

JC.

(512) 494-0406

August 2, 1991

State of New Mexico Energy Minerals and Natural Resources Department P. O. Box 2088 Santa Fe, New Mexico 87501-2088

Gentlemen:

Attached is Form C-108, "Application for Authorization to Inject", along with information required for administrative approval by the Oil Conservation Division. Pyramid Energy, Inc., is requesting permission to expand existing authority to include West Pearl Queen Unit Well Nos. 109, 110, 119, 121, 123, 124, 126, 128, 138, 139, 141, 143, 145, 147, and 149.

Of the 15 proposed well conversions, six (Well Nos. 110, 123, 138, 141, 145, and 147) will entail re-entering plugged and abandoned wellbores. Of the six re-entries, three of the wells (Nos. 110, 123, and 138) were active injection wells prior to being plugged.

If you have any questions, or need additional information, please call me at (512) 490-5000.

Sincerely,

Scott Graef∛

Just Jean L

Production Engineer

SG/3/41/mmc

Attachments

August 2, 1991

Oil Conservation Division District I Office P. O. Box 1980 Hobbs, New Mexico 88240

Gentlemen:

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If you have any questions, or need additional information, please call me at (512) 490-5000.

Sincerely,

Scott Graef

Production Engineer

SG/3/41/mmc

Attachments

of the earlier submittal.

| | I hereby certify that the information submitted with this application is true and correc |
|-------|--|
| XIV. | Certification |
| XIII. | Applicants must complete the "Proof of Notice" section on the reverse side of this form. |
| 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. |
| 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. |
| х. | Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) |
| IX. | Describe the proposed stimulation program, if any. |
| VIII. | Attach appropriate geological data on the injection zone including appropriate lithologi 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. |
| | Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and If injection is for discosal 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.). |
| vii. | Attach data on the proposed operation, including: |
| VI. | Attach a tabulation of data on all wells of public record within the area of review whice 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. |
| ٧. | 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. |
| IV. | Is this an expansion of an existing project? \boxed{X} yes $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $ |
| 111. | 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. |
| | Contact party: Scott Graef Phone: 512/490-5000 |
| | Address: 14100 San Pedro, Suite 700, San Antonio, Texas 78232 |
| II. | Operator: Pyramid Energy, Inc. |
| | Application qualifies for administrative approval? X yesno |

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

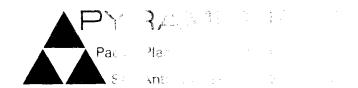
All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

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.



JC.

(512) 494-0406

August 2, 1991

Re: Application for Conversion to Water Injection of WPQU #109, WPQU #110, WPQU #119, WPQU #121, WPQU #123, WPQU #124, WPQU #126, WPQU #128, WPQU #138, WPQU #139, WPQU #141, WPQU #143, WPQU #145, WPQU #147, and WPQU #149

WPQU #147, and WPQU #149 NMOCD Form C-108 Section XII

I hereby state that I have evaluated information derived from logs, well files, and other available geologic and engineering data, concerning the captioned wellbores and other wellbores in the area of interest. I have found no evidence of open faults or any other hydrologic connection between the water injection zones in the Queen formation and any underground source of drinking water.

PYRAMID ENERGY, INC.

Scott Graef

Lit List

Production Engineer

SG/3/45/mmc

STATE OF TEXAS §
COUNTY OF BEXAR §

This letter was acknowledged before me on the <u>and</u> day of August, 1991, by Scott Graef, Production Engineer for Pyramid Energy, Inc., a Delaware corporation, on behalf of said corporation.

12 (15) 15

Leavey S. Hales

WEST PEARL QUEEN UNIT

APPLICATION FOR AUTHORIZATION TO INJECT

Surface Owners

Alta Faye Klein P. O. Box 1503 Hobbs, New Mexico 88240

Leo Sims 119 N. Dalmont Hobbs, New Mexico 88240

State of New Mexico c/o State Land Office P. O. Box 1148 Santa fe, New Mexico 87504-1148

Offset Operator

Chevron, U.S.A., Inc. P. O. Box 670 Hobbs, New Mexico 88240 Attention: Clint Morrill AFFIRAVIT OF PUBLICATION

State of New Mexico. County of Lea.

Kathi Bearden

of the Hobbs Daily News-Sun. a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period

| ONE | weeks. |
|-----------------------------|--------------------------|
| Beginning with th | |
| August 4, and ending with t | |
| August 4 | |
| General | <i>Bussin</i> Manager |
| Sworn and subsc | |
| me this | day of |
| | , 19 |
| | |
| Notary Public. | |
| My Commission | expires |
| <u></u> | , 19 |
| (Sual) | |

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

LEGAL NOTICE

LEGAL NOTICE
August 4, 1991
NOTICE OF APPLICATION
FOR AUTHORIZATION
TO INJECT FLUID
Pyramid Energy, Inc., 14100 San Pedro, Suite 700, San
Antonio, Texas 78232, (512) 490-5000 (Applicant), proposes
to inject water into the following proposed water injection
wells in the West Pearl Queen Unit, Lea County, New
Mexico: Mexico:

Mexico:

WPQU #109 (Section 28, T-19-5, R-35-E)

WPQU #110 (Section 29, T-19-5, R-35-E)

WPQU #121 (Section 29, T-19-5, R-35-E)

WPQU #123 (Section 28, T-19-5, R-35-E)

WPQU #124 (Section 28, T-19-5, R-35-E)

WPQU #125 (Section 28, T-19-5, R-35-E)

WPQU #126 (Section 29, T-19-5, R-35-E)

WPQU #128 (Section 29, T-19-5, R-35-E)

WPQU #128 (Section 32, T-19-5, R-35-E)

WPQU #139 (Section 32, T-19-5, R-35-E)

WPQU #141 (Section 33, T-19-5, R-35-E)

WPQU #143 (Section 33, T-19-5, R-35-E)

WPQU #145 (Section 33, T-19-5, R-35-E)

WPQU #147 (Section 33, T-19-5, R-35-E)

WPQU #149 (Section 32, T-19-5, R-35-E)

2000 psi at a maximum rate of 500 barrels per day. The purpose of the proposed water injection wells is secondary recovery of all through waterflooding, interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Bex 2088, Santa Fe, New Mexico 87501 within 15 days. Contact party for Applicant is Scott Graef, Engineer, (\$12) 490-5000.

Pacific Plaza • 14100 San Pedro, Suite 700

San Antonio, Texas 78232 • (512) 490-5000 • FAX: (512) 494-0406

August 2, 1991

Chevron, U.S.A., Inc. P. O. Box 670 Hobbs, New Mexico 88240

Attention: Mr. Clint Morrill

Re: Offset Operators Notification of Application for Authorization to Inject into WEST PEARL QUEEN UNIT Well Nos. 109, 110, 119, 121, 123, 124, 126, 128, 138, 139, 141, 143, 145, 147, and 149

Mr. Morrill:

Pyramid Energy, Inc. is seeking to expand its authority to inject saltwater into the captioned wells. We are required to furnish all offset operators a copy of the application in accordance with Section XIV of NMOCD Form C-108. Please find attached your copy of the application. If you wish to object or request a hearing, you must do so with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days. Should you have questions or require additional information, please feel free to contact me at (512) 490-5000.

Sincerely,

Scott Graef

Production Engineer

SG/3/42/mmc

Attachment

| addressee's address. 2. Restricted Delivery (Extra charge) |
|--|
| 4. Article Number |
| P 505 161 384 |
| Type of Service: |
| Registered Insured |
| X Certified COD |
| Express Mail Return Receifor Merchan |
| Always obtain signature of addressee |
| or agent and DATE DELIVERED. |
| 8. Addressee's Address (ONLY ij |
| requested and fee paid) |
| |
| |
| |
| |

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August 2, 1991

Mr. Leo Sims 119 N. Dalmont Hobbs, New Mexico 88240

Re: Surface Owners Notification of Application for Authorization to Inject into WEST PEARL QUEEN UNIT Well Nos. 109, 110, 119, 121, 123, 124, 126, 128, 138, 139, 141, 143, 145, 147, and 149

Dear Mr. Sims:

Pyramid Energy, Inc. is seeking to expand its authority to inject saltwater into the captioned wells. We are required to furnish the surface land owners a copy of the application in accordance with Section XIV of NMOCD Form C-108. Please find attached your copy of the application. If you wish to object or request a hearing, you must do so with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days. Should you have questions or require additional information, please feel free to contact me at (512) 490-5000.

