORPORATION
KERR McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

April 19, 1973

Environmental File

Mr. J. E. Rothfleisch
Materials Branch
Directorate of Licensing
U.S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Rothfleisch:

Subject: Exposure on SH 10

In accordance with your request that I supply the data and calculations to support the estimated exposure on Oklahoma State Highway 10 (Appendix B), a description of work is as follows:

1. Determined the average distance traveled along SH 10 as 1056 feet.

2. Dividing this into the distance (.5 mile, 2600 feet) at which concentrations were calculated as shown on Pages 35, 36, 37 and 40 of our January 18 submittal (Environmental Report Supplemental #2) gives 2.24 and when squared equals 5.01. Use of this factor to extrapolate to a different distance was recommended by Dames & Moore.

3. This factor was applied to the arithmetic average exposure (lung-5.34 man rem) at 1/2 mile determined for the points of the compass from NNE to S as shown on Tables 6A, 7A, 8A and 9A (Pages 35, 36, 37 and 40) resulting in the data shown in Appendix B (April 9 submittal) as average annual radiation exposure.

4. The total annual average exposure for the sensitive organ, lung, was calculated by assuming 200 people a day traveling SH 10 for two minutes resulting in a total minute-person per year of 146,000 or 1.46×10^5 ÷ 5.25×10^5 or .276 x lung dose of 5.34 or 1.47×10^{-3} man-rem.

2865

FROM:
KERR-MCGEE CORP+
Oklahoma City, OK

DATE OF DOCUMENT: Apr. 19, 1973
DATE RECEIVED: Apr. 30, 19737
NO.: 2865

LTR: X MEMO: REPORT: OTHER:

TO:
J. E. Rothfelfshh

ORIG.: 1 CC: OTHER:

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. submitting additional info to the Environmental Report Supplement #2 dtd. January 18, 1973 (1 cy rec'd.)

ENCLOSURES:
DO NOT REMOVE

REMARKS:
ACKNOWLEDGED

REFERRED TO	DATE	RECEIVED BY	DATE
Malaro: w/extra	5/4		
Distribution			
1-reg. file cy (orig.) ENVIRONMENTAL FILE			
1-PDR			
1-LPDR			
1-RO (Hdqtrs)			
4-Chitwood			
1-R. Cunningham			
1-H. Lowenberg			
1-J. Shafer			
		2865 df	

U.S. ATOMIC ENERGY COMMISSION
MAIL CONTROL FORM FORM AEC-326S (8-60)

☆ U.S. GOVERNMENT PRINTING OFFICE: 1971—446—158

As you can see, this calculation is greater than that shown on Appendix B which was due to an arithmetic error. Bone exposure should be corrected to .0496 mrem.

We understand that the State Highway Department has a counter on SH 10 and will have data available in approximately 30 days. If it differs significantly from our assumptions for this calculation, we will notify you.

Data requested of Mr. J. W. Craig at the Sequoyah Facility is attached. Please let me know if there is additional data that I can supply.

Sincerely,

W. J. Shelley, Director
Regulation and Control
Nuclear Division

WJS:srj

Attachment

Received W/Ltr. Dated 4-19-73

RAINFALL AT THE SEQUOYAH FACILITY (1972)

	January	February	March	April	May	June	July	August	September	October	November	December
1	-	-	-	-	-	-	-	-	-	-	.45	-
2	.13	.09	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	.35	-	-	-	-	-
4	.13	-	-	-	-	-	-	.33	.07	-	-	-
5	-	-	-	-	-	-	.20	-	-	-	.77	.03
6	-	.05	-	-	.01	-	-	-	-	.06	.06	-
7	-	.17	-	-	.06	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	.04
9	.01	-	-	-	-	-	-	-	-	.02	-	-
10	.01	-	-	-	-	-	.12	-	-	-	-	-
11	-	-	-	-	.41	-	-	-	-	-	-	.42
12	-	.51	-	-	.12	.10	.40	-	-	-	1.06	.08
13	-	.05	.10	.22	-	.18	.23	-	-	-	-	-
14	-	-	-	.51	-	.52	.06	-	-	.15	-	.19
15	-	-	-	.03	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	.34	-	.03	-
17	-	-	-	-	-	-	-	-	-	-	.10	-
18	-	-	-	-	-	-	.06	-	-	.08	.65	-
19	-	-	-	.43	-	.08	-	-	-	-	.02	-
20	-	-	-	2.75	-	-	.04	-	.46	.13	-	.34
21	-	-	.61	-	-	-	-	.03	1.47	5.40	.22	-
22	-	-	.02	-	-	-	.19	.16	1.67	-	.20	-
23	-	-	-	-	-	.47	-	-	-	-	-	-
24	-	-	-	-	-	-	-	.11	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	.04	-
26	-	-	-	.67	-	.28	-	-	1.30	.09	-	-
27	.06	-	.37	-	-	.05	-	-	-	-	-	-
28	.14	-	-	-	.63	.06	-	-	-	-	-	-
29	.02	-	-	-	.05	-	.12	-	.07	.04	.03	.26
30	-		-	.45	-	-	-	.40	-	2.46	-	.02
31	-		-		-		-	.24		1.14		-

4/17/73

MONITOR WELL INFORMATION

Well # & Location	Total Depth	Normal Depth To Water	* Casing Depth
2301	19'	2'	19'
2302	27' 6"	1'	27'
2303	38' 7"	23'	38'
2305	28' 4"	25'	28'
2306	39'	14'	** 39'
2307		5' 10"	
2308			
2309	53'	13' 2"	(Not Known)
2310	40'	28'	40'
2311	40'	35'	40'
2312	60'	24'	60'
2313	40'	37'	40'
2314	40'	36'	40'
2315	37'	3'	37'

* Last two feet of casing perforated

4/17/73

Monitor Well Sampling Dates

The Sampling dates for the monitor wells, for 1972 are as follows:

Month	
January	1/8-15-22-29/72
February	2/5-12-19-26/72
March	3/4-11-18-25/72
April	4/6-13-20-27/72
May	5/4-11-18-25/72
June	6/1-8-15-24-30/72
July	7/28/72
August	8/26/72
September	9/30/72
October	10/30/72
November	11/28-29/72
December	12/29/72

4/17/73

U. S. GOVERNMENT PRINTING OFFICE: 1972 – 461-842

FROM:

Kerr-McGee Corp
Oklahoma City, OK 73102
W.J. Shelley

DATE OF DOCUMENT	DATE RECEIVED	NO.:
Apr 9, 1973	Apr 11, 1973	2388

LTR.	MEMO:	REPORT:	OTHER:
X			X

TO:

L.E. Rouse

ORIG.:	CC:	OTHER:
X	X	

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

CLASSIF: Proprietary Info

POST OFFICE

REG. NO:

FILE CODE: DOCKET NO: 40-8027

DESCRIPTION: (Must Be Unclassified)

Ltr., transmitting additional info as a result of a visit and the previous submittals of the Sequoyah Environmental Report

ENCLOSURES:

Drawing 201-M-5001, Rev. 1 (Proprietary)

REFERRED TO	DATE	RECEIVED BY	DATE
Mallaro:	4/11		
W/Reg. file cy			
DISTRIBUTION:			
1-PDR w/o Drawing			
1-RO			
		2388	erj

ACKNOWLEDGED

REMARKS:

DO NOT REMOVE

U.S. ATOMIC ENERGY COMMISSION **MAIL CONTROL FORM** FORM AEC-326S (8-60)

KERR-McGEE CORPORATION
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

April 9, 1973

Mr. L. E. Rouse, Chief
Fuel Fabrication and Reprocessing Branch
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Attention Mr. J. E. Rothfleisch

Dear Sir:

Please refer to Mr. Malaro's letter of March 26 requesting certain additional information as a result of his visit on March 21-22 and the previous submittals of the Sequoyah Environmental Report.

1. A proposal covering the short-term treatment as well as the planned ultimate solution to the solvent extraction raffinate disposal is attached herewith as Appendix A.

2. Estimated ground level concentration of radioactive and chemical pollutants along State Highway 10 along with annual average organ doses and total doses to the transient population is attached as Appendix B.

3. Copies of the data supplied to the U.S. Corps of Engineers and Environmental Protection Agency on liquid effluent discharged from the plant are attached herewith as Appendix C.

4. A complete process flowsheet showing all effluents is attached as Drawing 201-M-5001, Rev. 1. It should be noted that Kerr-McGee considers this flowsheet proprietary and we request that it be protected from copying and physical distribution in accordance with 10 CFR 2.790(b). The flowsheet describes probable variations to certain flows.

Sincerely,

W. J. Shelley, Director
Regulation and Control
Nuclear Division

WJS:srj
Attachments

2388

APPENDIX A

DISPOSAL OF RAFFINATE SOLUTION

Permanent disposal of radionuclide-containing solutions from the solvent extraction processes was initially recognized as a problem to the use of this process. From the initial design to current operation of the process, many technical feasibility discussions have been held and proposals made to provide for disposal of this solution in a safe manner.

