

MERRION OIL & GAS CORPORATION

P. O. Box 840
FARMINGTON NEW MEXICO 87499

January 24, 1986

Oil Conservation Division
State Land Office Building
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Application for Authorization to Inject
Chittum Penistaja #1

Gentlemen:

Merrion Oil and Gas Corporation requests administrative approval to dispose of produced water from the Entrada formation by subsurface injection. Attached for your consideration is our "Application for Authorization to Inject".

The proposed disposal well is the Chittum Penistaja #1. The proposed injection zone is the Gallup.

Respectfully,



T. Greg Merrion
Production Engineer

TGM/ljm

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: Merrion Oil and Gas Corporation
Address: P. O. Box 840, Farmington, New Mexico 87499
Contact party: I. Greg Merrion Phone: (505)-325-5093
- 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: I. Greg Merrion Title: Production Engineer
Signature: I. Greg Merrion Date: January 24, 1986
- * 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.

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.

January 24, 1986

Addendum to Application for Authorization to Inject

- IIIA. (1) Chittum Penistaja #1
Section 36, T20N, R5W
990' FSL; 990' FEL
- (2) 9-5/8", 36#/ft., K-55 surface casing run to 237' and cemented to surface w/260 sx. Hole size to 237' is 14-3/4".
- 7", 23# & 32#/ft., K-55 & C-75 production casing run to 3100' & cemented w/ 200 sx. Top of cement is at 2438' (from CBL). Hole size to 3100' is 8-3/4".
- 4-1/2", 10.5#/ft., J-55 liner run from 2927' to 3600' and cemented w/70 sx. Top of cement at 2927' (calculated). Hole size to 3600' is 6-1/4".
- (3) 3-1/2", 9.3#/ft, J-55 plastic-coated tubing to 2900' and 2-7/8", 6.5#/ft, J-55 plastic-coated tubing to 3200'.
- (4) Baker Lok-Set packer (internally plastic-coated) set at 3200'.

- B. (1) Gallup formation.
(2) 3270'-3328' (1 JSPF).
(3) The subject well was originally drilled as a Gallup producer.
(4) See wellbore sketch for details on perforated intervals and squeeze information.
(5) There are no oil or gas zones above the Gallup. The Entrada is the next lower oil zone in the area.

- VI. The wells within a one-half mile radius of the proposed Chittum Penistaja #1 are the State 36A-1 and the Arena Blanca #1.

Addendum to Application for Authorization to Inject
Page Two

Well: State 36A-1
Type: Plugged and abandoned (See Figure 1).
Date Drilled: 10-8-75
Location: 1650' FSL; 500' FEL
 Section 36, T20N, R5W
 McKinley County, New Mexico
Depth: 5740'
Completed Interval: Did not complete. Entrada DST'd
wet.

Well: Arena Blanca #1
Type: Producing oil well.
Date Drilled: 7-14-85
Location: 2360' FSL; 1200' FEL
 Section 36, T20N, R5W
 McKinley County, New Mexico
Depth: 5569'
Completed Interval: Entrada (5714'-15')

- VII. (1) Average Injection Rate: 4000 BWPD
Maximum Injection Rate: 6000 BWPD
(2) The injection system is closed.
(3) Average Surface Injection Pressure: 500 PSIG
Maximum Surface Injection Pressure: 650 PSIG
(4) The Entrada is the source of the produced water.
A water analysis is attached.
(5) An analysis of the Gallup formation water is
attached.
- VIII. The injection interval is the Cretaceous Gallup
formation. The Gallup is a very fine grained,
shaley, regressive marine siltstone. The Gallup top
is at 3211' and the formation is 420' thick.
- The base of the Ojo Alamo is generally considered the
bottom of all underground sources of drinking water.
The Ojo Alamo outcrops north of this area and
therefore no sources of drinking water are present in
the proposed injection well.
- IX. No stimulation is proposed at this time.
- X. The well logs have been submitted.
- XI. There are no fresh water wells within one mile of the
injection well.

