



KIRBY EXPLORATION COMPANY OF TEXAS

November 10, 1986

U.S. Dept. of the Interior  
Bureau of Land Management  
Caller Service 4104  
Farmington, New Mexico 87499

Attn: Mr. Jim Lovato

Re: Boling Federal No. 9-22  
Sec 22-T19N-R3W  
Sandoval County, NM

Dear Mr. Lovato:

This letter is to serve as "Proof of Notice" to the Bureau of Land Management, as surface owner of the land on which the subject well is located, that Kirby Exploration Company of Texas is applying for Authorization to Inject (dispose) water in the same well. A copy of the application with all attachments is attached for your files.

If you have any questions, please give me a call.

Respectfully yours,

Judi Nelson  
Regulatory Clerk

attach.

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage  
Application qualifies for administrative approval? ☐ yes ☒ no
- II. Operator: Kirby Exploration Company of Texas  
Address: P. O. Box 1745, Houston, Texas 77251  
Contact party: Judi Nelson Phone: 713/629-9370
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ yes ☒ no  
If yes, give the Division order number authorizing the project \_\_\_\_\_.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- \* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- \* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Judi Nelson Title: Regulatory Clerk  
Signature: *Judi Nelson* Date: 11-10-86
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

## III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

## XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

## \*\* SEE BELOW

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

\*\* KIRBY EXPLORATION COMPANY OF TEXAS OPERATES ALL WELLS WITH IN A 1/2 MILE RADIUS. THE BUREAU OF LAND MANAGEMENT IS THE SURFACE OWNER, A COPY OF THE CERTIFIED NOTICE IS ATTACHED.

APPLICATION FOR AUTHORIZATION TO INJECT  
KIRBY EXPLORATION COMPANY OF TEXAS  
BOLING FEDERAL NO. 9-22  
SANDOVAL COUNTY, NEW MEXICO

SECTION VII: PROPOSED OPERATIONS

1. Average and maximum daily rate and volume of fluids to be injected will be +2000 bbls.
2. The system will be closed.
3. Average pressure will be 100 psig, with a maximum injection pressure of 1500 psig.
4. The source will be reinjected produced water.
5. Question 5 is not applicable.

SECTION VIII: GEOLOGICAL DATA

The proposed injection zone is through perforations from 5330'-5334' in the top of the Jurassic Todilto limestone. The Todilto is a 20' thick grey to dark brown very finely crystalline shaley limestone containing abundant organic material. The Todilto is highly fractured and most of the injected fluids will be forced into the underlying Jurassic Entrada sandstone which is currently being utilized for injection in several other wells within 1-1/2 miles of the subject well. The Entrada is a very fine to medium grained calcareous sand with 8-20% porosity and exceeds 100' in thickness.

The geologic name and depth to sources of drinking water are not known. However, as Entrada formation water is currently being injected into the Gallup as shallow as 2894' and no fresh water sands either immediately overlying or underlying the Entrada it is safe to assume that further injection into the Todilto-Entrada will have no adverse affect on sources of drinking water.

SECTION IX: PROPOSED STIMULATION PROGRAM

1. 1500 gallons of 15% HCL acid.

SECTION X: LOGS AND TEST DATA

1. The logs with a letter of confidentiality have been previously submitted.

UNIOCHEM INCORPORATED

707 NORTH LEECH

ALBUQUERQUE, NEW MEXICO 87102

HOBBS, NEW MEXICO 88240

COMPANY : KIRBY EXPLORATION  
DATE : 10-30-86  
FIELD, LEASE/WELL : MEDIA MESA  
SAMPLING POINT: WATER WELL  
DATE SAMPLED : 10-24-86

SPECIFIC GRAVITY = 1  
TOTAL DISSOLVED SOLIDS = 977  
PH = 7.1

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	7.4	149.
MAGNESIUM	(MG)+2	5.1	62.3
SODIUM	(NA), CALC.	2.3	54.2
ANIONS			
BICARBONATE	(HCO3)-1	1.2	73.2
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	11.7	565
CHLORIDES	(CL)-1	2	73
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)	NOT RUN	
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)	NOT RUN	

IONIC STRENGTH (MOLAL) = .027

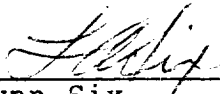
SCALING INDEX	TEMP
	30C 48.60
	86F 120F
CARBONATE INDEX	.506 .909
CALCIUM CARBONATE SCALING	LIKELY LIKELY
CALCIUM SULFATE INDEX	-10. -10.
CALCIUM SULFATE SCALING	UNLIKELY UNLIKELY

ATTACHMENT FOR APPLICATION FOR AUTHORIZATION TO INJECT  
KIRBY EXPLORATION COMPANY OF TEXAS  
BOLING FEDERAL NO. 9-22, SANDOVAL COUNTY, NEW MEXICO  
SECTION XI

APPLICATION FOR AUTHORIZATION TO INJECT  
KIRBY EXPLORATION COMPANY OF TEXAS  
BOLING FEDERAL NO. 9-22  
SANDOVAL COUNTY, NEW MEXICO

SECTION XII: AFFIRMATIVE STATEMENT

As a contract geologist for Kirby Exploration Company of Texas, the applicant, I have examined the available geologic and engineering data on the subject well and have found no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

  
\_\_\_\_\_  
Lynn Six

P 462 729 553

RECEIPT FOR CERTIFIED MAIL

FOR MAILING TO THE UNITED STATES  
OR TO A FOREIGN COUNTRY  
(See Reverse)

Bureau of Land Management

Caller Service 4104

Farmington, NM 87499

Postage

Insured Fee

Signature of Addressee

Date of Delivery

Signature of Agent

Date of Delivery

Signature of Addressee

Date of Delivery

11-10-86

P 462 729 553

PS Form 3811, July 1983

<b>SENDER: Complete items 1, 2, 3 and 4.</b> Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. <u>The return receipt fee will provide you the name of the person delivered to and the date of delivery.</u> For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.	
1. <input checked="" type="checkbox"/> Show to whom, date and address of delivery.	
2. <input type="checkbox"/> Restricted Delivery.	
3. Article Addressed to: Bureau of Land Management Attn: Mr. Jim Lovato Caller Service 4104 Farmington, New Mexico 87499	
4. Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	Article Number P462-729-553
Always obtain signature of addressee <u>or</u> agent and <b>DATE DELIVERED.</b>	
5. Signature — Addressee X	
6. Signature — Agent X	
7. Date of Delivery	
8. Addressee's Address ( <i>ONLY if requested and fee paid</i> )	

DOMESTIC RETURN RECEIPT