It was initially contemplated that the solution would be pumped into a permanent underground reservoir for disposal. The reservoir contains water of high mineral content with over MPC quantities of $Radium_{226}$ and was thought to be an ideal environment for disposal. Applications for the licensing of this method have been denied by the AEC on two successive submittals. Kerr-McGee is requesting a formal hearing as to the technical feasibility and safety of this method.

With the denial of the deep well disposal method, surface impoundment was immediately commenced and has continued during initial operation. In this area of climatology, however, permanent disposal by such a method seems uneconomic though demonstrated to be hazard free. Currently, Kerr-McGee seeks to avoid the construction of an additional raffinate storage pond during the period that a permanent method of disposal is determined to be technically and economically feasible.

Two proposed amendments to our operating license, SUB-1010, involving the evaporation of the excess liquid in the pond and treating the liquid contents of the pond to remove radionuclides and, subsequently, using the ammonium nitrate rich material as a fertilizer on our site have been submitted. With approval of these amendments in the immediate future or shortly, we would commence operations of these additional processes during 1973.

In the event a third pond is required, we would modify the current operation by treating the raffinate for removal of radionuclides prior to storage in the pond and construct the pond with the same specifications as those presently in use.

In the event that operation of the evaporation or treatment system requested under the proposed amendments does not maintain pond levels, other methods of disposal will be pursued further. Technically feasible processes producing solid materials containing radionuclides which could be disposed of by reprocessing in a uranium mill or burial in a licensed commercial burial ground are next on our agenda for study and development.

It may be technically feasible to produce the raffinate as one or more slurries containing the radionuclides and other metallic impurities in the form of solid hydroxides and/or sulfates. Separation and drying of these solids would then permit drumming

and burial or recovery of the uranium in a uranium mill. Transportation of the solid as a slurry may be the most economical method. Considerable engineering will be required to further define the economics and select the most practical method.

We expect to evolve a positive solution to both the short-term and long-term disposal of the raffinate solution by one or more of the alternates described above without damage to the environment.

APPENDIX B

OKLAHOMA STATE HIGHWAY 10

RADIATION EXPOSURE

AVE ANNUAL

Kidney	.234 m rem
Lung	5.36 m rem
Bone	.037 m rem

Total

(200 persons per day for 2 minutes)

Lung $.0148 \times 10^{-3}$ man rem

CHEMICAL EXPOSURE AVE ANNUAL

Fluoride 9.57×10^{-2} $\mu g/m^3$

APPENDIX C

Regulatory File Cy Rec'd APR 9 1973 Ackd

FORM APPROVED
OMB NO. 49-R 0456

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

APPLICATION FOR PERMIT TO DISCHARGE OR WORK IN NAVIGABLE WATERS AND THEIR TRIBUTARIES

SECTION I. GENERAL INFORMATION

1. State	Application Number (to be assigned by Corps of Engineers)			
	Div.	Dist.	Type	Sequence No.
O K				

2. Name of applicant and title of signing official

Kerr-McGee Corporation
George H. Cobb, Executive Vice President

3. Mailing address of applicant

Kerr-McGee Corporation
Kerr-McGee Buil[illegible]
133 Robert S. Kerr Avenue
Oklahoma City, Oklahoma 73102

4. Name, address, telephone number and title of applicant's authorized agent for permit application coordination and correspondence.

T. L. Hurst T.L.H.
Director of Environmental Services
Kerr-McGee Corporation
133 Robert S. Kerr Avenue
Oklahoma City, Oklahoma 73102

Telephone:
(405) 236-1313, Ext. 610

NOTE TO APPLICANT: Refer to the pamphlet entitled "Permits for Work and Structures in and for Discharges or Deposits into Navigable Waters" before attempting to complete this form.

Required Information

a. All information contained in this application will, upon request, be made available to the public for inspection and copying. A separate sheet entitled "Confidential Answers" must be used to set out information which is considered by the applicant to constitute trade secrets or commercial or financial information of a confidential nature. The information must clearly indicate the item number to which it applies. Confidential treatment can be considered only for that information for which a specific written request of confidentiality has been made on the attached sheet. However, in no event will identification of the contents and frequency of a discharge be recognized as confidential or privileged information.

b. The applicant shall furnish such supplementary information as is required by the District Engineer in order to evaluate fully an application.

c. If additional space is needed for a complete response to any item on this form, attach a sheet entitled "Additional Information." Indicate on that sheet the item numbers to which answers apply.

d. Drawings required by items 20 and 21 should be attached to this application. Other papers which must be attached to this application include, if applicable, copies of a water quality certification or a written communication which describes water quality impact (see Item 22 and Item 10 of Section II below), the additional information sheet(s) in "c" above, and the confidential information sheet described in "a" above.

Fees

If any discharge or deposit is involved, an application fee of $100 must be submitted with this application. An additional $50 is required for each additional point of discharge or deposit.

Signature

a. If a discharge is involved, an application submitted by a corporation must be signed by the principal executive officer of that corporation or by an official of the rank of corporate vice president or above who reports directly to such principal executive officer and who has been designated by the principal executive officer to make such applications on behalf of the corporation. In the case of a partnership or a sole proprietorship, the application must be signed by a general partner or the proprietor. Other signature requirements are discussed in the pamphlet.

b. If no discharge is involved, an application may be signed by the applicant or his authorized agent.

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate.

Signature of Applicant

GEORGE H. COBB

18 U.S.C. Section 1001 provides that:

Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

FOR CORPS OF ENGINEERS USE ONLY

Acronym name of applicant

Are discharge structures

Major? ☐ Minor? ☐ N/A? ☐

Date received, form not complete — — — — — —

Date received, form complete but without certificate — — — — — —

Date received, form complete — — — — — —

Date of Cert./Ltr. — — — — — —
day mo yr

Date sent to EPA, form not complete — — — — — —

Date sent to EPA, NOAA, D/I, AEC, FPC in complete form — — — — — —
day mo yr

5. Date: JUN 21 71 (mo day yr)

(Office [redacted])

6. Check type of application: a. Original [X] b. Revision [ ]

7. Number of original application

8. Name of facility where discharge or construction will occur.

Sequoyah Facility of Kerr-McGee Corporation, Nuclear Division

9. Full mailing address of facility named in item 8 above.

Kerr-McGee Corporation
Sequoyah Facility
Post Office Box 267
Gore, Oklahoma 74435

10. Names and mailing addresses of all adjoining property owners whose property also adjoins the waterway.

Adjoining property is owned by U. S. Government, Corps of Engineers.

11. Check to indicate the nature of the proposed activity:
a. Dredging [ ] b. Construction [ ] c. Construction with Discharge [ ] b. Discharge only [X]

12. If activity is temporary in nature, estimate its duration in months.

Permanent

If application is for a discharge:

13. List intake sources

Source	Estimated Volume in Million Gallons Per day or Fraction Thereof
Municipal or private water supply system	
Surface water body	2.3
Ground water	
Other	

14. Describe water usage within the plant

Type	Estimated Volume in Million Gallons Per day or Fraction Thereof
Cooling water	0.72
Boiler Feed water	.21
Process water	.21
Sanitary system*	<.01
Other (presently excess bypass water)	1.15

15. List volume of discharges or losses other than into navigable waters.

Type	Estimated Volume in Million Gallons Per day or Fraction Thereof
Municipal waste treatment system	
Surface containment	<.03
Underground disposal	
Waste Acceptance firms	
Evaporation	<.01
Consumption	<.01

* Indicate number employees served per day: 130

If structures exist, or dredging, filling or other construction will occur, the precise location of the activity must be described.

(Office use only)

a. Name the corporate boundaries within which the structures exist or the activity will occur.

16. State: Oklahoma

17. County: Sequoyah

18. City or Town: N/A - Approx. 2 1/2 miles south-east of Gore, Okla. off Highway

b. Name of waterway at the location of the activity

19. Illinois River (refer ANS 6955 II - Series V783 - attached Exhibit SE-I).

20. Maps and sketches which show the location and character of each structure or activity, including any and all outfall devices, dispersive devices, and non-structural points of discharge, must be attached to this application.

21. For construction or work in navigable waters for which a separate permit is sought under 33 U.S.C. 403, the character of each structure must be fully shown on detailed plans to be submitted with this application. Note on the drawings those structures for which separate discharge information (Section II of this form) has been submitted.

22. List all approvals or denials granted by Federal, interstate, State or local agencies for any structures, construction, discharges or deposits described in this application.