Addendum to Application for Authorization To Inject
Page Three

- XII. Available engineering and geologic data has been examined and there is no evidence of a hydrologic connection between the disposal zone and a source of drinking water.
- XIII. Leasehold operators within a one-half mile radius include Santa Fe Energy and Champlin. Both operators have been notified by registered mail of the proposed disposal well. A legal advertisement was published in McKinley County, New Mexico and is attached.

09

NM21452

LEASE MAP

N00-C-5857

N00-C-583

CHITTUM PENISTAJA #1

PROPOSED DISPOSAL WELL

NM54208

US

N00-C-5886

N00-C-

Ojo Encino School

909

N00-C-5887

N00-C-5883

N00-C-5849

N00-C-5848

US

NM50991

N00-C-5836

N00-C-5858

T20N R4W

909

N00-C-5891

N00-C-5890

N00-C-5889

N00-C-5888

30

N00-C-5883

N00-C-5882

N00-C-5893

N00-C-5892

N00-C-5793

N00-C-5792

US

N00-C-5884

US

NAVAJO 25 #1

STATE #36A-2

5734

N00-C-5736

IND

NM35555

N00-C-3010

N00-C-300

T20N R5W

CHITTUM-PENISTAJA #1

STATE #36A-1

EAGLE SPRING #1

NM21452

STATE

NM50990

STATE

SILVER #1

3729

C.O.G. Resources, Inc.
3201.50/c
4/25/84

T19N R5W

NM50990

US

US

T19N R4W

907

STATE

NM36940

US

NM50990

NM39010

BIRD FED #5-12

PTASYNski #A-1

BIRD FED #11-12

BIRD FED #12-1

FBC FED #1

NM33907

NM17184

N00-C-3482

NM

50990

NM34578

NM39010

NM36575

Champlin
105.20A
12-19-84

4695

MERRION OIL & GAS CORPORATION

CHITTUM PENISTAJA #1

MCKINLEY COUNTY, NEW MEXICO
Wellbore Schematic

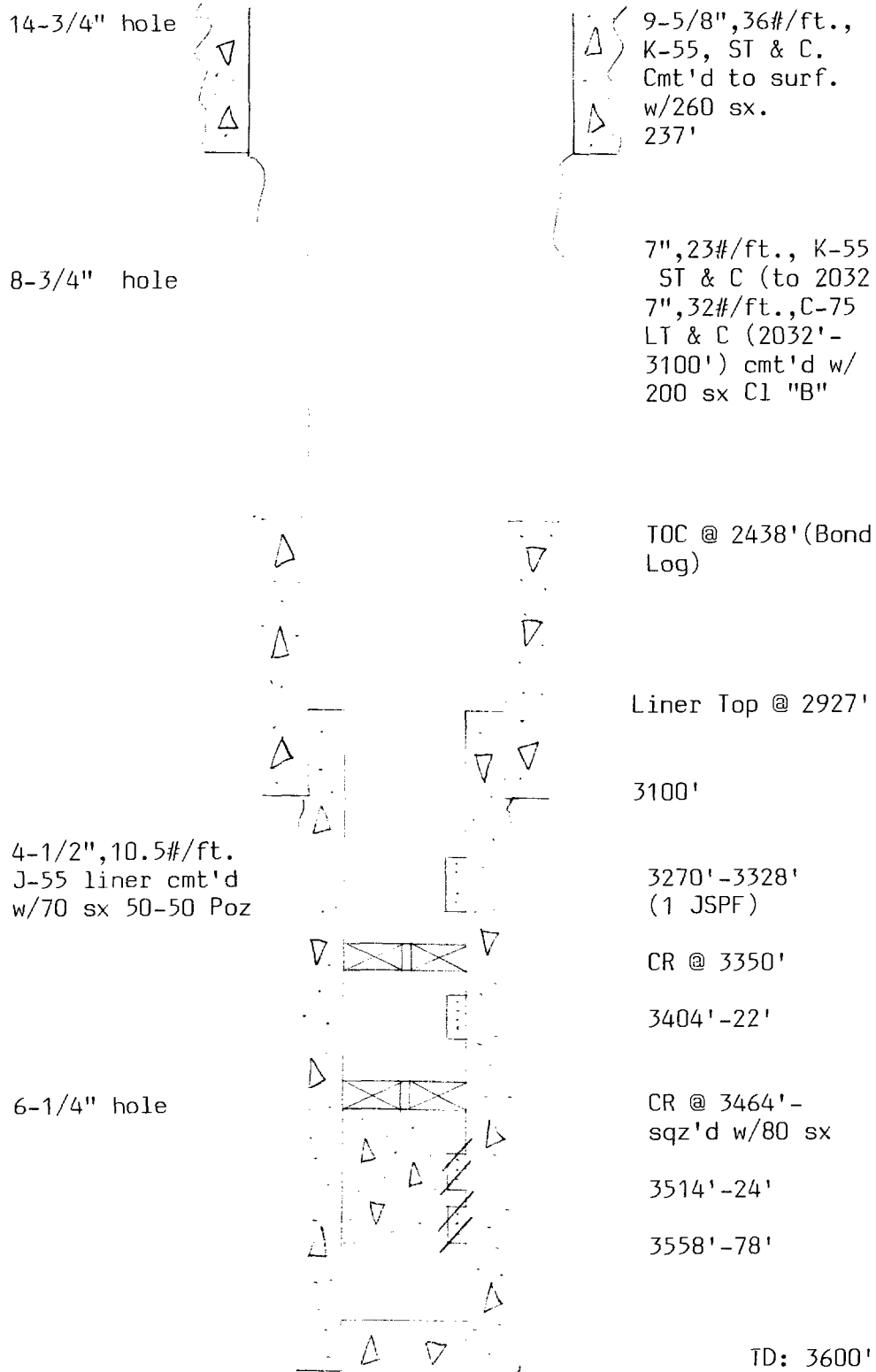
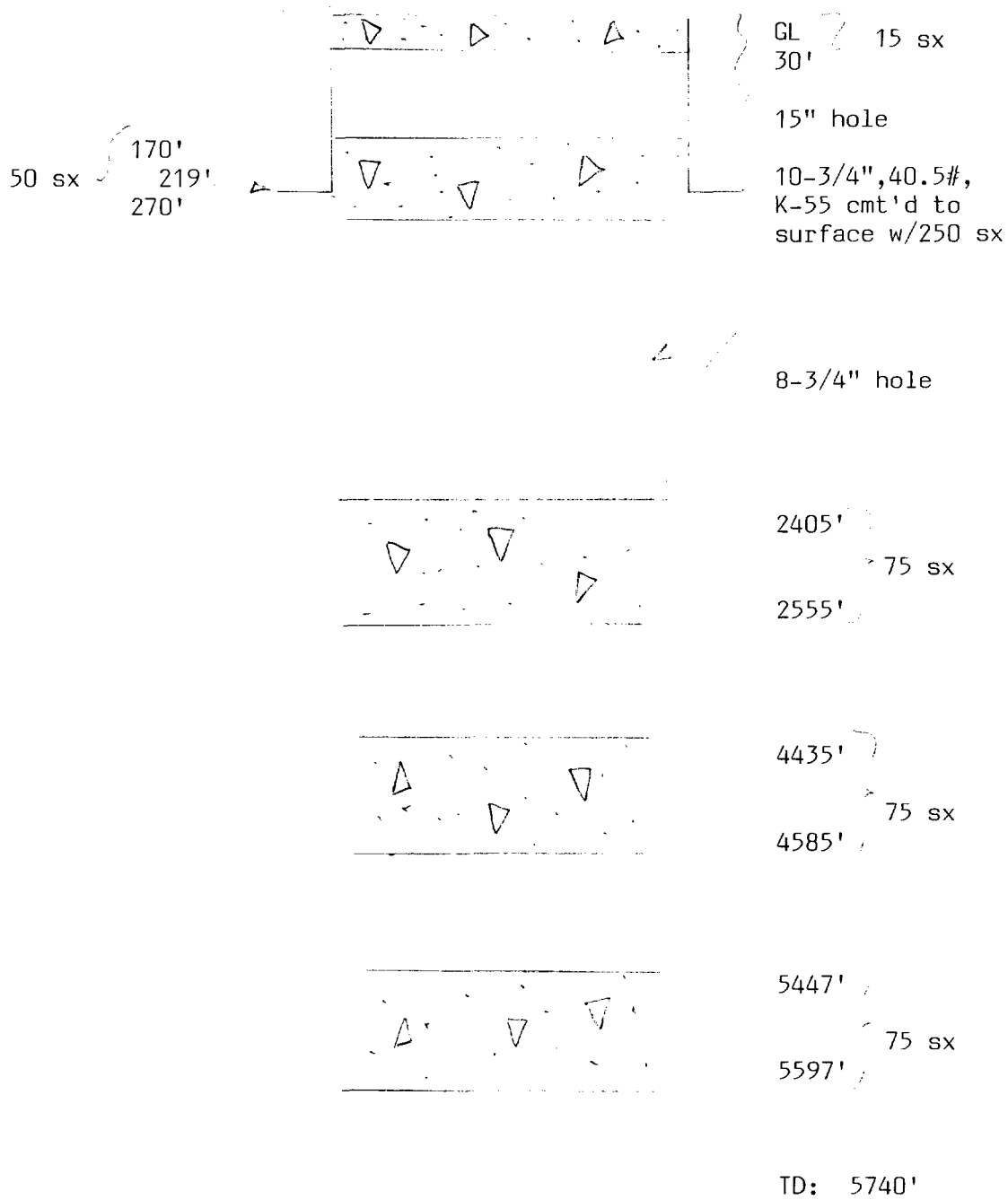


