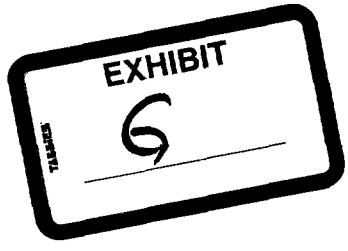
WEST CORBIN DELAWARE UNIT
RESERVOIR DATA

Average Depth	5000'
Average Porosity	12%
Porosity Range	8-16%
Average Water Saturation	39%
Water Saturation Range	21-60%
Average Permeability	1 md
Permeability Range	0.1-30 md
Bottom Hole Temperature	113° F
Initial Bottom Hole Pressure	1,924 psi
Current Bottom Hole Pressure	est 1000 psi
Original Oil in Place (OOIP)	2.83 MMBO
Reservoir Volume Factor (Boi)	1.217
Bubble Point Pressure	1,719 psi
Oil Gravity, API @ 60° F	37.0°
Gas Specific Gravity	0.946
Solution Gas/Oil Ratio (GOR)	516 SCF/bbl
Producing Gas/Oil Ratio (GOR)	633 SCF/bbl
Cumulative Production to 5/1/98	795 MBO
	759 MMCF
Recovery Factor to Date, 5/1/98	18.7%
Oil/Water Contacts, Subsea	
YZ Sand- Lower Member	-1110'
A Sand- Upper Member	-1172'
A Sand- Lower Member	-1190'
B Sand	-1215'
Total Acres	646 ac



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

2040 Pacheco St.
Santa Fe, Nm 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☒ no

II. Operator: BURLINGTON RESOURCES OIL & GAS COMPANY

Address: P.O. Box 51810 Midland, TX 79710-1810

Contact Party: MARIA L. PEREZ Phone: 915-688-6906

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/1 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 text data on the well. (If well logs have been filed with the Division they need not be submitted.)

* 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: MARIA L. PEREZ Title: REGULATORY REPRESENTATIVE

Signature: Maria L. Perez Date: 7-31-98

If the information required under Section 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. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

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.

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.

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.

APPLICATION FOR AUTHORIZATION TO INJECT
Burlington Resources Oil & Gas Company

I. See FORM C-108

II. See FORM C-108.

III. Well Data:

1. Lease Name, Well Number and Location:

Corbin Delaware Federal Unit #4 (API# 30-025-25448)
UL-J, 2310' FSL & 2310' FEL
Section 18, T18S, R33E
Eddy County, New Mexico

Corbin Delaware Federal Unit #6 (API# 30-025-30430)
UL-E, 2076' FNL & 411' FWL
Section 17, T18S, R33E
Eddy County, New Mexico

Corbin Delaware Federal Unit #22 (API# 30-025-30860)
UL-F, 1980' FNL & 1780' FWL
Sec. 18, T18S, R33E
Eddy County, New Mexico

2. Casing and Cementing: See the attached Injection Well Data Sheets and the current and proposed Wellbore Schematics for each well.

IV. See FORM C-108

V. Maps

1. See the attached map that identifies all wells and leases within a two miles radius of the proposed injection wells.

2. See the attached map with a one-half mile radius circle drawn around each proposed injector.

VI. Tabulation of Data

1. See the attached spreadsheet showing the tabulated data on all wells of public record within the one-half mile radius area of review from each of the proposed injectors.

VII. Data on the proposed operation

1. The proposed average daily injection volume is 500 BWPD/well. The proposed maximum daily injection volume will be 1,000 BWPD/well

2. This will be a closed system.

3. The proposed average daily injection pressure will be 500 psi. The proposed maximum daily injection pressure will be 1,500 psi.

4. The sources of injection water will be produced water from the area Delaware, Wolfcamp and Bone Spring wells.

5. A water analysis from nearby Delaware, Wolfcamp, and Bone Spring production is attached. A careful study done by Martin Water Laboratories, Inc., of the characteristics of all the waters involved, reveals no evidence of any incompatibility between any combination of these waters. There should be no precipitation or scaling potential that would result from combining any of these waters.

The following are the reservoirs for which each sample was taken on the attached Water Analysis from Martin Water Laboratories.

Sample No. 1 is Delaware, Wolfcamp and Bone Spring waters combined.
Sample No. 2 is Delaware, Wolfcamp and Bone Spring waters combined.
Sample No. 3 is Delaware water.
Sample No. 4 is Delaware water.

VIII. Geologic Data on the Injection Zone

1. The lithological description for the Corbin Delaware Federal Unit, which produces oil and gas from a series of fine to very fine-grained arkosic sandstones of the middle Permian Age Delaware Group.

2. The geological name for the proposed zone of injection is the Delaware formation.

3. The approximate thickness of the Delaware formation is 200'.

4. The depth of the top of the producing zone is approximately 5004'.

5. Fresh water sources in the immediate area have been encountered in aquifers above 250 feet. These aquifers are found in the Pliocene age Ogallala and Pleistocene age alluvial sediments and consist for the most part of alternating calcareous silt, fine sand and clay. In these wellbores, these aquifers are present to a depth of 250' and are protected by 13-3/8" surface casing which is cemented from bottom of casing to the surface. See the attached wellbore sketches. There are no other sources of fresh water underlying the injection interval.

IX. Stimulation Program

1. There is no proposed stimulation program planned for these wells.

X. Log Sections

1. Attached are the log sections with the proposed intervals indicated.

XI Fresh Water Wells

1. Mr. Ken Frequez with the State Engineers Office in Roswell, New Mexico, A/C 505-622-6467, was contacted. Mr. Frequez said they did not show any fresh water wells recorded on their maps in this area.

2. Burlington Resource Oil & Gas Company's summer intern engineers, Mr. Ryan Lunsford and Mr. Monty Myers also did a visual inspection. No fresh water wells were found. See the attached pictures taken of the area while visual inspection was done.

XII. Seismic Data

1. An examination of the seismic data and available information indicated there is no evidence of open faults or any other hydrologic connection between the injection zone and any underground source of drinking water.

XIII. Proof of Notice

1. The surface owner of the land on which the wells are located and each lease hold operator within a one-half mile radius of each well location were notified by certified-return receipt by our Attorney, Mr. W. Thomas Kellahin with Kellahin & Kellahin, Attorneys at Law in Santa Fe, New Mexico.

See the attached notification list.

If any additional data is required, please contact Mr. Doug Seams, Reservoir Engineer with Burlington Resources Oil & Gas Company at A/C 915-688-6854.

Maria L. Perez

Maria L. Perez
Regulatory Representative
Burlington Resources Oil & Gas Company
A/C 915-688-6906

(s:mlp1:Corbin Delaware Federal Unit.doc)