Type of document	Id. No.	Date	Issuing Agency
(1) Waste Disposal Permit	IW-70-011	3/9/71	Okla. Water Resources Board
(2) Sanitary Waste Treatment Permit	-	8/21/69	Okla. State Dept. of Health
(3) Radioactive Source Material License	SUB-1010	2/20/70	U.S. Atomic Energy Commission

23. Check if facility existed or was lawfully under construction prior to April 3, 1970. [XX]

24. If dredging or filling will occur:

State the type of materials involved, their volume in cubic yards, and the proposed method of measurement.

N/A

25. Describe the proposed method of instrumentation which will be used to measure the volume of any solids which may be deposited and to determine its effect upon the waterway.

Solids content of the facility discharge is essentially less than the receiving waterway and the discharge has no significant effect of solids deposition in the Illinois River. Concentrations of solids are measured on the effluent discharge samples by Standard Methods (12th Edition).

26. State rates and periods of deposition described in Item 25.

N/A. No significant deposition.

SECTION II. PLANT PROCESS AND DISCHARGE DESCRIPTION

1. Discharge described below is a. Present [X] b. Proposed new or changed [ ]	2. Implementation schedule [ ]	(Use only)

Name of corporate boundaries within which the point of discharge is located. State	County	City or Town	6. Discharge Serial No.
3. Oklahoma	4. Sequoyah	5. N/A - Approx. 2 1/2 mi SE of Gore, off Hwy. 6	001

State the precise location of the point of discharge.

7. Latitude 35 Degrees; 30 Min; 5 Sec.

8. Longitude 95 Degrees; 5 Min; 25 Sec.

9. Name of waterway at the point of discharge. Natural watercou (drainage ditch) which discharges to the Ill River (refer attached Exhibits SF-II and SF-

10. Has application for water quality certification or description of impact been made? If so, give date:

Date	Check if certificate is attached to form	Name Issuing Agency
MAY 11 71 (mo day yr)	See Attached Exhibits SF-IV and SF-V.	Okla. Water Resources Board

11. Narrative description of activity (include terms of general 4 digit Standard Industrial Classification, and specific manufacturing process).

Nuclear Processing - The Sequoyah Facility is a UF_6 conversion plant. Activities consist of refining of uranium from ore concentrates (yellowcake) and conversion to uranium hexafluoride (UF_6), and related control laboratory activities.

12. Standard industrial classification number.	13. Principal product.	14. Amount of principal product produce per day.
SIC 2819	Uranium hexafluoride (UF_6)	40,000 pounds UF_6

15. Principal raw material.	16. Amount of principal raw material consumed per day.	17. Number of batch discharges per day.
Uranium ore concentrates (yellowcake)	43,000 pounds ore concentrate	

18. Average gallons per batch discharge.	19. Date discharge began.	20. Date discharge will begin.
	JUL 7 69 (mo day yr)	— — — (mo day)

21. Describe waste abatement practices.

See Attached Exhibit SF-VI.

PHYSICAL DESCRIPTION OF INTAKE WATER AND DISCHARGE

Intake | Discharge | (Office use only)

Discharge Serial No. 001

Parameter and (Code)	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	AVERAGE (DAILY) (3)	MINIMUM (OPERATING YEAR) (4)	MAXIMUM (OPERATING YEAR) (5)	SAMPLE FREQUENCY (6)	CONTINUOUS MONITORING (7)
Flow (Gallons per day) 00056	2,300,000	300,000	2,250,000	1,500,000	2,500,000	OTHR (1)	ABS
pH 00400	7.2	7.2	8.5	6.7	9.3	OTHR (2)	ABS
Temperature (Winter) (°F) 74028	45	50	52	45	55	OTHR (3)	ABS
Temperature (Summer) (°F) 74027	65	70	57	50	70	OTHR (3)	ABS

23. DISCHARGE CONTENTS

PARAMETER	PRESENT	ABSENT	PARAMETER	PRESENT	ABSENT	PARAMETER	PRESENT	ABSENT
Color 00080	X		Aluminum 01106		X	Nickel 01067		X
Turbidity 00070	X		Antimony 01097		X	Selenium 01147		X
Radioactivity 74050	X		Arsenic 01002		X	Silver 01077		X
Hardness 00900	X		Beryllium 01012		X	Potassium 00937	?	
Solids 00500	X		Barium 01007		X	Sodium 00929	?	
Ammonia 00610		X	Boron 01022		X	Titanium 01152		X
Organic Nitrogen 00605		X	Cadmium 01027		X	Tin 01102		X
Nitrate 00620	X		Calcium 00916	X		Zinc 01092		X
Nitrite 00615		X	Cobalt 01037		X	Algicides 74051		X
Phosphorus 00665	X		Chromium 01034		X	Oil and Grease 00550		X
Sulfate 00945	X		Copper 01042		X	Phenols 32730		X
Sulfide 00745		X	Iron 01045	X		Surfactants 38260		X
Sulfite 00740		X	Lead 01051		X	Chlorinated Hydrocarbons 74052		
Bromide 71870		X	Magnesium 00927	X		Pesticides 74053		
Chloride 00940	X		Manganese 01055		X	Fecal Streptococci Bacteria 74055		
Cyanide 00720		X	Mercury 71900		X	Coliform Bacteria 74056		
Fluoride 00951	X		Molybdenum 01062		X			

24a. [illegible] all known hazardous or p[illegible]ally hazardous substances in your plant been inv[illegible]?

[X] Yes [ ] No

24b. If yes, have steps been taken to insure that there exists no possibility of any such known hazardous or potentially hazardous substance enterin this discharge?

[X] Yes [ ] No

25. Remarks. (See also Exhibit SF-VII). Sequoyah Facility is periodically inspected by Atomic Energy Commission inspectors for compliance to AEC license conditions. Control of hazardous substances is assured by process control features and monitoring practice All raw materials and uranium bearing compounds are inventoried once each month. Plan is designed so that accidental spills can be diverted to and retained in emergency basin.

The information above completes the basic reporting requirements which are required of all applicants. Those applicants whose discharge results fro an activity included within any of the Standard Industrial Classification Code (SIC Code) categories listed below must complete Part A of this form a well.

CRITICAL INDUSTRIAL GROUPS

SIC	098	FISH HATCHERIES, FARMS, AND PRESERVES
SIC	10-14	DIVISION B – MINING
SIC	201	MEAT PRODUCTS
SIC	202	DAIRY PRODUCTS
SIC	203	CANNED PRESERVED FRUITS, VEGETABLES (EXCEPT SEAFOODS, SIC 2031 AND 2036)
SIC	2031, 2036	CANNED AND CURED FISH AND SEAFOODS; FRESH OR FROZEN PACKAGED FISH AND SEAFOODS
SIC	204	GRAIN MILL PRODUCTS
SIC	206	SUGAR
SIC	207	CONFECTIONARY AND RELATED PRODUCTS
SIC	208	BEVERAGES
SIC	209	MISCELLANEOUS FOOD PREPARATIONS AND KINDRED PRODUCTS
SIC	22	TEXTILE MILL PRODUCTS
SIC	23	APPAREL AND OTHER FINISHED PRODUCTS MADE FROM FABRICS AND SIMILAR MATERIALS
SIC	242	SAWMILLS AND PLANING MILLS
SIC	2432	VENEER AND PLYWOOD
SIC	2491	WOOD PRESERVING
SIC	26	PAPER AND ALLIED PRODUCTS
SIC	281	INDUSTRIAL INORGANIC AND ORGANIC CHEMICALS (EXCEPT SIC 2818)
SIC	2818	INDUSTRIAL ORGANIC CHEMICALS
SIC	282	PLASTICS MATERIALS AND SYNTHETIC RESINS, SYNTHETIC RUBBER, SYNTHETIC AND OTHER MAN-MADE FIBERS, EXCEPT GLASS
SIC	283	DRUGS
SIC	284	SOAP, DETERGENTS, AND CLEANING PREPARATIONS, PERFUMES, COSMETICS, AND OTHER TOILET PREPARATIONS
SIC	285	PAINTS, VARNISHES, LACQUERS, ENAMELS, AND ALLIED PRODUCTS
SIC	2871	FERTILIZERS
SIC	2879	AGRICULTURAL PESTICIDES, AND OTHER AGRICULTURAL CHEMICALS, NOT ELSEWHERE CLASSIFIED
SIC	2891	ADHESIVES AND GELATIN
SIC	2892	EXPLOSIVES
SIC	29	PETROLEUM REFINING AND RELATED INDUSTRI
SIC	3011, [illegible]	TIRES AND INNER TUBES; FABRICATED RUBBER PRODUCTS, NOT ELSEWHERE CLASSIFIED
SIC	3079	MISCELLANEOUS PLASTICS PRODUCTS
SIC	311	LEATHER TANNING AND FINISHING
SIC	32	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS
SIC	331	BLAST FURNACES, STEEL WORKS, AND ROLLING AND FINISHING MILLS
SIC	332	IRON AND STEEL FOUNDRIES
SIC	333, 334	PRIMARY SMELTING AND REFINING OF NONFERROUS METALS; SECONDARY SMELTING AND REFINING OF NONFERROUS METALS
SIC	336	NONFERROUS FOUNDRIES
SIC	347	COATING, ENGRAVING, AND ALLIED SERVICES
SIC	35	MACHINERY, EXCEPT ELECTRICAL
SIC	36	ELECTRICAL MACHINERY, EQUIPMENT, AND SUPPLIES
SIC	37	TRANSPORTATION EQUIPMENT (EXCEPT SHIP BUILDING AND REPAIRING, SIC 3731)
SIC	3731	SHIP BUILDING AND REPAIRING
SIC	491	ELECTRIC COMPANIES AND SYSTEMS
SIC	493	COMBINATION COMPANIES AND SYSTEMS

PART A

(Note: Submission of Part A is required of all applicants whose processes are listed on page 3 above.)