Figure 1

STATE 36A - 1

Wellbore Schematic



ANALYSIS NO. 367885

FIELD RECEIPT NO. _____

API FORM 25-1

API WATER ANALYSIS REPORT FORM

Company <u>Monica Oil & Gas</u>		Sample No. <u>1</u>		Date Sampled <u>7/12/85</u>	
Field <u>?</u>	Legal Description <u>?</u>		County or Parish <u>Sumner</u>		State <u>KS</u>
Lease or Unit <u>Penstaya</u>	Well <u>#1</u>	Depth <u>?</u>	Formation <u>?</u>	Water, B/D <u>1.0</u>	
Type of Water (Produced, Supply, etc.) <u>Produced</u>			Sampling Point <u>?</u>		Sampled By <u>?</u>

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	<u>10117</u>	<u>441.8</u>
Calcium, Ca	<u>1804</u>	<u>4.0</u>
Magnesium, Mg	<u>194</u>	<u>16.0</u>
Barium, Ba		
Potassium, K ⁺	<u>605</u>	<u>1524</u>

ANIONS

Chloride, Cl	<u>1654</u>	<u>467.3</u>
Sulfate, SO ₄	<u>229</u>	<u>2.5</u>
Carbonate, CO ₃	<u>-</u>	<u>-</u>
Bicarbonate, HCO ₃	<u>504</u>	<u>9.4</u>

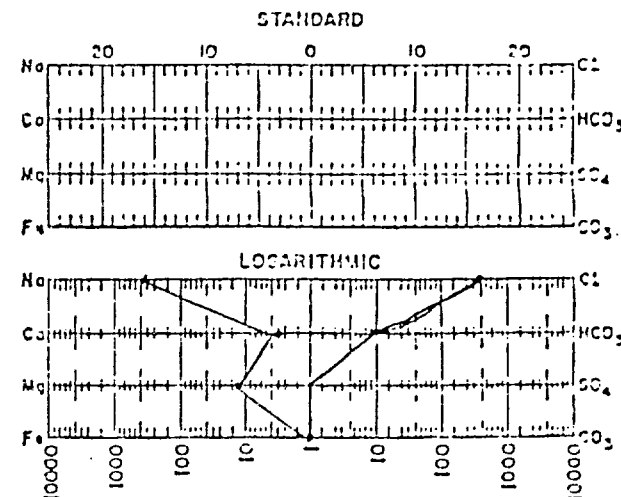
Total Dissolved Solids (calc.) 28,151Iron, Fe (total) Fe⁺⁺ - 1 Fe⁺⁺⁺ - 6 -
Sulfide, as H₂S -