Sincerely,

Scott Graef

Production Engineer

SG/3/41/mmc

Attachment

| | • |
|---|--|
| 3 and 4. Put your address in the "RETURN TO" Space on the | ditional services are desired, and complete item. |
| the date of delivery. For additional fees the following and check box(es) for additional service(s) requested | |
| 1. Show to whom delivered, date, and addres (Extra charge) | see's address. 2. Restricted Delivery (Extra charge) |
| 3. Article Addressed to: | 4. Article Number |
| LEO SIMS | P 505 161 381 |
| 119 N DALMONT | Type of Service: |
| HOBBS NM 88240 | Registered Insured |
| 332.3 | Certified COD Express Mail Return Receipt for Merchandise |
| | Afways obtain signature of addressee |
| \mathcal{O} | or agent and DATE DELIVERED. |
| 5. Signature – Andressee | 8. Addressee's Address (ONLY if requested and fee paid) |
| 6. Signature - Agent | |
| X | |
| 7. Date of Delivery | WPQU |



August 2, 1991

Mrs. Alta Faye Klein P. O. Box 1503 Hobbs, New Mexico 88240

Re: Surface Owners Notification of Application for Authorization to Inject into WEST PEARL QUEEN UNIT Well Nos. 109, 110, 119, 121, 123, 124, 126, 128, 138, 139, 141, 143, 145, 147, and 149

Dear Mrs. Klein:

Pyramid Energy, Inc. is seeking to expand its authority to inject saltwater into the captioned wells. We are required to furnish the surface land owners a copy of the application in accordance with Section XIV of NMOCD Form C-108. Please find attached your copy of the application. If you wish to object or request a hearing, you must do so with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days. Should you have questions or require additional information, please feel free to contact me at (512) 490-5000.

Sincerely,

Scott Graef

Production Engineer

SG/3/41/mmc

Attachment

| Show to whom delivered, date, and add (Extra charge) | sted. dressee's address. 2. Restricted Delivery (Extra charge) |
|--|---|
| 3. Article Addressed to: | 4. Article Number |
| ALTA FAYE KLEIN | P 505 161 382 |
| PO BOX 1503 | Type of Service: |
| HOBBS NM 88240 | Registered Insured |
| | COD Express Mail Return Receifor Merchand |
| | Always obtain signature of addressee |
| | agent and DATE DELIVERED. |
| 5. Signature – Addressee | 8. Addressee's Address (ONLY if requested and fee paid) |
| 6. Signature – Agent | - Conc |
| x | |
| 7. Date of Delivery | WPQU |
| 815-41 | SG/Prod/Notice to sur |

August 2, 1991

State of New Mexico c/o State Land Office P. O. Box 1148 Santa Fe, New Mexico 87504-1148

Attention: Jamie Bailey

Re: Surface Owners Notification of Application for Authorization to Inject into WEST PEARL QUEEN UNIT Well Nos. 109, 110, 119, 121, 123, 124, 126, 128, 138, 139, 141, 143, 145, 147, and 149

Ladies and Gentlemen:

Pyramid Energy, Inc. is seeking to expand its authority to inject saltwater into the captioned wells. We are required to furnish the surface land owners a copy of the application in accordance with Section XIV of NMOCD Form C-108. Please find attached your copy of the application. If you wish to object or request a hearing, you must do so with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days. Should you have questions or require additional information, please feel free to contact me at (512) 490-5000.

Sincerely,

Scott Graef

Production Engineer

SG/3/41/mmc

Attachment

| SENDER: Complete items 1 and 2 when additional 3 and 4. | services are desired, and complete items |
|--|--|
| Put your address in the "RETURN TO" Space on the reverse from being returned to you. The return receipt fee will provide the date of delivery. For additional fees the following service and check box(es) for additional service(s) requested. 1. Show to whom delivered, date, and addressee's ad (Extra charge) | you the name of the person delivered to and s are available. Consult postmaster for fees |
| 3. Article Addressed to: | 4. Article Number |
| STATE OF NEW MEXICO | P 505 161 383 |
| c/oSTATE LAND OFFICE PO BOX 1148 SANTA FE NM 87504-1148 | Type of Service: Registered Insured Cortified COD Express Mail Return Receipt for Merchandise |
| | Always obtain signature of addressee or agent and DATE DELIVERED. |
| 5. Signeture – Addressee | 8. Addressee's Address (ONLY if requested and fee paid) |
| 6. Signature — Agent (v) (3) | |
| 7. Date of Delivery | SG/Prod/WPQU Notice |
| PS Form 3811 , Apr. 1989 ±U.S.G.P.O. 1989-238-819 | DOMESTIC RETURN RECEIPT |

DATA ON THE PROPOSED OPERATION

Proposed Injection Volume: Average - 400 barrels/day

Maximum - 500 barrels/day

Proposed Injection Pressure: Average - 1700 PSI at surface Maximum - 2000 PSI at surface

Injection System is closed.

Sources of injection fluid are produced saltwater and freshwater purchased from Marathon Road Water Station. The appropriate chemical analysis is included.

Injection is into a zone productive of oil and gas.

No stimulation program is proposed on the wells to be converted.

P. O. BOX 1468 MONAHANS, TEXAS 79756 PH. 943-3234 OR 563-1040

709 W. INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521

RESULT OF WATER ANALYSES

| | LABORATORY NO. 129064 |
|--|---------------------------------|
| m. Mr. Scott Graef | SAMPLE RECEIVED 12-5-90 |
| ro: Mr. Scote Graef 14 1) San Pedro, Suite 700, San Antonio, TX | RESULTS REPORTED12-12-90 |
| 78232 | - |
| COMPANY Pyramid Energy LEA | se <u>West Pearl Queen Unit</u> |
| FIELD OR POOL Peari | |
| SECTION BLOCK SURVEY COUNTY _ | Lea STATE NM |
| SOURCE OF SAMPLE AND DATE TAKEN: | |
| NO. 1 Supply water - taken from gaw water l | ine. 12-5-90 |
| NO. 2 Produced water - taken from free water | er knockout. 12-5-90 |
| NO. 3 | |
| NO 4 | |

| | NO. 1 | NO. 2 | NO. 3 | NO. 4 |
|---|---------------------------------------|--------------|--|-------|
| Specific Gravity at 60° F. | 1.0012 | 1.1068 | ······································ | |
| pH When Sampled | 7.5 | 6.3 | ···· | |
| pH When Received | 7.93 | 5.95 | | |
| Bicarbonate as HCO3 | 171 | 549 | | 1 |
| Supersaturation as CaCO3 | 4 | 30 | | |
| Undersaturation as CaCO3 | | | | 1 |
| Total Hardness as CaCO3 | 115 | 40,000 | | |
| Calcium as Ca | 34 | 9,000 | | , |
| Magnesium as Mg | 8 | 4,253 | | |
| Sodium and/or Potassium | 46 | 43,465 | | |
| Sulfate as SO4 | 33 | 1,787 | | |
| Chloride as Cl | 28 | 93,745 | | |
| Iron as Fe | 7.3 | 21.2 | • | |
| Barium as Ba | 0 | 0 | | |
| Turbidity, Electric | 14 | 88 | | |
| Color as Pt | 10 | 89 | | |
| Total Solids, Calculated | 318 | 152,799 | | |
| Temperature °F. | 48 | 56 | | |
| Carbon Dioxide, Calculated | 9 | 450 | | |
| Dissolved Oxygen. | 0.010 | 0.000 | | |
| Hydrogen Sulfide | 0.0 | 0.0 | | |
| Resistivity, ohms/m at 77° F. | 27.05 | 0.068 | | |
| Suspended Oil | 1 | 288 | | |
| Filtrable Solids as mg/1 | 6.6 | 38.0 | | |
| Volume Filtered, ml | 2,000 | 1,490 | | |
| | | | | |
| | | | | |
| | | | | |
| • | Results Reported As Milligrams | | | |
| Additional Determinations And Remarks Let | ter of recommendati | on attached. | | |
| | | | | |
| | | | | |
| <u> </u> | | | | |
| | | | | |
| | · · · · · · · · · · · · · · · · · · · | | | |