(Office use only)

Discharge Serial No. 001

INFORMATION REQUIRED OF SPECIFIED INDUSTRIES

PARAMETER AND CODE	Intake: (DAILY AVG. CONCENTRATION) (1)	Intake: (DAILY AVG. CONCENTRATION) UNTREATED INTAKE WATER (2)	Discharge: MAXIMUM CONCENTRATION TREATED INTAKE WATER (3)	Discharge: MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	Discharge: DAILY AVG. CONCENTRATION (5)	Discharge: AVERAGE POUNDS PER DAY (6)	Discharge: SAMPLE TYPE (7)	Discharge: SAMPLE FREQUENCY (8)	Discharge: METHOD OF ANALYSIS (9)	Discharge: CONTINUOUS MONITORING (10)	Discharge: (11)
ALKALINITY (as $CaCO_3$) 00410	71	65	76	0.04	1584	60	1000	Aver	Othr 1)	1	ABS
B.O.D. 5-DAY 00310	2	1	10	.005	208	2	32	Aver	Othr 2)	1	ABS
CHEMICAL OXYGEN DEMAND (C.O.D.) 00340	10	10	20	0.01	417	10	167	Aver	Othr 1)	1	ABS
TOTAL SOLIDS 00500	138	140	250	0.13	5212	235	3920	Aver	Othr1)	1	ABS
TOTAL DISSOLVED SOLIDS 70300	137	140	249	0.13	5192	232	3870	Aver	Othr 1)	1	ABS
TOTAL SUSPENDED SOLIDS 00530	1	1	5	.002	104	3	50	Aver	Othr 1)	1	ABS
TOTAL VOLATILE SOLIDS 00505	50	50	71	.037	1480	65	1084	Aver	Othr 2)	1	ABS
AMMONIA (as N) 00610	<1	<1	<1	<.001	20	< 1	16	Aver	Othr 3)	Othr 1)	ABS
KJELDAHL NITROGEN 00625	<1	<1	<1	<.001	20	< 1	16	Aver	Othr 2)	Othr 2)	ABS
NITRATE (as N) 00620	0.57	.6	40	0.02	834	2.5	42	Aver	Othr 3)	Othr 3)	ABS
PHOSPHORUS TOTAL (as P) 00665	0.04	0.04	0.36	<.001	8	0.14	2	Aver	Othr 3)	1	ABS

Additional Information to Application for Discharge Permit

Facility: SEQUOYAH FACILITY of Kerr-McGee Corporation

List and Identification of Attachments of Additional Information

Exhibit No.	Application Item No.	Description
SF-I	Section 1 - 20	Map - Sequoyah Facility Location Map
SF-II	Section I - 20	Map - Sequoyah Facility Location Map - Showing Effluent Discharge
SF-III	Section I - 20	Photographs - Effluent Structure and Watercourse Discharge
SF-IV	Section II - 10	Letter, 5/11/71, Kerr-McGee to Okla. Water Resources Board - request for State Certification
SF-V	Section II - 10	Letter, 5/28/71, Okla. Water Resources Board
SF-VI	Section II - 21	Description of Waste Abatement Practices
SF-VII	Section II - 22, Col. (6) and Part A, Col. (9) (10)	Remarks - Descriptions of Sample Frequency and Method of Analysis.

Application Fee - Check No. 23161 for $100.00

6/21/71

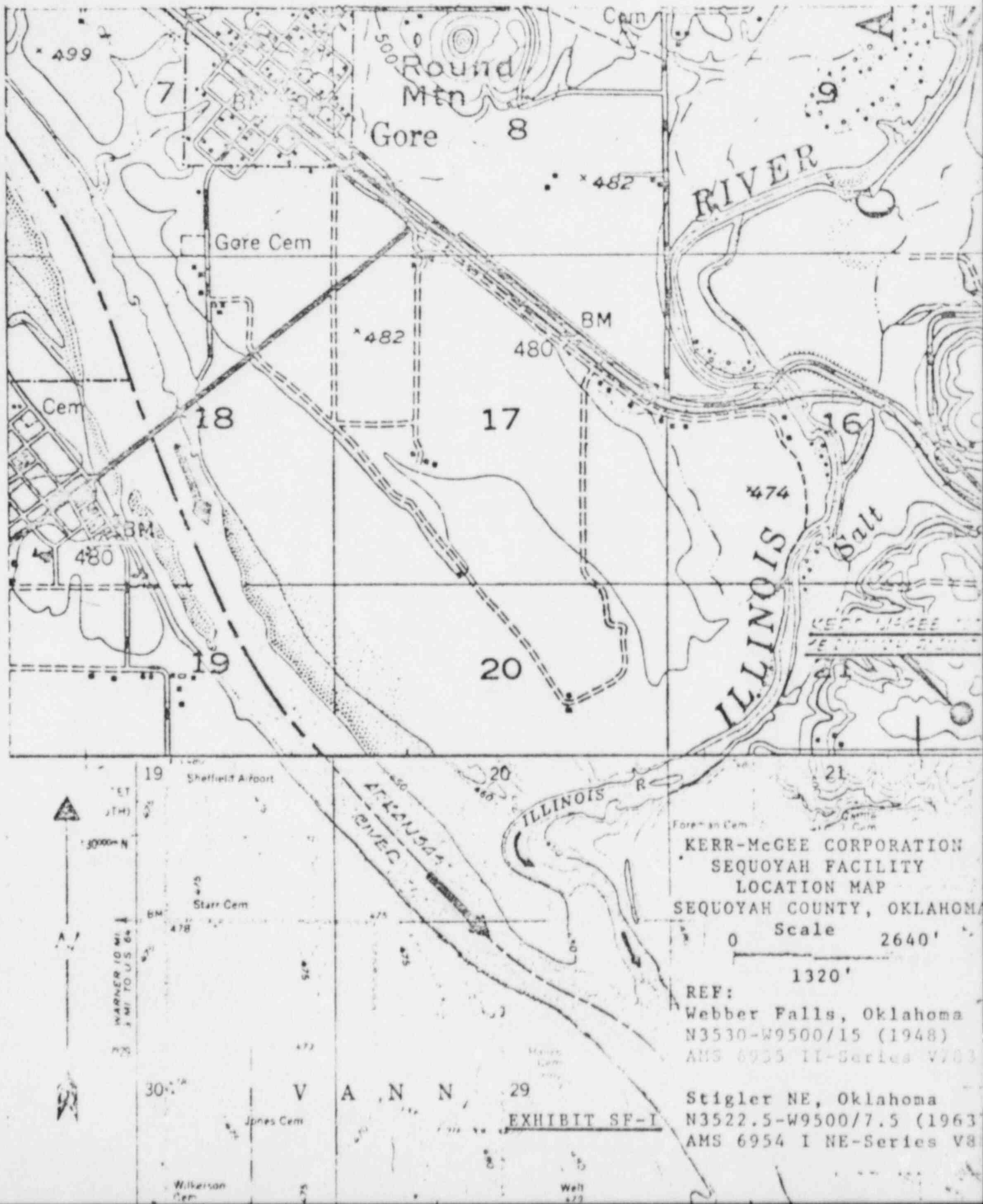


EXHIBIT SF-1

KERR-McGEE CORPORATION
SEQUOYAH FACILITY
LOCATION MAP
SEQUOYAH COUNTY, OKLAHOMA

Scale
0 — 2640'
1320'