REMARKS & RECOMMENDATIONS:

OTHER PROPERTIES

pH	<u>7.3</u>
Specific Gravity, 60/60 F.	<u>1.024</u>
Resistivity (ohm-meters) <u>83</u> F.	<u>0.1225</u>
Total hardness	<u>1000</u>

WATER PATTERNS — me/l

ANALYST: CTerryTHE WESTERN COMPANY OF
NORTH AMERICA, FARMINGTON, NM
(505) 327-6222Please refer any questions to: Clay Terry, District Engineer or
Tom Burris, Field Engineer5-8000 MAX CL⁻
ALLOWABLE FOR DELG.

FIELD RECEIPT NO. N/A

API FORM 45-1

API WATER ANALYSIS REPORT FORM

Company MERRION OIL & GAS		Sample No. 1		Date Sampled	
Field Wildcat Entrada		Legal Description Sec.36, T20N, R5W		County or Parish McKinley	
State NM		Lease or Unit Arena Blanco		Well #1	
Depth 5575		Formation Entrada		Water, B/D water	
Type of Water (Produced, Supply, etc.) produced		Sampling Point wellhead		Sampled By RD	

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	292	12.7
Calcium, Ca	228	11.4
Magnesium, Mg	335	27.6
Barium, Ba	-	-
Potassium, K ⁺	23.0	.588

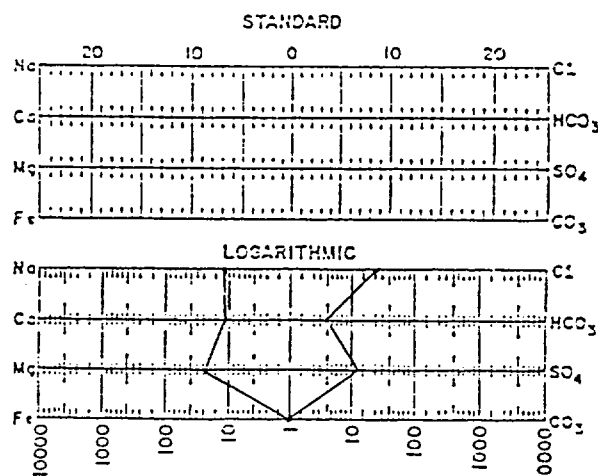
OTHER PROPERTIES

pH	7.5
Specific Gravity, 60/60 F.	1.016
Resistivity (ohm-meters) 69°F.	0.80
Total hardness	1950

ANIONS

Chloride, Cl	1128	31.8
Sulfate, SO ₄	750	15.6
Carbonate, CO ₃	-0-	-0-
Bicarbonate, HCO ₃	299	4.9

WATER PATTERNS — me/l



Total Dissolved Solids (calc.)

3055

Iron, Fe (total)

-0-

Sulfide, as H₂S

-0-

REMARKS & RECOMMENDATIONS:

ANALYST: Russ Pyeatt/
Clay Terry

THE WESTERN COMPANY OF
NORTH AMERICA, FARMINGTON, NM
(505) 327-6222

Please refer any questions to: Clay Terry, District Engineer or
Tom Burris, Field Engineer

Affidavit of Publication

STATE OF NEW MEXICO,

) ss

COUNTY OF MCKINLEY

Cecilia Paiz being duly sworn upon oath, deposes and says:

As Legal Clerk of the Gallup Independent, a newspaper published in and having a general circulation in McKinley County, New Mexico, and in the City of Gallup, therein: that this affiant makes this affidavit based upon personal knowledge of the facts herein sworn to. That the publication, a copy of which is hereto attached was published in said newspaper during the period and time of publication and said notice was published in the newspaper proper, and not in a supplement thereof,

for two times, the first publication being on the 29 day of January, 19 86 the

second publication being on the 30 day of

January, 19 86 the third publication

on the _____ day of _____, 19 _____

and the last publication being on the _____ day of

_____, 19 _____

That such newspaper, in which such notice or advertisement was published, is now and has been at all times material hereto, duly qualified for such purpose, and to publish legal notices and advertisements within the meaning of Chapter 12, of the statutes of the State of New Mexico, 1941 compilation.

Cecilia Paiz
Affiant

Sworn and subscribed to before me this 4th day of

February, A.D., 19 86

Margaret M. Palochek
Notary Public.

My commission expires

8-27-89

LEGAL NOTICE

MERRION OIL & GAS CORPORATION
304 PETERSON AVE. BIRMINGHAM, ALA. 35202
P.O. BOX 200
FARMINGTON, NEW MEXICO 87401
505-225-0000

Propose to convert to Water Injection Well chittum Ponitaja #1, 550' FEL & 550' FEL Section 25, T18N, R20W, McKinley County, New Mexico. The well is located in Gallup, Depth - 325' - 325'. Maximum Rate - 6000 BWPD. Maximum Pressure - 6000 PSI.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 200, Santa Fe, New Mexico 87500.

Legal Notice Published in The Gallup Independent, Wednesday, January 23, Thursday January 24, 1986

<p>CHITTUM PENISTAJA 1</p> <p>● SENDER: Complete items 1, 2, 3 and 4.</p> <p>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. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.</p> <p>1. <input checked="" type="checkbox"/> Show to whom, date and address of delivery.</p> <p>2. <input type="checkbox"/> Restricted Delivery.</p>	
<p>3. Article Addressed to:</p> <p>Santa Fe Energy 1616 Glenharm Place Suite 2600 Denver, Colorado 80202</p>	
<p>4. Type of Service:</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail</p>	<p>Article Number</p> <p>P064-536-383</p>
<p>Always obtain signature of addressee or agent and DATE DELIVERED.</p>	
<p>5. Signature — Addressee</p> <p><i>Chittum Penistaja</i></p>	
<p>6. Signature — Agent</p> <p>X</p>	
<p>7. Date of Delivery</p> <p>1-27-86</p>	
<p>8. Addressee's Address (ONLY if requested and fee paid)</p>	

PS Form 3811, July 1983

DOMESTIC RETURN RECEIPT

<p>Chittum Penistaja 1</p> <p>● SENDER: Complete items 1, 2, 3 and 4.</p> <p>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. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.</p> <p>1. <input checked="" type="checkbox"/> Show to whom, date and address of delivery.</p> <p>2. <input type="checkbox"/> Restricted Delivery.</p>	
<p>3. Article Addressed to:</p> <p>Champlin Petroleum Company P. O. Box 1257 Englewood, Colorado 80150</p>	
<p>4. Type of Service:</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail</p>	<p>Article Number</p> <p>P064-536-382</p>
<p>Always obtain signature of addressee or agent and DATE DELIVERED.</p>	
<p>5. Signature — Addressee</p> <p>X</p>	
<p>6. Signature — Agent</p> <p>X</p>	
<p>7. Date of Delivery</p> <p>1-30-86</p>	
<p>8. Addressee's Address (ONLY if requested and fee paid)</p>	

PS Form 3811, July 1983

DOMESTIC RETURN RECEIPT



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE 2-12-86

RE: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed SWD ☒ _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated JANUARY 24, 1986
for the MERRION OIL & GAS CORP. CHITUM PENISTAJA #1 P-36-20N-5W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

APPROVE

Yours truly,

Carolyn J. Taylor