Form No. 3

cc: Mr. Steve DeVilbiss, Charlotte

Martin Water Laboratories, Inc. WATER CONSULTANTS SINCE 1953 BACTERIAL AND CHEMICAL ANALYSES

P.O. BOX 1468 MONAHANS, TEXAS 79756 PH. 943-3234 or 563-1040 709 W. INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521

To: Mr. Scott Graef

14100 San Pedro, Suite 700 San Antonio, TX 78232 Laboratory No.
Sample Received
Results reported

B12903 12-5-90 12-12-90

Company:

Pyramid Energy

County:

Lea, NM Pearl

Field: Lease:

West Pearl Queen Unit

Source of sample and date taken:

#1. Supply water - taken from raw water line. 12-5-90

| | #1 |
|-----------------------------|--------------|
| Iron bacteria | Not detected |
| Sulfur bacteria | Not detected |
| Sulfate-reducing bacteria | Not detected |
| Other aerobes | 2,800 |
| Other anaerobes | 900 |
| Fungi (& aciduric bacteria) | Not detected |
| Algae | Not detected |
| Protozoa | Not detected |
| Total count | 3,700 |
| pH | 7.5 |
| Temperature | 48 |

Note: All numerical results are reported as the number of cells per milliliter of the sample as determined by plate counts; except iron, algae, and protozoa, which are determined microscopically.

Remarks: Letter of recommendation attached.

Waylan C. Martin, M.A.

cc: Mr. Steve DeVilbiss, Charlotte

P.O. BOX 1468 MONAHANS, TEXAS 79756 PH, 943-3234 or 563-1040

709 W. INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521

December 12, 1990

Mr. Scott Graef Pyramid Energy 14100 San Pedro, Suite 700 San Antonio, TX 78232

Subject: Recommendations relative to laboratory #129064 and #B12903

(12-5-90) - West Pearl Queen Unit.

Dear Mr. Graef:

The primary objective herein is to evaluate compatibility between the two waters represented for potential mixing and injecting. Secondarily, we have reviewed the records regarding possible other significant aspects of the handling of the mixture of these waters.

Those aspects of this study relative to the above objective are as follows:

- 1. The results of the analyses represented herein have revealed no evidence of any potential incompatibility between these two waters. Our only concern in this regard would be that we normally encounter some oxygen in supply waters in this general area and therefore feel this is an aspect that would warrant close observation regarding the continuity of the absence of oxygen in the supply water. The reason for this is that oxygen would create precipitation of iron oxide due to the soluble iron that we have encountered in both waters in these analyses.
- The injection quality of each of these waters is considered reasonably satisfactory in that our microscopic study of the filtrable solids showed them to be composed of very fine particles. We do not generally consider the amount of oil encountered to be excessive for a free water knockout water although it would be well to closely observe vessels that are subsequently handling this water as there would be an ultimate accumulation of oil on top of the vessels.
- We note in this study that the produced water is slightly over the saturation point to calcium sulfate. This is not sufficient to indicate that scaling can be expected from this source, but it is sufficient to warrant some future observation in this regard. It should further be added that mixing of the waters will essentially eliminate this condition. We see no suggestion that there would be any other potential scaling from any other source.

- 4. The results indicate that each of these individual waters as well as the mixture would be expected to have a moderate corrosion rate. However, it would be considered sufficient to warrant consideration of linings in the system as a justified investment. The produced water would be expected to have a dissolving influence as a result of the combination of a low pH and carbon dioxide. This would be aggravated by electrolysis. This would be expected to be the principal source of corrosion in the mixed water as well.
- 5. The bacterial results of the supply water showed no evidence of any significant activity in this water. We would also not expect any likelihood of excessive bacterial activity in the produced water. Of course, this activity would hinge principally on the effective prevention of air contamination.
- 6. It is considered very vital in building the injection plant that a concentrated effort be applied to the utilization of gas seals and other action that would effectively maintain this system completely free of air contamination from the source of the waters through the injection pumps. Air contamination would primarily result in precipitation of iron oxide, but it would also significantly accelerate corrosion and cause potential bacterial activity.

In the above review, we have attempted to cover those aspects of the individual waters and their mixtures that we consider of primary significance on the basis of this single study. We would strongly recommend that an early study be planned when the system is put into operation to confirm the conditions we have encountered herein and identify any that we have not anticipated. This will be a relatively sensitive system because of its sensitivity to air contamination as well as other normal unexpected developments that occur. We would therefore recommend a Quality Control Surveillance Program be set up to examine the water at intervals of every one to three months to obtain optimum water quality and control of handling conditions.

Very truly yours,

Waylan C. Martin

WCM/rr

cc: Mr. Steve DeVilbiss, Charlotte

CHEMICAL ANALYSIS OF FRESH WATER

The closest known active water well is more than one mile away from the nearest of the proposed injection wells. The water well is located 750 FSL and 1020 FWL of Section 22, T-19-S, R-35-E. Attached is a chemical analysis of the water.



P.O.BOX 2187 HOBBS, N.M. 88240

Report for: ALLEN SHORT

WATER ANALYSIS REPORT

Date sampled:

3-7-91

Date reported: 3-10-91 cc: Lease or well # : FAYE CLINE W/W cc: cc: County: State: Company: PYRAMID Formation: Address: Depth: Service Engineer: JOEL NUCKOLS Submitted by: ALLEN SHORT CHEMICAL COMPOSITION: mq/L meq/L Chloride (C1) 100 3 Iron (Fe) (total) 0.0 Total hardness 320 Calcium (Ca) 80 4 Magnesium (Mg) 29 2 Bicarbonates (HCO3) 378 6 Carbonates (CO3) n/a Sulfates (SO4) 66 1 Hydrogen sulfide (H2S) n/a Carbon dioxide (CO2) n/a Sodium (Na) 93 Total dissolved solids 747 Barium (Ba) n/a Strontium (Sr) n/a Specific Gravity 1.000 Density (#/gal.) 8.334 pH 7.200 IONIC STRENGTH 0.01 Stiff-Davis (CaCO3) Stability Index: SI = pH - pCa - pAlk - KSI = 86 F = +0.54104 F = +0.76122 F = +0.99140 F = +1.23158 F = +1.47

This water is 2357 mg/l (%-100.00%) under ITS CALCULATED CaSO4 saturation value at 82 F. SATURATION= 2357 mg/L PRESENT= 0 mg/L

REPORTED BY MOSES GARCIA JIMENEZ

GEOLOGICAL DATA ON THE INJECTION ZONE

Lithologic Detail: Dolomite, Sandstone, and Shale

Geologic Name: Queen

Thickness: 4300'-5000'

Average Depth to Porosity: 4650'

Underground source of drinking water overlying the injection zone in the proposed area is the 0gallala at an average depth of 50'.