REF:
Webber Falls, Oklahoma
N3530-W9500/15 (1948)
AMS 6955 II-Series V783

Stigler NE, Oklahoma
N3522.5-W9500/7.5 (1963)
AMS 6954 I NE-Series V8

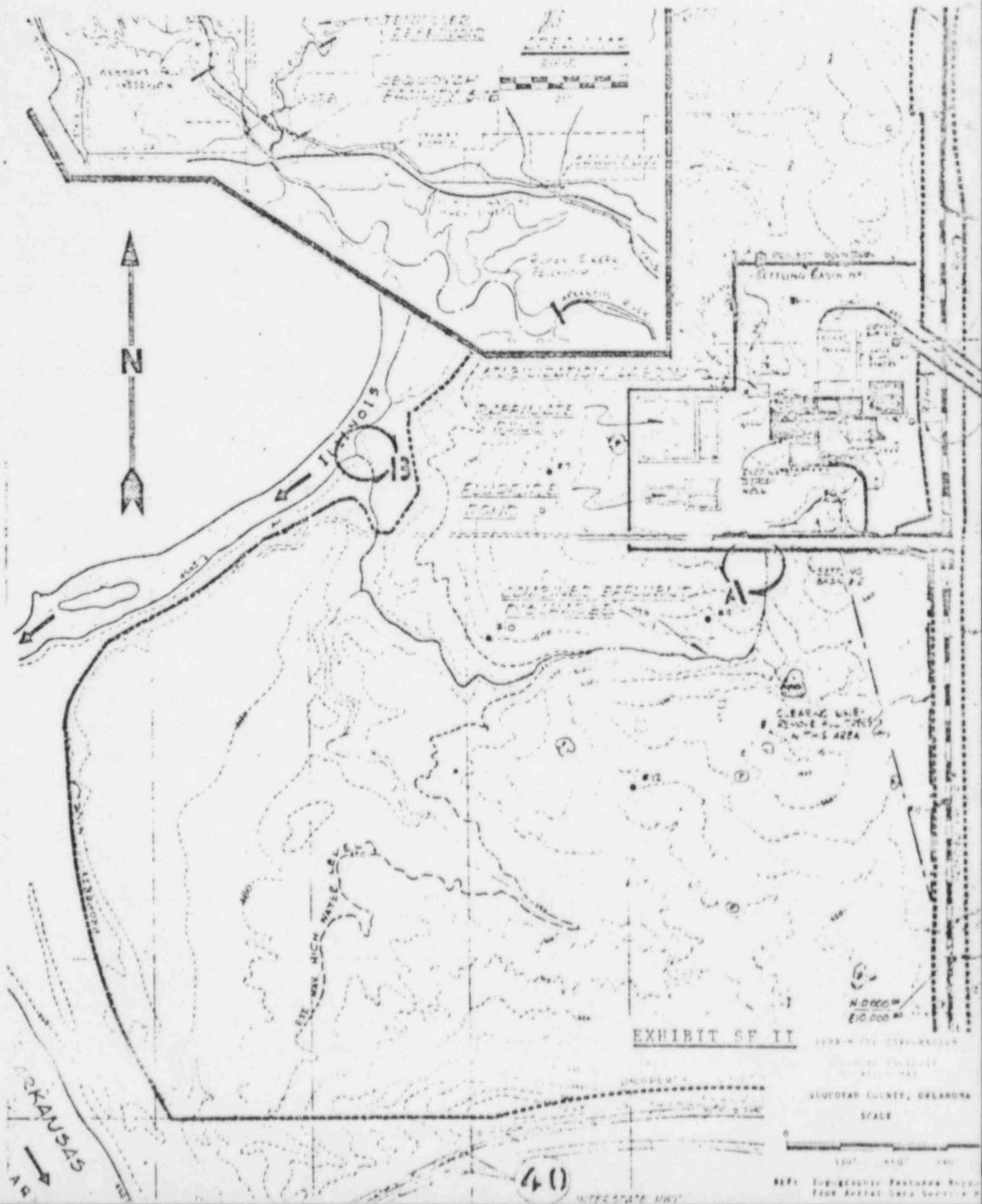
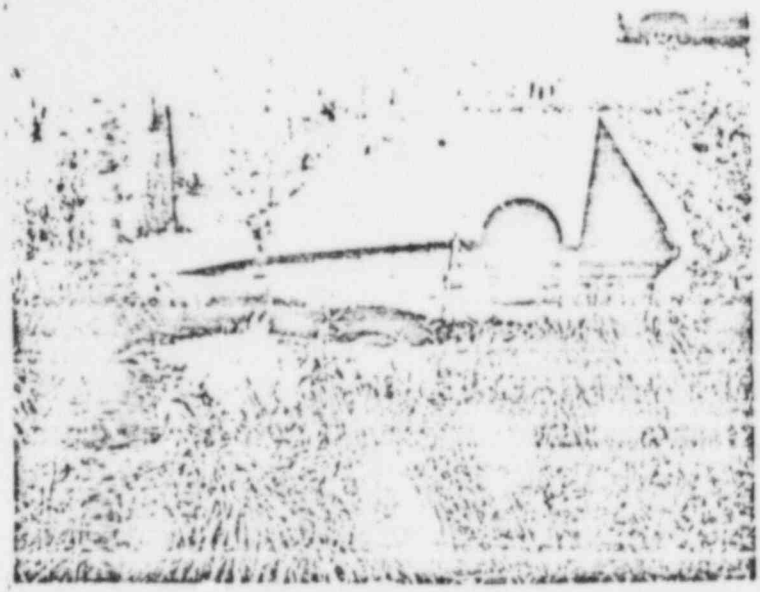


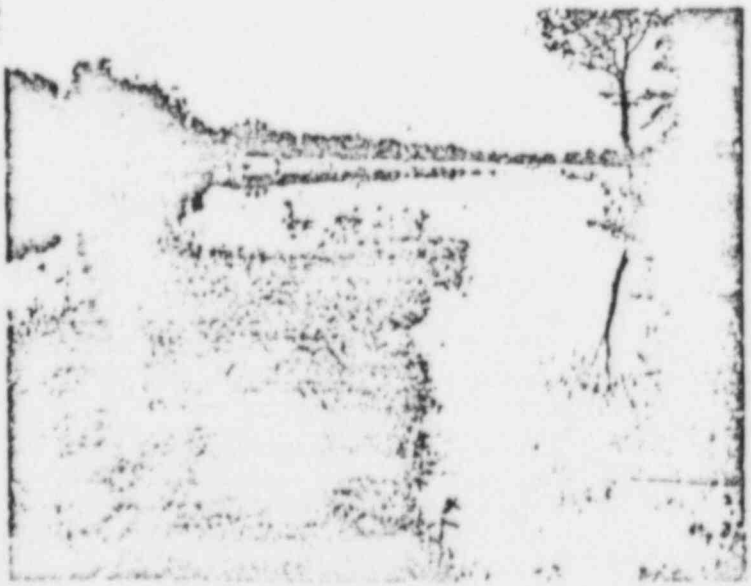
EXHIBIT SF II

41

PHOTOGRAPHS OF SURFACE EFFLUENT
STREAM DISCHARGING INTO THE ILLINOIS RIVER
SEQUOYAH COUNTY, OKLAHOMA



Detail "A"
View Looking North at Sequoyah
Facility Outfall Structure



DETAIL "B"
View Looking Northwest from
Watercourse Discharge
Into the Illinois River

Facility Effluent Discharge:
Flows into the natural watercourse which discharges into the Illinois River.

Concrete Outfall Structure Location
2600 feet north and 1100 feet west of the southeast corner of Section 21, Range 21E and Township 12N, Sequoyah County, Oklahoma.

Outfall Structure Size:
Concrete dike is 14 feet wide by 2[illegible] feet long and supplied by a 42-inch diameter drain pipe.

Effluent Stream Discharge Location
3140 feet north and 3700 feet west of the southeast corner of Section 21, Range 21E and Township 12N, Sequoyah County, Oklahoma.

EXHIBIT SF-II

KERR-McGEE CORPORATION
Sequoyah Facility

Effluent Structure and
Watercourse Discharge

KERR-McGEE CORPORATION
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

GEORGE B. PARKS
EXECUTIVE VICE PRESIDENT

May 11, 1971

Oklahoma Water Resources Board
Dialex Building
2241 Northwest 40th Street
Oklahoma City, Oklahoma 73112

Attention: Mr. Glenn H. Sullivan
Assistant Director

Gentlemen:

Subject: State Certification of Water Discharge from the Sequoyah Facility

So that we may obtain a Permit from the Corps of Engineers to make discharges from our Sequoyah Facility into the Illinois River, please provide us a certification that the discharge approved by the Oklahoma Waste Disposal Permit No. IW-70-011 complies with the applicable Oklahoma Water Quality Standards.

Our permit application to the Corps of Engineers for the Sequoyah Facility discharge will be filed by July 1, 1971, and we would appreciate timely receipt of the Oklahoma water quality certification for attachment to the application.

Please advise if you need any additional information from us to issue the State certification.

Yours very truly,

George B. Parks

GBP:km

EXHIBIT SF-

FORREST NELSON, Executive Director

GEW

OKLAHOMA WATER RESOURCES BOARD
DIALEX BUILDING • 2241 N.W. 40TH STREET • OKLAHOMA CITY • OKLAHOMA • 73112

May 28, 1971

Mr. George B. Parks
Executive Vice President
Kerr-McGee Corporation
Kerr-McGee Building
Oklahoma City, Oklahoma 73102

Dear Mr. Parks:

With reference to your letter of May 11, 1971, concerning the Corps of Engineers discharge permit, we will provide you with the necessary certification for this permit only after we have reviewed the application. You may send your permit application directly to the Corps of Engineers, who will in turn send us a copy, or you may send us a copy which may speed up the process of State certification.