The calculation of cement top for the production string on the attached sheets used an average hole diameter of 8 1/2". This average hole size was determined from calipher measurements on openhole logs run in ten new wells drilled on the East and West Pearl Queen Units in the last year.

| Hore - 7.5 | NB B | E PORTO | 109 Schei | OPERATOR PARAMIO LAS |
|--|--|---|------------------|------------------------------|
| achter and all | Top or calcula | 01060:160 6 % CS6, 326 | Schematic | FOOTAGE LOCATION |
| Long string Size $A^{1}/2$ "Cemented with 250 SKS. Company ATT SER (NELD). TOC 3047 feet determined by $CALCULATED$ Hole size $7^{-1}/8$ Total depth 5002^{-1} Injection interval A734 feet to 4967.5 feet Operforated or open-hole, indicate which) | Size None "Cemented with sx. TOC feet determined by Hole size | Size 5% "Cemented with 300 sx. TOC SURFACE feet oetermined by Cukeuchich | Z8 T-19.5 R-35.E | LEASE SECTION TOWNSHIP RANGE |

| 5. | | | 3 | 2. | • | 440 | (or | to | Tub |
|---|--|--|--|---|---|------------|---|--|--|
| Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. First Sad Ambres West-5600 | Has the well ever been perforated in any other zone(s)? List all such perforated intervale and give plugging detail (sacks of cement or bridge plug(s) used) None | If no, for what purpose was the well originally drilled? OL PRODUCTION | Is this a new well drilled for injection? 💯 Yes 💯 No | Name of Field or Pool (if applicable) FEARL QUEEN | Name of the injection formation <u>SUECN</u> SAND | Other Data | describe any other casing-tubing seal). | BAKER Model AD-1 or Equivalent packer at 4700 feet (brand and model) | Tubing size 23/8 lined with PLASTIC (material) |

| CIBPO 4703 CAPPED W/35 CMT. 200 4898 - 4712 CAPPED W/35 CMT. 51/2 GUIDERSON TYPE "A" Size OPENHOLE PKR. @ 4810 TOC OPENHOLE - 5" A720 - 4998 Total | | 0.000.00 | Schematic | OPERATOR RISAMID ENERGY, INC. WELL NO. FOOTAGE LOCATION WELL NO. 1980 FNL & 660 FEL |
|---|---|--|--------------|--|
| string 5/2 3004 size l depth | Intermediate Casing MONE TOC Hole size | Surface Casing Size 133/8 TOC SURFACE Hole size 17/2 | | NEST FARL QUE |
| "Cemented with 300 feet determined by TEMP SURVEY 7% CS6 NT 4920', OPENITURE 4920 TO 4998' | Cemented with | " Cemented with | Tabular Data | EARL QUELN HAIT SECTION TOWNSHIP T- 19-5 |
| JEMP SURVEY 0 4998 | s×. | CIRCULATION SX. | | RANGE |

(perforated or open-hole, indicate which)

OPENHOLE 4920-4995

feet:

Injection interval

| • | • | | 2 . | Other | or | Iub |
|--|---|--|---------------------------------------|-------|---|-----------------|
| Give the depth to and this area. | Has the well ever been perforated in any other and give plugging detail (sacks of cement or b | Is this a new well drilled f | Name of field or Pool (if applicable) | Data | <pre>(brand and model) describe any other casing-tubing</pre> | |
| name of any overlying and/or underlying oil or gas : | zone(s)? List all such cidge plug(s) used) | for injection? /_/ Yes /_/ No the well originally drilled? | ble) | | seal). | with (material) |
| zones (pools) in | perforated intervals | | | | | set in a |

| cement and granel at PBTD 4976 will be drilled out to organal t.d. of 4998' | manus of the Control | * P.D.T.D A 76 CMT 31 300 SKS | DECIZE 7/8 | M 034752-4 | to Con Jon | | | CIRC. TO SURFACE | 17 Hote 6: 13% CX @ 100 | 4.10 | J. | | Schematic | 119 198015L & 660 FEL | WELL NO. FOOTAGE LOCATION | OPERATOR | |
|--|----------------------|-------------------------------|---|------------|------------|-----------------------|-------------------------------|---------------------|-------------------------|--|------------------------------------|----------------|--------------|-----------------------|--------------------------------------|----------|--|
| (perforated or open-hole, indicate which) OPENHOLE 4743 TO 4918 | Injection inte | 7% | Size 5/2 " Cemented with 300 (NEW-132%) SX. TOC feet determined by CALCULATION | | Hole size | TOCfeet determined by | Size NONE " Cemented with sx. | Intermediate Casing | Hole size 17" | TOC SURFACE feet determined by CIRCHLATION | Size /33/8" " Cemented with 80 sx. | Surface Casing | Tabular Data | 29 T-19-S R-35-E | WEST FEARL QUELY UNIT TOWNSHIP RANGE | LEASE | |

| Ţub | Tubing size 2% lined with P_{LASTIC} set in a | |
|----------------|---|--------|
| ! | (material) | |
| D _A | SAKER AD-1 OK EQUIVALENT packer at 4700 feet (brand and model) | |
| (or | (or describe any other casing-tubing seal). | |
| 440 | Other Data | |
| 1. | Name of the injection formation Queen | |
| 2. | Name of Field or Pool (if applicable) FEARL QUEEN | |
| . | Is this a new well drilled for injection? 🖊 Yes 🐼 No | |
| | If no, for what purpose was the well originally drilled? On Probuct/ON | • |
| • | Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No | 1 10 ' |
| | | } |
| 5 | Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Frank Say ANDRES NEST-5600 | |
| | | 1 |
| | | - 1 |

| | 7 % HOLE | T.D. OPENHOLE AFZI | EMT. 1200 SKS | 51/2 CNG (04908) | | 1 A7 19 A7 26 | | Top of Contact 3855 | | CARCULATED TO SURPACE | (0) | 0.001 12 1010 |].] | | Schematic | 121 1980 FOLE 1980 FWL | WELL NO. FOOTAGE LOCATION | OPERATOR /AC. | |
|---|-------------------------------|--------------------|---------------|------------------|--|---------------|-----------|------------------------|-------------------------------|-----------------------|-------------------|--|-----------------------------------|----------------|--------------|------------------------|---------------------------|---------------|--|
| (perforated or open-hole, indicate which) OPENHOLE 4908-492; | Injection interval PEAFORATED | Total depth 492 | Hole size 778 | feet d | Size 5/2 " Cemented with 1005K 4% GEL (YICL) "3x." | Long string | Hole size | TOC feet determined by | Size NONE " Cemented with sx. | Intermediate Casing | Hole size 12 1/4" | TOC SURFACE feet determined by CARCHEATION | Size 85/8 " Cemented with 300 sx. | Surface Casing | Tabular Data | 28 T-19-5 R-35-E | SECTION TOWNSHIP RANGE | LEASE | |

| . . | 5. Gi | | 4. Has | I f | 3. Is | 2. Na | l. Na | Other Data | (or describe any other casing-tubing seal). | BAKE | Tubing size $\frac{23}{8}$ " |
|------------|--|--|---|--|---|-------------------------|----------------------------|------------|---|--|------------------------------|
| | Give the | | | no, | this | Name of | Name of | Data | scribe | (p) (m) (m) (m) (m) (m) (m) (m) (m) (m) (m | size |
| | ea dept | | the well ever give plugging | for wh | a new | Field | the i | | any | BAKER Moder AD-1 OR EQUINALENT (brand and model) | 23/8 |
| | TARL CO | | | at pur | well | or Po | njecti | | other | d mode | 2 |
| | nd nan | | een pe letail | pose v | drille | ol (if | on for | | casing | TOUIVA | |
| | DE OF S | | rforal | ras the | dfor | or Pool (if applicable) | of the injection formation | | -tubir | ENT | line |
| | NEST - | | ed in | well | injec | cable | 0 | | g sea | | d wit |
| | the depth to and name of any overlying and/or underlying oil area. Fear San Ambres West - 5600 | | been perforated in any other zone(s)? Ldetail (sacks of cement or bridge plug(s | If no, for what purpose was the well originally drilled? | new well drilled for injection? /_/ Yes | 1 | QUEEN SAND | | 1). | | lined with PLASTIC |
| | d aud/ | | ther z | nəlly | | PEARL | SAND | | | P | STIC |
| | or unc | | one(s) | drille | Yes | Queen | | | | packer at | (mat |
| | lerlyir | |)? List lug(s) u | , d2 | X | | | | | ı | (material) |
| | ng oil | | st all used) | DIT B | 0 | | | | | 4675 | |
| | or gas | | Such O | PROJUCTION | | | | | | | |
| | s zones | | such perforated | ک | | | | | | | |
| | 1 | | | | | | | | | | set |
| | (pools) i | | intervals | | | | | | | feet | t in a |
| | j. D | | a l | i | | 1 | 1 | | | | |