After we have reviewed your permit we will provide you with the certification as rapidly as possible, however, once you have made application for a Corps of Engineers permit, we have six (6) months time to provide you with the proper certification.

If you have any questions concerning this matter please do not hesitate to contact me.

Sincerely,

Harry A. Hansen

Harry A. Hansen
Environmental Planning Scientist

HAH/ph

EXHIBIT SF-

KERR-McGEE CORPORATION
SEQUOYAH FACILITY

ITEM 21 - Description of Waste Abatement Practices

The activities of the Sequoyah Facility provide for three separate and distinct waste streams involving different waste abatement practices which are described below. There is, however, only one facility discharge and it is a combined stream of the treated fluoride process waste, the sanitary basin outfall and the plant cooling water with any excess intake. This combined facility effluent is released by surface discharge to a natural watercourse or drainage stream which flows and discharges to the Illinois River.

The pollution abatement practices for the facility waste discharge include:

Facility Discharge (Serial No. 001) - Waste streams are the sanitary outfall and the treated fluoride process waste combined with cooling water and excess intake effluents.

1. Sanitary Waste is collected in a stabilization basin and the outfall is combined with the facility effluent prior to surface discharge.
   ESGRE, BSTABI, WDISCH.

2. Fluoride Waste (primarily waste liquor collected from the HF waste gas scrubber). The waste is neutralized by lime treatment. Flocculation and sedimentation occurs in a retention sludge pit and clarification is achieved in a retention lagoon. The clarified treated waste overflows and is combined with the facility effluent prior to surface discharge.
   ESEGRE, EPUMPS, DCHANG, RECYCL, OOTHER, RECOVE, RUSEOR, CNEUTR, CCOAGU, PSEDIM, SLAGOO, TSDEIM, WDISCH.

6/21/71

EXHIBIT SF-V

Kerr-McGee Corporation

SEQUOYAH FACILITY

REMARKS - Descriptions of Sample Frequency and Methods of Analysis.

ITEM 22, Column (6)

OTHR (1) - Flow generally on facility design basis.
OTHR (2) - pH - 30-day average.
OTHR (3) - Temperature - estimate based on data of six-month pre-operational environmental survey.

PART A

Column (4) - Based on process unit as 40,000 pounds UF_6 per day.

Column (9) - SAMPLE FREQUENCY:

OTHR (1) Grab samples
OTHR (2) Grab samples
OTHR (3) Average of biweekly grab samples for six weeks.

Column (10) - All tests by: Standard methods for the Examination of Water and Wastewaters, 12th Edition, 1965, except as noted:

OTHR (1) Std. Methods, 12th Edition, p. 392, Sec. 43.
OTHR (2) " " " " p. 402-404.
OTHR (3) " " " " Method B.

EXHIBIT SF-VII

KERR-McGEE
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

October 4, 1971

District Engineer
U. S. Army Corps of Engineers
P. O. Box 61
Tulsa, Oklahoma 74102

Re: Discharge Permit Application
OK 076 0Y1 2 000111
Discharge Serial No. 001

Dear Sir:

Forwarded herewith is part B of the above captioned water discharge permit application covering the Kerr-McGee Corporation Sequoyah facility at Gore, Oklahoma, together with certification statement.

Please contact me for permit application coordination and additional information that you may need.

Sincerely,

TLH

T. L. Hurst
Director of Environmental Services

TLH:jl
Enclosures 2

bcc: W. J. Shelley
G. E. Wuller

PART B DISCHARGE DESCRIPTION

(Note: Submission of Part B is required of all applicants who are also required to submit Part A. Only those parameters specifically indicated in the instructions are to be reported by a particular industry)

(Office use only)

Kerr-McGee Corp., Sequoyah Facility
Permit Application No. OK-076-0Y12-000111

Discharge Serial No. 001

B-1. PHYSICAL AND BIOLOGICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-1)

	Intake	Discharge					
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	AVERAGE (DAILY) (3)	MINIMUM (OPERATING YEAR) (4)	MAXIMUM (OPERATING YEAR) (5)	SAMPLE FREQUENCY (6)	CONTINUOUS MONITORING (7)
COLOR 00080	W	-	-	X	-	-	-
SPECIFIC CONDUCTANCE 00095							
TURBIDITY 00070	6	6	6	X	40	M	A
FECAL STREPTOCOCCI BACTERIA 74054				X			
FECAL COLIFORM BACTERIA 74055				X			
TOTAL COLIFORM BACTERIA 74056				X			

PART B

Kerr-McGee Corporation
Sequoyah Facility
Permit Application No. OK-076-0Y12-000111

(Office use only)

Discharge Serial No. 001

B-2. CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake		Discharge									
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING
ACIDITY (as $CaCO_3$) 00435											
TOTAL ORGANIC CARBON (T.O.C.) 00680	1.7	0.7	2.0	0.001	42	1.0	19	A	M	W	
TOTAL HARDNESS 00900	89	<1	100	0.049	2086	78	1464	A	M	S	
NITRITE (as N) 00615											
ORGANIC NITROGEN 00605											
PHOSPHORUS-ORTHO (as P) 70507	<0.1	<0.1	<0.1	<0.0001	<2	<0.1	<2	A	M	S	
SULFATE 00945	6.0	6.0	16.0	0.008	333	12	250	A	M	S	
SULFIDE 00745	A	A	A			A		A	M	S	
SULFITE 00740											
BROMIDE 71870											

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JUN 71

PART B

(Office use only)

Kerr-McGee Corporation
Sequoyah Facility
Permit Application No. OK-076-0Y12-000111

Discharge Serial No. 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

	Intake		Discharge								
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION PER PROCESS UNIT (3)	MAXIMUM POUNDS PER DAY (4)	DAILY AVG. CONCENTRATION (5)	AVERAGE POUNDS PER DAY (6)	SAMPLE FREQUENCY (7)	METHOD OF ANALYSIS (8)	CONTINUOUS MONITORING (9)	(10)	(11)
CHLORIDE 00940 *	5	9	8	0.004	167	6	113	A	M	O	A
CYANIDE 00720	A	A	A			A		A	M	W	A
FLUORIDE 00951	<0.10	<0.10	4.0	0.002	83	1.54	29	A	D	W	A
ALUMINUM-TOTAL 01105 *	85	85	100	<0.0001	2	85	2	A	M	O	A
ANTIMONY-TOTAL 01097											
ARSENIC-TOTAL 01002 *	A	A	A			A		A	M	O	A
BARIUM-TOTAL 01007											
BERYLLIUM-TOTAL 01012											
BORON-TOTAL 01022											
CADMIUM-TOTAL 01027 *	A	A	A			A		A	M	O	A

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PART B

(Office use only)

Kerr-McGee Corporation
Sequoyah Facility
Permit Application No. OK-076-0Y12-000111

Discharge Serial No. 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

	Intake		Discharge									
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING (11)
CALCIUM-TOTAL 00916	32	<1	36	0.017	751	34	638	A	M	W	A
CHROMIUM-TOTAL 01034 *	A	A	A			A		A	M	O	A
COBALT-TOTAL 01037											
COPPER-TOTAL 01042											
IRON-TOTAL 01045 *	0.85	0.85	2.0	0.001	42	1.0	19	A	M	O	A
LEAD-TOTAL 01051 *	A	A	A			A		A	M	O	A
MAGNESIUM-TOTAL 00927	2	<1	2	0.001	42	2	42	A	M	W	A
MANGANESE-TOTAL 01055											
MERCURY-TOTAL 71900	A	A	A			A		A	M	W	A
MOLYBDENUM-TOTAL 01062											

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JUN 71

PART B

(Office use only)

Kerr-McGee Corporation
Sequoyah Facility
Permit Application No. OK-076-0Y12-000111

Discharge Serial No. 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

	Intake		Discharge									
PARAMETER AND CODE	(1) UNTREATED INTAKE WATER	(2) TREATED INTAKE WATER	(3) MAXIMUM CONCENTRATION	(4) MAXIMUM POUNDS PER DAY PER PROCESS UNIT	(5) MAXIMUM POUNDS PER DAY	(6) DAILY AVG. CONCENTRATION	(7) AVERAGE POUNDS PER DAY	(8) SAMPLE TYPE	(9) SAMPLE FREQUENCY	(10) METHOD OF ANALYSIS	(11) CONTINUOUS MONITORING	
NICKEL-TOTAL 01067												
POTASSIUM-TOTAL 00937	1	1	1	0.0005	21	1	19	A	M	W	A	
SELENIUM-TOTAL 01147												
SILVER-TOTAL 01077												
SODIUM-TOTAL 00929	3	44	6	0.003	125	5	94	A	M	W	A	
THALLIUM-TOTAL 01059												
TIN-TOTAL 01102												
TITANIUM-TOTAL 01152	A	A	A			A		A	M	W	A	
ZINC-TOTAL 01092	A	A	A			A		A	M	W	A	
OIL AND GREASE 00550												

PART B

(Office use only)

Kerr-McGee Corporation
Sequoyah Facility
Permit Application No. OK-076-0Y12-000111

Discharge Serial No. 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake		Discharge										
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING (11)
PHENOLS 32730	A	A	A			A		A	M	W	A
SURFACTANTS 38260											
ALGICIDES* 74051											
CHLORINATED HYDRO-CARBONS* (EXCEPT PESTICIDES) 74052											
PESTICIDES* 74053											

*Name specific compound(s) and fill in the required data for each. Use extra blanks at the end of the form and the "Remarks" space as necessary.

Iron - Reported in mg/liter
Chloride - Method of analysis - Standard method, 12 Ed. Method A.
Al, As, Cd, Cr, Fe, Pb - Method of Analysis - Total solids, as a sulfated ash, are dried with graphite buffer. Impurities determined by comparison with standards prepared in the same matrex and sample and standards compared by arc spectrographic analysis.

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PART B

(Office use only)

Kerr-McGee Corporation
Sequoyah Facility
Permit Application No. OK-076-0Y12-000111

Discharge Serial No. 001

B-3. RADIOACTIVE PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-3)

Intake		Discharge **						
PARAMETER AND CODE	UNTREATED INTAKE WATER * (1)	TREATED INTAKE WATER * (2)	AVERAGE (DAILY) (3)	MINIMUM (OPERATING YEAR) (4)	MAXIMUM (OPERATING YEAR) (5)	SAMPLE FREQUENCY (6)	CONTINUOUS MONITORING (7)
ALPHA-TOTAL 01501	42	42	229	X	482	M	A
ALPHA COUNTING ERROR 01502	±2.1	±2.1	±11	X	±24	-	-
BETA-TOTAL 03501	66	66	387	X	803	M	A
BETA COUNTING ERROR 03502	±3.3	±3.3	±19	X	±40	-	-
GAMMA-TOTAL 05501	-	-	387	X	803	M	A
GAMMA COUNTING ERROR 05502	-	-	±19	X	±40	-	-
TRITIUM-TOTAL 07000				X			
TRITIUM COUNTING ERROR 07001				X			

B-4. REMARKS

*Intake - based on 9 monthly samples taken during 1970 (Jan.-Dec.). Treat intake water not analyzed; reasonably assumed unchanged in radioactivity.

**Discharge - based on 8 samples taken during 1970 (May-Dec.). Actual gas counting not done; assumed 1:1 ratio beta to gamma for natural uranium.

ENG FORM 4345-1 JUN 71

KERR-McGEE CORPORATION
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

Discharge Permit Application No. OK 076 0Y1 2 000111

Discharge Serial No. 001

I certify that I am familiar with the information contained in the attached form B and that to the best of my knowledge and belief, such information is true, complete and accurate.

George H. Cobb
Executive Vice President

GHC:jl
Attachment

KERR-McGEE
KERR McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

February 14, 1973

Environmental Protection Agency
Region VI
1600 Patterson, Suite 1100
Dallas, Texas 75201

Attention: Mr. Thomas Voltaggio

Dear Sir:

In accordance with your discussion with Mr. Brown and others at the Sequoyah Facility, we have revised certain portions of our "Application for Permit to Discharge". These changes are caused by refined measurements and additional data generated since our initial submission in June 1971.

Sincerely,

W. J. Shelley

W. J. Shelley, Director
Regulation and Control
Nuclear Division

WJS:srj
Enclosure

cc: T. L. Hurst
B. E. Brown

PHYSICAL DESCRIPTION OF INTAKE WATER AND DISCHARGE

Intake / Discharge | (Office use only)

Discharge Serial No. 001

Parameter and (Code)	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	AVERAGE (DAILY) (3)	MINIMUM (OPERATING YEAR) (4)	MAXIMUM (OPERATING YEAR) (5)	SAMPLE FREQUENCY (6)	CONTINUOUS MONITORING (7)
Flow (Gallons per day) 00056	2,300,000	300,000	2,250,000	1,500,000	2,500,000	OTHR (1)	ABS
pH 00400	6.7-8.1	-6.7-8.1	8.7	5.5	10.5	OTHR (2)	ABS
Temperature (Winter) (°F) 74028	43	48	52	43	65	OTHR (3)	ABS
Temperature (Summer) (°F) 74027	63	68	57	55	78	OTHR (3)	ABS

23. DISCHARGE CONTENTS

PARAMETER	PRESENT	ABSENT	PARAMETER	PRESENT	ABSENT	PARAMETER	PRESENT
Color 00080	X		Aluminum 01105	X		Nickel 01067	
Turbidity 00070	X		Antimony 01097		X	Selenium 01147	
Radioactivity 74050	X		Arsenic 01002		X	Silver 01077	
Hardness 00900	X		Beryllium 01012		X	Potassium 00937	?
Solids 00500	X		Barium 01007	X		Sodium 00929	?
Ammonia 00610	X		Boron 01022		X	Titanium 01152	
Organic Nitrogen 00605		X	Cadmium 01027		X	Tin 01102	
Nitrate 00620	X		Calcium 00916	X		Zinc 01092	X
Nitrite 00615		X	Cobalt 01037		X	Algicides 74051	
Phosphorus 00665	X		Chromium 01034		X	Oil and Grease 00550	
Sulfate 00945	X		Copper 01042		X	Phenols 32730	
Sulfide 00745		X	Iron 01045	X		Surfactants 38260	
Sulfite 00740		X	Lead 01051		X	Chlorinated Hydrocarbons 74052	
Bromide 71870		X	Magnesium 00927	X		Pesticides 74053	
Chloride 00940	X		Manganese 01055	X		Fecal Streptococci Bacteria 74054	
Cyanide 00720		X	Mercury 71900		X	Coliform Bacteria 74056	
Fluoride 00951	X		Molybdenum 01062		X		

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PART A

(Note: Submission of Part A is required of all applicants whose processes are listed on page 3 above.)

(Office use only)

Discharge Serial No. 001

INFORMATION REQUIRED OF SPECIFIED INDUSTRIES

Intake	Discharge										
PARAMETER AND CODE	(DAILY AVG. CONCENTRATION) UNTREATED INTAKE WATER (1)	(DAILY AVG. CONCENTRATION) TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	DAILY AVG. CONCENTRATION (5)	AVERAGE POUNDS PER DAY (6)	SAMPLE TYPE (7)	SAMPLE FREQUENCY (8)	METHOD OF ANALYSIS (9)	CONTINUOUS MONITORING (10)	(11)
ALKALINITY (as $CaCO_3$) 00410	73-94	75	174	0.09	3628	99	1651	Aver	Othr (1)	1	ABS
B.O.D. 5-DAY 00310	2	1	10	.005	208	2	32	Aver	Othr (2)	1	ABS
CHEMICAL OXYGEN DEMAND (C.O.D.) 00340	10	10	20	0.01	417	10	167	Aver	Othr (1)	1	ABS
TOTAL SOLIDS 00500	138	140	250	0.13	5212	235	3920	Aver	Othr (1)	1	AB
TOTAL DISSOLVED SOLIDS 70300	137	140	249	0.13	5192	232	3870	Aver	Othr (1)	1	AB
TOTAL SUSPENDED SOLIDS 00530	6	1	85	0.04	1772	20	334	Aver	Othr (1)	1	AB
TOTAL VOLATILE SOLIDS 00505	50	50	95	.05	1980	50	834	Aver	Othr (2)	1	AB
AMMONIA (as N) 00610	1.4	<1	1.1	<.001	23	<1	16	Aver	Othr (3)	Othr (1)	AB
KJELDAHL NITROGEN 00625	1.3	<1	1.2	<.001	25	<1	16	Aver	Othr (2)	Othr (2)	AB
NITRATE (as N) 00620	0.57	.6	40	0.02	834	3.5	58	Aver	Othr (3)	Othr (3)	AB
PHOSPHORUS TOTAL (as P) 00665	0.04	0.04	0.50	<.001	10	0.3	5	Aver	Othr (3)	1	AB

PART B DISCHARGE DESCRIPTION

(Note: Submission of Part B is required of all applicants who are also required to submit Part A. Only those parameters specifically indicated in the instructions are to be reported by a particular industry)

(Office use only)

Discharge Serial No. 001

B-1. PHYSICAL AND BIOLOGICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-1)