| THE CAPTIONED WELL WAS AN INJECTION IN WELL PRIOR TO BEING P! A 2/13/81. PURAMID PROPOSES TO RE-ENTER THE WELLAGE AND CLEANOUT ALL CANT, PLUSS DELLAGE TO BE TO BE TO BE THE CAPT. | 77/2" | A12 CSS AT 4932 CMT. W/ 100 SK | 18 A720-4730 | TOP OF CMT AT 3737 (CALCULATED) 100 CMT, PLACE 100 CMT, PLA | CMT W/300 CIRCULATED | O1 + = | | Schematic | FSL & 660 FEL | RIBAMID ENERGY INC. |
|---|------------------|-----------------------------------|-----------------------------------|--|----------------------|----------------------------------|-----------------------|-----------|------------------|------------------------|
| Injection interval 4720 feet to 2 (perforated or open-hole, | Total depth 4932 | TOC 3737 feet | Long string Size $4\frac{1}{2}$ " | TOCfeet | Size NONE " | TOC SURFACE feet | Size 85/8" " | Tabular | LEASE SECTION | WEST, PEARL QUEEN UNIT |
| 1916 indicate which) | | ے ا | Cemented with posks c'e% Get sx. | t determined by | Cemented withsx. | aetermined by <u>CIRCULATION</u> | Cemented with 300 sx. | ar Data | 7-35-E R-19-S | |

| 5 | | · | 2. | Othe | or | BA | Tubi |
|---|--|---|-------------------------|----------------------------------|---|--------------------------------|-------------|
| Give this | CONNECTED TO INVECTION 3/12/65, Prubbed AND ARADONED Has the well ever been perforated in any other zone(s)? and give plugging detail (sacks of cement or bridge plug(| Is this If no, | Name | Other Data 1. Name o | (or describe any other casing-tubing seal). | BAKER MODEL AD + OR EQUINALENT | Tubing size |
| the d | the we | | of Fi | בה הש | ibe a | ODEL | ze |
| epth | the well ever | new we | Field on | ta of the injection formation | and m | AD-1 | 23/8 |
| to and | ECTION of bee | 911 dr | Pool | etion | ner ca | DR FE | |
| name Avokiz | 3/12 n peri | illed se was | (if e | forms | sing-t | MAN | |
| of an | forate | for i | pplic | | :ubing | 2 | lined |
| the depth to and name of any overlying and/or underl area. Parkt Saw Arubkes West - S600 | TO INSECTION 3/12/65, Prubbed AND ARANDWED ell ever been perforated in any other zone(s)? plugging detail (sacks of cement or bridge plug(| Is this a new well drilled for injection? $\angle \!$ | or Pool (if applicable) | | seal | | lined With |
| rlyin | any o | ion? origi | | Ž | · | | |
| g and/ | ther z | // helly | PEARL QUEEN | | | P | PLASTIC |
| or un | dge p | Yes drill | ueen | | | (mater | SITC |
| | 8 - | _ 🔻 | | | | 1 0 | |
| ying oil | 2//3/8/ ist all s | N NO | | | | 4675 | |
| Or | /8/ 11 suc | > | | | | | |
| zse | such perforated | 70 | | | | | |
| zones | forat | Į Į | | | | | |
| (pools) | ed in | 2 | | | | feet | set. |
| s) in | intervals | No No The The Fire Oil Production | | | | e cr | in a |
| | 1 6 | الا الح | | | | | |

| Injec | 17. 10. 07 OPENIOLE 4939 Total dep | દ ્ | Size Size CMT. TO SURFACE Hole S | Schematic | RYRAMID ENERGY INC. WEST OPERATOR (660 FSL & 1980 FEL WELL NO. FOOTAGE LOCATION |
|-------------------------------------|---|--|---|---------------------------------------|---|
| Injection interval perforated A730 | Long string Size $\frac{S^{1/2}}{2}$ "Cemented with $\frac{200}{200}$ sx. TOC $\frac{33.45}{33.45}$ feet determined by $\frac{80.45}{200}$ Footblesize $\frac{7\%}{8}$ Total depth $\frac{4939}{200}$ | Size NoNE "Cemented with sx. TOC feet determined by Hole size | SURFACE "Cemented with 300 sx. SURFACE feet determined by CARCULATION size 1214" | <u>Tabular Data</u> Surface Casing | ST PEARL QUEEN UNIT LEASE 28 T-19-S RANGE TOWNSHIP RANGE |

| | 5. | • | | ₩ | 2. | • | Othe | (or | \$v | Tubi |
|------------------------------------|--------------|---|---|---|-------------------------------|---------------|------------|---|--|-------------------|
| this | Give | Has t | If no | Is th | Name | Name e | Other Data | (or describe any other casing-tubing seal). | BAKER MODEL AD-1 OR LAWINALENT (brand and model) | Tubing size |
| | . I | the we | o, fo | this e | 0 T | 07 | B | ibe | Vope | ze _ |
| H | dep)t | the well ever give plugging | n Kh | new | ield | the injection | | any | d an | 23/2 |
| EVE | T to | | at pu | wel] | 0 p | nject | | othei | 300 | 8 |
| SAN | and | been de ta | rpos | dri | 001 | | | Cas | | |
| PADA | n n m e | perf | е жас | lled | (if e | formation | | ing-t | t inal | |
| Brea. PEARL SAN ANDRES WEST -SGOO' | ofa | been perforated in any other detail (sacks of cement or bı | no, for what purpose was the well originally drilled? | a new well drilled for injection? /_/ Yes | Field or Pool (if applicable) | tion | | ubin | 0 7 | line |
| EXT | אָר פע פע | ed ir | wel] | injed | cable | | | ខ្លួ | | lined with |
| 560 | /erly | emen | ori | tion | l | QUEEN | | 1). | | '' |
| | i Gut | in any other zone(s)? L cement or bridge plug(s | ginal | , ' | Per | 2 | | | | PLASTIC |
| | and/o | er zo brid | lly d | Υ /· | Pearl Queen | | | | Į pa | \$17C |
| | r uno | ne(s) | rill | o O | È | | | | packer at | (ma |
| | derly | s)gnj | ed? _ | \boxtimes | | | | | 1 B | materia |
| , | ing oil | List : | 0 | Z O | | | | | 4700 | |
| 1 1 ! | i i | st all s used) | | | | | | | 8 | |
| 1 1 1 | or gas | such | PRODUCTION | | | | | | | |
| 1 1 1 | s zones | perforated | TON | | | | | | | |
| 1 1 | l l | orate | | | | | | | | |
| | (pools) | | | | | | | | _ feet | o cr |
| 1 1 1 | s) in | intervals | | | | | | | et | ອ ນ. |
| | | | 1 | | • | • | | | | |

| | 4957 | 17 OPPLIFOLD | 5/2 CSG AT 4929 CMT 12/300 SKS. | 4728 - 4738 4864 - 4873 | B B. | 3000 | - To or cement | | d K | 856 CSC, AT 326 | \$ \$00 | J. | | Schematic | WELL NO. FOOTAGE LOCATION | PYRAMID ENERGY, INC. |
|---|-------------------------------|------------------|---------------------------------|----------------------------|-------------|-----------|--------------------|---------------|----------------------------|-----------------|-------------------------------|---------------|----------------|-----------|---------------------------|----------------------|
| (perforated or open-hole OPENHOLE 4929-4957 | Injection interval PERFORATED | Total depth 4957 | Hole size $\frac{360}{7\%}$ fe | | Long string | Hole size | J010 | Size NONE " | SukARE Intermediate Casing | Hole size 1214 | TOC SURFACE fe | Size 85/8 " | Surface Casing | Tabu | SECTION SECTION | WEST PEASE QUEEN UNI |
| e, indicate which) feet | PATO | | eet determined by TEMP | | | | feet determined by | Cemented with | | | eet oetermined by CIRCULATION | Cemented with | | ular Data | T-19-S R-35 | |
| | | | EMPERATURE SURVE | gx. | , | | | s × | | | 57102 | 300sx. | | | C | |

| • | • | • | • | F 3 | <u> </u> | 9 |
|---|--|---|--|---|----------|---------------|
| . Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) this area. FEARL SAN ANNES, WEST - 5600' | Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) <u>No</u> | . Is this a new well drilled for injection? /// Yes /X/ No If no, for what purpose was the well originally drilled? On Probuction | Name of the injection formation QUEEN Name of Field or Pool (if applicable) | or describe any other casing-tubing seal). ther Data | paci | set in set in |
| i n | vals | 1 | | | | ຶ |