	Intake	Discharge						
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	AVERAGE (DAILY) (3)	MINIMUM (OPERATING YEAR) (4)	MAXIMUM (OPERATING YEAR) (5)	SAMPLE FREQUENCY (6)	CONTINUOUS MONITORING (7)
COLOR 00080	25	-	15	X	30	-	-
SPECIFIC CONDUCTANCE 00095							
TURBIDITY 00070	7	7	8	X	40	M	A
FECAL STREPTOCOCCI BACTERIA 74054				X			
FECAL COLIFORM BACTERIA 74055				X			
TOTAL COLIFORM BACTERIA 74056				X			

PART B

(Office use only)

Discharge Serial No. 001

B-2. CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake		Discharge									
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING
ACIDITY (as $CaCO_3$) 00435 mg/L											
TOTAL ORGANIC CARBON (T.O.C.) 00680	1.7	0.7	2.0	0.001	42	1.0	19	A	M	W	
TOTAL HARDNESS 00900	89	<1	165	0.086	3442	110	2072	A	M	S	
NITRITE (as N) 00615											
ORGANIC NITROGEN 00605											
PHOSPHORUS-ORTHO (as P) 70507	<0.1	<0.1	<0.1	<0.0001	<2	<0.1	<2	A	M	S	
SULFATE 00945	6.6	6.0	34	0.018	709	16	301	A	M	S	
SULFIDE 00745	<0.1	<0.1	<0.1	<.0001	<2	<0.1	<2	A	M	S	
SULFITE 00740											
BROMIDE 71870											

PART B

(Office use only)

Discharge Serial No. 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

	Intake		Discharge									
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION PER PROCESS UNIT (3)	MAXIMUM POUNDS PER DAY (4)	DAILY AVG. CONCENTRATION (5)	AVERAGE POUNDS PER DAY (6)	SAMPLE TYPE / SAMPLE FREQUENCY (7)	METHOD OF ANALYSIS (8)	CONTINUOUS MONITORING (9)	(10)	(11)
CHLORIDE 00940 mg/l	5	9	500 B	0.028	1100	50	750	A	M	O	A
CYANIDE 00720 "	A	A	A			A		A	M	W	A
FLUORIDE 00951 "	0.1	<0.10	10 A	0.005	209	1.54	29	A	D	W	A
ALUMINUM-TOTAL 01105 µg/l	180	85	900 100	0.0004	14	400	8	A	M	O	A
ANTIMONY-TOTAL 01097 "											
ARSENIC-TOTAL 01002 "	<50	A	A			A		A	M	O	A
BARIUM-TOTAL 01007 "	100		300	0.0002	6	125	2				
BERYLLIUM-TOTAL 01012 "											
BORON-TOTAL 01022 "											
CADMIUM-TOTAL 01027 "	<10	A	<10 A	<.0001	<1	<10		A	M	O	A

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PART B

(Office use only)

Discharge Serial No. 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake			Discharge								
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION PER PROCESS UNIT (3)	MAXIMUM POUNDS PER DAY (4)	DAILY AVG. CONCENTRATION (5)	AVERAGE POUNDS PER DAY (6)	SAMPLE TYPE (7)	SAMPLE FREQUENCY (8)	METHOD OF ANALYSIS (9)	CONTINUOUS MONITORING (10)	(11)
CALCIUM-TOTAL 00916 mg/l	32	<1	70 36	0.036	1460	46	866	A	M	W	A
CHROMIUM-TOTAL 01034 µg/l	75	A	130 A	<.0001	3	60	1	A	M	O	A
COBALT-TOTAL 01037											
COPPER-TOTAL 01042	33		120 —	<.0001	3	90	2				
IRON-TOTAL 01045	0.85	0.85	2.0 20	0.001	42	1.0	19	A	M	O	A
LEAD-TOTAL 01051	<10	A	<10 A	<.0001		<10		A	M	O	A
MAGNESIUM-TOTAL 00927 mg/l	2	<1	2 2	0.001	42	2	42	A	M	W	A
MANGANESE-TOTAL 01055 µg/l	20-3300		5800 —	0.003	120	1300	24				
MERCURY-TOTAL 71900	<1	A	<1 A	<0.1		<1		A	M	W	A
MOLYBDENUM-TOTAL 01062											

PART B

(Office use only)

Discharge Serial No. 001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake		Discharge										
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING (11)
NICKEL-TOTAL 01067											
POTASSIUM-TOTAL 00937	1	1	1	0.0005	21	1	19	A	M	W	A
SELENIUM-TOTAL 01147											
SILVER-TOTAL 01077											
SODIUM-TOTAL 00929	3	44	400	0.018	700	35	525	A	M	W	A
THALLIUM-TOTAL 01059											
TIN-TOTAL 01102	<10-700		100	<.0001	2	40	1				
TITANIUM-TOTAL 01152	<10	A	<10	<.0001	<1	<10	<1	A	M	W	A
ZINC-TOTAL 01092	A	A	120	<.0001	3	40	1	A	M	W	A
OIL AND GREASE 00550											

PART B

(Office use only)

Discharge Serial No.
001

B-2. (cont.) CHEMICAL PARAMETERS OF INTAKE WATER AND DISCHARGE (See Table B-2)

Intake		Discharge										
PARAMETER AND CODE	UNTREATED INTAKE WATER (1)	TREATED INTAKE WATER (2)	MAXIMUM CONCENTRATION (3)	MAXIMUM POUNDS PER DAY PER PROCESS UNIT (4)	MAXIMUM POUNDS PER DAY (5)	DAILY AVG. CONCENTRATION (6)	AVERAGE POUNDS PER DAY (7)	SAMPLE TYPE (8)	SAMPLE FREQUENCY (9)	METHOD OF ANALYSIS (10)	CONTINUOUS MONITORING	
PHENOLS 32730	<4	<4	<4			<4		A	M	W		
SURFACTANTS 38260												
ALGICIDES* 74051	Biocide 286, Drew Chemical Co., 1 gallon/week Methylene Bisthiocyanate Completely biodegradable according to vendor											
CHLORINATED HYDROCARBONS* (EXCEPT PESTICIDES) 74052												
PESTICIDES* 74053												

*Name specific compound(s) and fill in the required data for each. Use extra blanks at the end of the form and the "Remarks" space as necessary.

Iron - Reported in mg/liter
Chloride - Method of analysis - Standard method, 12 Ed. Method A.
Al, As, Cd, Cr, Fe, Pb - Method of Analysis - Total solids, as a sulfate ash, are mixed with graphite buffer. Impurities determined by comparison with standards prepared in the same matrex and sample and standards compared by arc spectrographic analysis.

☆U. S. GOVERNMENT PRINTING OFFICE: 1972 – 461

FROM: Kerr-McGee Corporation Oklahoma City, OK 73102 Parker S. Dunn	DATE OF DOCUMENT Jan 18, 1973	DATE RECEIVED Feb 16, 1973	NO.: 1124
	LTR.: X	MEMO:	REPORT:	OTHER: X
TO: Mr. Rothfleisch	ORIG.: X	CC:	OTHER: X
	ACTION NECESSARY ☐ NO ACTION NECESSARY ☐	CONCURRENCE ☐ COMMENT ☐	DATE ANSWERED: BY:
CLASSIF: UNCLAS POST OFFICE REG. NO:	FILE CODE: DOCKET NO: 40-8027		

DESCRIPTION: (Must Be Unclassified)

Ltr transmitting Environmental Supplemantal #2, dtd December 1972

ENCLOSURES:

Environmental Supplement #2

195 cys. rec'd 2-16-73

*Denotes: Advance Copy provided to Rothfeisch

REMARKS:

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U.S. ATOMIC ENERGY COMMISSION MAIL CONTROL FORM FORM AEC-326S (8-60)

Report and letter in Reports file.

DOCKET NO. 40-8027

KERR-McGEE CORPORATION
KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73102

January 18, 1973

U.S. Atomic Energy Commission
ATTN: Mr. J. E. Rothfleisch
Materials Branch
Directorate of Licensing
Washington, D. C. 20545

Dear Mr. Rothfleisch:

Please refer to your letter of December 6 raising certain questions or requesting additional information in regard to our Revised Environmental Report of November 1971 and our Supplemental Environmental Report of June 1972.

The questions raised have been answered and additional detailed data or explanation furnished in the attached Environmental Report-Supplemental #2 dated December 1972. In accordance with our discussion, the report is answered in the order of your questions and additional information included immediately thereafter where appropriate. In some cases your questions have coincided with those of others who have examined these reports and, if one answer covers both subjects, appropriate reference will be made.

In accordance with our previous arrangement, I have included five copies of the report and am shipping to you separately the balance of 195 copies for your distribution. We would be pleased to discuss all or part of this report at your convenience.

Sincerely,

Parker S. Dunn

Parker S. Dunn
Group Vice President
Nuclear Operations

PSD:WJS:srj
Enclosures

2pp

1124