S

| | OPENHOLE SIZE - 31/8" | | 4900 - 4910 4972 - 4974 | 11 B 4764 - 4766 | | TO SURPICE VIA97 SKS | in the | CMT. CIRC. TO SURFACE | | HOLE SIZE 12/4 | 1163 | | Schematic | WELL NO. FOOTAGE, LOCATION | 660 131- | PARAMID ENERGY, INC. WI |
|--|-------------------------|---------------------------------|---------------------------------------|------------------|-----------|----------------------|------------------|-----------------------|------------------|-------------------------------|-----------------------|----------------|--------------|----------------------------|---------------|-------------------------|
| (perforated or open-ho OPENHOLE 4989-501 | Injection interval Pres | Hole size 7/8" Total depth 5011 | | string | Hole size | 700 | Size NONE " | Intermediate Casing | Hole size \≥ 1/4 | | Size 85/8 " | Surface Casing | Tat | SECTION | 29 | JEST REARL QUEDY UNIT |
| to 4974 feet hole, indicate which) | PERFORMED | | feet determined by <u>CIRCULATION</u> | | | feet determined by | Cemented withsx. | | | feet oetermined by CHOULATION | Cemented with 275 sx. | | Sabular Data | TOWNSHIP RANGE | 7-19-5 R-35-E | |

| | 5 | • | | Ÿ | 2. | | 040 | (or | (Z) | Tub |
|-------------------------------------|--|---|--|--|---------------------------------------|--|------------|---|---|---|
| area. HEARL SAN ANDRES, WEST - 5600 | Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) | Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) NO | If no, for what purpose was the well originally drilled? On Probuction | Is this a new well drilled for injection? 🖊 Yes 🐰 No | Name of Field or Pool (if applicable) | Name of the injection formation QUEEN SAND | Other Data | (or describe any other casing-tubing seal). | OMER Model AD-1 OR EQUINALENT packer at 4740 feet | Tubing size 23/8 lined with PLASTIC (material) set in |
| | in | vale | 1 | | 1 | ł | | | | ຍ |

| NELL WAS PEA 1-28-77. PURAMID PROPOSES TO DRILL & CLEMN OUT ALL CEMONT, REMINIORS, | TD. OPECHALE UCK | 1/4 HOLE PROM ANOZ-SOZI | | 11. CC AT A | RILLAGUE PK. R. 4812 - 1912 6 | | ANL PKR AT 4747 - 3894 - 3774-4776 | > \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | THE STATE OF THE STATE OF THE CALL STATE OF THE CALL | Also SK | 2"CSG. TO SURFIGER TO SURFICE COMT. CIRC. TO SUR | D & S | 12 las | 6.13731 | Schematic | WELL NO. FOOTAGE LOCATION | | RRAMID ENERGY NC. |
|--|------------------|-------------------------|-----------------------|-------------------------------|-------------------------------|-------------------------|------------------------------------|---|--|---------|--|--------------------------------------|------------------------|----------------|--------------|---------------------------|----------|---------------------|
| (perforated of opposited of opposited of opposited of opposited op | Injection int | Total depth <u>5021</u> | A% Get Hole size 71/8 | 100 19 Singe - 3 | Size 4/2 | Long string | 3894 Hole size | 100 | Size NONE | | TO SURFACE 1001e size 12/4 | TOC SURFACE | Size & | Surface Casing | | | TI TI | WEST PEARL QUEEN UN |
| reet to 4959 repen-hole, indicate which) 4952-502/ | perpared | | | feet determined by CALCULATED | | Dun Sange - 50 / Door A | | feet determined by | " Cemented withsx. | | | feet aetermined by <u>CRCALATION</u> | " Cemented with 60 sx. | | Tabular Data | TOWNSHIP RANGE | | |

| ٥ | ubing size 2% lined with RASTIC set in a |
|----------|---|
| ω | SAKER Money AD-1 or FownALENT packer at 4750 feet (brand and model) |
| 0 | describe any other casing-tubing seal). |
| ther | er Data |
| • | Name of the injection formation QUEEN SAND |
| • | Name of Field or Pool (if applicable) PEARL QUEEN |
| • | Is this a new well drilled for injection? 🖊 Yes 📈 No |
| | If no, for what purpose was the well originally drilled? OL PRODUCTION |
| • | Has the well ever been perforated in any other zone(s)? List all such perforated interval and give plugging detail (sacks of cement or bridge plug(s) used) <u>NO</u> |
| | |
| • | Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. PARL SAN ANDRES NEST-5600 |
| | |
| | |

| | 1 10126-4937 1 10125172-7 18 A112 CSG, AT 27:62 CMT W11700 SKS. OPEN HOLE T.D. 5019 | TOO 2135 PROM TEMPERATURE SURVEY | SUMPACE W/200 SKS | Schematic | PERATOR GOTAGE LOCATION |
|---|---|--|---|--------------|---|
| Injection interval PERPANED A772 | Size 4758 "Cemented with 1700 sx. TOC 2135 feet determined by TEMPERATURE Survey Hole size 77/8 Total depth 5019 | Size NONE "Cemented with sx. TOC feet determined by Long string | Size 5 % "Cemented with 200 sx. TOC SURFACE feet determined by CIRCULATION Hole size 121/4 Intermediate Casing | Tabular Data | LEASE SECTION T-19-5 TOWNSHIP RANGE |

| 3. Is this a new well drilled for injection? /_/ Yes /X No If no, for what purpose was the well originally drilled? ②∟ Pkobuc∏ov |
|---|
| |
| 1. Name of the injection formation QUEEN SAUD 2. Name of Field or Pool (if applicable) PEARL QUEEN |
| Other Data |
| (or describe any other casing-tubing seal). |
| |
| Tubing size 23/8 lined with PLASTIC (material) |

| | RBPE 4700 - 376 1616 Size 77/8 TO 4950 - | Schematic Schematic GL-3714 ONT PLUG IN AVECUA TO SUPPRICE CUTSIDE AVECUA AVECUA SCHEMATIC TO SCHEMATIC | PYRAMID ENERGY, INC. OPERATOR (MOFUL & 1980 FWL WELL NO. FOOTAGE ILOCATION |
|--|---|--|---|
| Injection interval PERPONATE) A758 feet to 4902 (perforated or open-hole, indicate which) OPEN-HOLE A50-4996 | Long string Size 4/2" "Cemented with 1340-157 Shape sx. TOC 1920/by took - 157 Stage feet determined by EMPERATURE SURVES Hole size 7/8 Total depth 4996 | [H] [m | WEST PEARL QUEEN UNIT LEASE 33 T-19-S SECTION TOWNSHIP RANGE |

| 5. | 4. | | 3 . | 2. | <u>.</u> | Other | (or | lov : | → = - |
|---|--|--|--|---|---|---------|---|------------|---|
| Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. FEARL SAN ANDRES, NEST. Seed | Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) <u>NO</u> | If no, for what purpose was the well originally drilled? OL PRODUCTION | Is this a new well drilled for injection? 🔼 Yes 😿 No | Name of Field or Pool (if applicable) FEARL QUEEN | Name of the injection formation (XUEEN SAND | er Data | describe any other casing-tubing seal). | (material) | Tubing size $>3/8$ " lined with DLASTIC |

| | Allz CS SEI MI 2705 CMT. ISTSTAGE 1650 SKS CMT. A76 GEL | 4735 - 4737 4868 - 4870 | SURFACE STO SKL. | MY 300 SKS. | Schematic | OPERATOR 43 660 FUL & 660 FEL WELL NO. FOOTAGE LOCATION |
|--------------------|---|--|------------------|--|-----------|---|
| Injection interval | Total depth 4905 | Hole size Long string Size $4^{1}/2$ " | TOC NONC " | Size 85/8 " TOC SURTINE fellole size 2/4 | Tabul | LEASE SECTION |
| | feet determined by Cikculd; and | IST STAGE LOSUSKS CATE AND STAGE SOOKS CATE AND STAGE 550 SKS CATE AND GEL | Cemented withsx. | eet oetermined by ARCULATION | ular Data | T-19-S R-35-E TOWNSHIP RANGE |

(perforated or open-hole, indicate which)

leet

| 5 | • | | • | 2. | 1. | Other | or | T & |
|---|--|--|--|---|--|---------|---|--|
| Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Peak Shy Avakes Viles7-5600' | Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) <u>NO</u> | If no, for what purpose was the well originally drilled? Oh Probuction | Is this a new well drilled for injection? 🖊 Yes 📈 No | Name of Field or Pool (if applicable) PEARL QUEEN | Name of the injection formation Queen Sano | er Data | describe any other casing-tubing seal). | Tubing size 23/8 lined with PLASTIC (material) set in a (material) (material) feet (brand and model) |

| PURAMID PROPOSED TO DRILL OUT ALL PLUGS AND CLEAN WELL OUT TO ORGINAL TD-5028' | WELL WAS PEA Z/2/81. | 103028 | WIZOSKI WORK MITOGET | 5 | 4505 - 4505 P.B.T.D 4585 | HII II | CARREN WISS CATE TO WEST AND STREET AND STRE | | 6 / | 880-1780 FILLS TOC TOC TO 1934 | | Va: | D'TO SURFINEE OF THE STEE STEE STEE STEE STEE STEE STEE | P. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. | | Schematic | WELL NO. 1980 [NL : 1980 [ELL NO. FOOTAGE LOCATION | PERAMID ENERGY, NC. |
|--|----------------------|--------------------------------|----------------------|-----------------|--|-----------------|--|-----------|------------------------|--------------------------------|---------------------|-----------|---|---|----------------|--------------|--|-----------------------|
| ated or open-hole, indicate which) | , de . | In iachion interval DeckerATED | Total depth 5028 | Hole size 7% | TOC 3930 (IST STANCE) feet determined by CALCULATION | " Cemented with | Long string | Hole size | TOC feet determined by | Size NONE "Cemented with sx. | Intermediate Casing | Hole size | TOC SURFACE feet oetermined by CLECTON | Size 85% "Cemented with 100 sx. | Surface Casing | Tabular Data | SECTION TOWNSHIP RANGE | WEST PEARL QUEEN UNIT |

| 5 | | • | | | 2. | | Other | (or | W | T u b |
|--|----|---|--|--|---|---|---------|---|--|--------------------------------------|
| Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Frank Shy ANDAES, WEST-5600 | 9) | | If no, for what purpose was the well originally drilled? OL PRODUCTION | Is this a new well drilled for injection? 1 Yes 1 √ No | Name of Field or Pool (if applicable) FEARL QUEEN | Name of the injection formation (Sugge) Sand | er Data | (or describe any other casing-tubing seal). | BAKER Moder AD-1 of Found ENT packer at 4700' feet (brand and model) | Tubing size 23/8 lined with 12/15/15 |

| | NBL WAS PAA 12/28/78 | T.D. OPENHOLE -5036 | CAN LES ON A STATE OF | \$ A150 - A150 | 3/8 TUBING - 6 1 1 200 - 4906 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 2015 of Con. | 1 SOSKS INCOLUMN SINCE | | 25 | 3 5 7 | Co. c | BY TO SURFACE OF | 8 | | Schematic | WELL NO. FOOTAGE LOCATION | OF TRAINING | PURAMID ENDRUY INC. |
|---|----------------------|---------------------|---|---------------------------------------|----------------------------------|---------------------------------------|--------------|------------------------|--------------------|-----------------|---------------------|-----------|--------------------------------|------------------|----------------|---------------|---------------------------|-------------|----------------------|
| (perforated or open-hole, indi OPEN-HOLE 4980-5036 | on in | Total depth 4985' | Hole size 63/4" | 10C 3895 (1515) | CHAIR CTAIRS | Long string | | Hole size | 100 | てのと同 | Intermediate Casing | Hole size | TOC SURTACE | Size 85/8 | Surface Casing | I | SECTION | ा । अ | NEST BARL QUEEN UNIT |
| cate which) | PERFORATED | | | feet determined by TEMPERATURE SURVEY | " Cemented with STSpec - 200 sx. | NO T | | | feet determined by | " Cemented with | | | feet determined by Checularian | " Cemented with | | Tabular Data | SHIP | īja La | UNIT |
| ſaet | | | | MARATURE SURVEY | Sm-8 - 200 8x. | STACE TO SEE | | | | ø×. | | | Jeculianor! | / <u>(X)</u> s×. | | | RANGE | | |

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|--|--|--|---|---|--|----------|---|---|--|
| Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Fixe San Anders, NEST - 5600' | Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) | If no, for what purpose was the well originally drilled? OL PRODUCTION | Is this a new well drilled for injection? $/\!$ | Name of Field or Pool (if applicable) ParkL Queen | Name of the injection formation Queen SAN) | ner Data | (or describe any other casing-tubing seal). | BAKER MODEL AD-/ OR FOUNDENT packer at 4700' feet | Tubing size 23/8 lined with PLASTIC material) set in a |

| | OPEN-HOLE SIZE - 37/8" | CIBPAT 4975 - CMT. IST SHIPE WITH A 1977 - 200 SKS CMT. A 16 GEL | CIBP AT 4746 - 1 30 4789-4791 21 4789-4791 21 4789-4791 | +TOC 3932 (CALCULATED) HOLE | CMT 220 SKS CMT. A'B GEL | 7 | (103.0 | KG 1 U/P : 6 | | Schematic | WELL NO. FOOTAGE LOCATION | PYRAMID ENERGY INC. |
|---|-------------------------------|--|---|-----------------------------|--------------------------|---------------------|-----------|--|-----------------------------------|-----------|---------------------------|-----------------------|
| (perforated or open-hole, indicate which) feet OPEN-HOLE 4997- 5020 | Injection interval PERFORATED | 100 3932 (NTS | Size 4/2 " | Hole size | TOC | Intermediate Casing | Hole size | TOC SURFACE feet determined by CINCULATION | Size 85/8 " Cemented with 100 sx. | | SECTION TOWNSHIP RANGE | WEST PEARL QUEEN UNIT |

| 5 | • | | 1. 1 | Other | Tubii | |
|--|---|---|---|----------|--|--|
| Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. PEARL SAN ANDRES NEST-5600' | Has the well ever been perforated in any other zone(s)? List all such perforated intervalend give plugging detail (sacks of cement or hridge plug(s) used) NO | Is this a new well drilled for injection? ∠7 Yes 🐰 No If no, for what purpose was the well originally drilled? <u>O∟ Robuc<i>no</i>u</u> | Name of the injection formation QUEEN SAND Name of Field or Pool (if applicable) PEARL QUEEN | ner Data | Tubing size 23/8 lined with PLASTIC (material) set in a (material) (material) (material) (or describe any other casing-tubing seal). | |

PYRANID ENERGY, INC.

WEST PEARL QUEEN UNIT #100

LOCATION: SEC. 21, T19S, R35E

CASING: 13 3/8" @ 128' W/125 SX

5 1/2" @ 4989' W/300 SX. CHT.

PERFORATIONS: 4763-4775, 4886-4907

4933-4938, 4945-4953 (QUEEN)

TD: 49901

WEST PEARL QUEEN UNIT #104

LOCATION: SEC. 21, T19S, R35E

CASING: 8 5/8° @ 328' W/265 SX

4 1/2" @ 5049' W/240 SX CMT.

PERFORATIONS: 4814-4820, 4933-4940

5000-5008

50501 TD:

WEST PEARL QUEEN UNIT #105

LOCATION: SEC. 21, T19S, R35E

CASING: 13 3/8" @ 123' W/125 SX

5 1/2" @ 5082' W/300 SX CMT.

PERFORATIONS: 4793-4800, 4916-4926

4966-4972

TD: 5117'

WEST PEARL QUEEN UNIT #106

LOCATION: SEC. 21, [198, R35E

CASING: 8 5/8" @ 327' W/300 SX.

4 1/2* @ 4991' W/350 SX CMT.

PERFORATIONS: 4762-4772, 4880-4910

4780-4988

TD: 50001 WEST PEARL QUEEN UNIT #107

LOCATION:

SEC. 28, T19S, R35E

8 5/8° @ 303' W/300 SX CASING:

4 1/2" @ 4994' W/350 SX. CHT.

PERFORATIONS: 4715-4730, 4834-4863

4898-4904 (QUEEN)

TD: 50001

WEST PEARL QUEEN UNIT #108

LOCATION: SEC. 28, T195, R35E

8 5/8° @ 326' W/300 SX CASING:

4 1/2" @ 4961' W/350 SX. CHT.

PERFORATIONS: 4700-4710, 4815-4845

4884-4895 (QUEEN)

TD: 49751

WEST PEARL QUEEN UNIT #109 -----

LOCATION: SEC. 29, T19S, R35E

CASING: 8 5/8" @ 326' W/300 SX

4 1/2" @ 5002.41' W/350 SX. CMT.

PERFORATIONS: 4734-4754 (QUEEN)

TD: 50201

WEST PEARL QUEEN UNIT #110

LOCATION: SEC. 29, T19S, R35E

CASING: 13 3/8" @ 88' W/80 SX

5 1/2" @ 4920' W/300 SX.CNT.

PERFORATIONS: 4770-4785, 4898-4912

4920-4998 (QUEEN)

TD: 49981

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WEST PEARL QUEEN UNIT #111

LOCATION:

SEC 29, T198, R35E

CASING:

8 5/8" @ 312" W/300 SX.

4 1/2" @ 5029' W/340 SX CMT.

PERFORATIONS: 4802-4810

4932-4938, 5000-5008

TD:

50301

WEST PEARL QUEEN UNIT #112

LOCATION:

SEC 29, T19S, R35E

CASING:

13 3/8° @ 100' W/80 SX.

7° @ 4932' W/150 SX. CMT.

PERFORATIONS: 4822-4829, 4830-4836

4953-4962

TD:

50301

WEST PEARL QUEEN UNIT \$117

LOCATION:

SEC 29, T19S, R35E

CASING:

13 3/8° 2 87' W/90 SX.

5 1/2" @ 4997' W/300 SX. CHT.

PERFORATIONS: 4819-4821

4857-1859

TD:

50501

WEST PEARL QUEEN UNIT #118

LOCATION:

SEC 29, T19S, R35E

CASING:

8 5/8° @ 308' W/300 SX.

4 1/2" @ 5009' W/2050 SX. CMT.

PERFORATIONS: 4782-4790, 4914-4922

4981-4987, 4996-5000

50101

TD:

WEST PEARL QUEEN UNIT #119

LOCATION:

SEC. 29, T19S, R35E

CASING:

13 3/8" @ 100' W/100 SX.

5 1/2° @ 4943' W/300 SX. CMT

PERFORATIONS: 4752-4756, 4765-4766

4889-4898, 4954-4955

TD:

49901

WEST PEARL QUEEN UNIT \$120 -----

LOCATION:

SEC. 28, T19S, R35E

CASING:

8 5/8" @ 316' W/300 SX.

5 1/2" @ 4915' W/350 SX. CMT.

PERFORATIONS: 4733-4747

4860-4871

TD:

4946'

WEST PEARL QUEEN UNIT #121

LOCATION:

SEC. 28, T19S, R35E

CASING:

8 5/8° @ 306' W/300 SX.

5 1/2" @ 4914' W/350 SX. CMT.

PERFORATIONS: 4844-4857

4718-1726

TD:

49211

WEST PEARL QUEEN UNIT #122

LOCATION:

SEC. 28, T19S, R35E

CASING:

TD:

8 5/8" @ 304' W/300 SX.

5 1/2° @ 4931' W/200 SX. CMT.

PERFORATIONS: 4708-4719, 4826-4836

4886-4888, 4897-4899

4906-4908

49451

PBTD:

18881

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WEST PEARL QUEEN UNIT #123

LOCATION: SEC. 28, T17S, R35E

CASING: 8 5/8" @ 415' W/250 SX.

4 1/2" 9 4932' W/200 SX, CHT.

PERFORATIONS: 4720-4730, 4842-4951

4901-4904, 4912-4916

TD: 4932' PBTD: 4927'

WEST PEARL QUEEN UNIT #124

LOCATION: SEC. 28, [178, R35E

CASING: 8 5/8" @ 301' W/300 SX.

5 1/2" 9 4911' W/200 SX, CMT.

PERFORATIONS: 4854-4864

4730-4736 (QUEEN)

TD: 4939'

WEST PEARL QUEEN UNIT \$125

LOCATION: SEC. 29, T198, R35E

CASING: 8 5/8° @ 302' W/300 SX.

5 1/2° @ 4924' W/200 SX. CMT.

PERFORATIONS: 4725-4733

4855-4865

TD: 4949'

WEST PEARL QUEEN UNIT #126

LOCATION: SEC. 28, T198, R35E

CASING: 8 5/8* ₽ 326' W/300 SX.

5 1/2° @ 4930′ W/200 SX. CMT.

PERFORATIONS: 4728-4738

1864-1875

TD: 4957'

WEST PEARL QUEEN UNIT #127

LOCATION: SEC. 29, T19S, R35E

CASING: 13 3/8" @ 90' W/80 SX.

5 1/2" @ 4939' W/300 SX. CHT.

PERFORATIONS: 4746-4761

4888-4908

TD: 4939'

WEST PEARL QUEEN UNIT #128

1.OCATION: SEC. 29, T198, R35E

CASING: 8 5/8' @ 309' W/275 SX.

4 1/2" @ 4989' W/2173 SX.CNT.

PERFORATIONS: 4764-4766

4908-4910, 4972-4974

TD: 5011'

WEST PEARL QUEEN UNIT #129

LOCATION: SEC. 29, T19S, R35E

CASING: 13 3/8" @ 100' W/50 SX.

5 1/2" @ 4965' W/350 SX. CHT.

PERFORATIONS: 4475-4485, 4910-4938

TD: 4996'

WEST PEARL QUEEN UNIT #130

1.0CATION: SEC. 29, T19S, R35E

CASING: 8 5/8" @ 126' W/100 SX.

4 1/2" @ 4949' W/250 SX. CMT

PERFORATIONS: 4794-4796, 4937-4939

TD: 4950'

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WEST PEARL QUEEN UNIT \$136

LOCATION: SEC. 32, T19S, R35E

8 5/8" @ 101' W/100 SX. CASING:

4 1/2° @ 4948' W/250 SX.CMT.

PERFORATIONS: 4785-4787, 4929-4929-4931

50271 m:

WEST PEARL QUEEN UNIT #137

SEC. 32, T19S, R35E LOCATION:

CASING: 8 5/8* @ 133' W/90 SX.

4 1/2" @ 4985' W/250 SX.CHT.

PERFORATIONS: 4785-4787

4930-4932

TD: 50511

WEST PEARL QUEEN UNIT #138

LOCATION: SEC. 32, T198, R35E

CASING: 8 5/8° @ 108' W/60 SX.

4 1/2" @ 4959' W/250 SX.CMT.

PERFORATIONS: 4774-4776

4924-4926

TD: 50211

WEST PEARL QUEEN UNIT #139

______ LOCATION:

SEC. 32, T198, R35E

8 5/8" @ 301' W/200 SX. CASING:

4 1/2" @ 4968' W/1700 SX.CMT.

PERFORATIONS: 4772-4782, 4926-4932

4968-5019 OH

TD: 50191 WEST PEARL QUEEN UNIT #140

SEC. 33, T19S, R35E LOCATION:

CASING: 8 5/8" @ 350' W/300 SX.

4 1/2° @ 4970' W/1800 SX. CMT.

PERFORATIONS: 4773-4785

4920-4926

4970 TD: PBTD: 49541

WEST PEARL QUEEN UNIT #141

LOCATION: SEC. 33, T19S, R35E

CASING: 8 5/8" @ 608' W/400 SX.

4 1/2" @ 4950' W/1790 SX. CMT.

PERFORATIONS: 4758-4770

4894-4902

TD: 49961

WEST PEARL QUEEN UNIT #142

SEC. 33, T19S, R35E LOCATION:

CASING: 8 5/8* @ 327' W/300 SX.

4 1/2" @ 4933' W/1850 SX. CMT.

PERFORATIONS: 4737-4741

4881-4885

(D: 4981' PBTD: 4933'

WEST PEARL QUEEN UNIT #143

LOCATION: SEC. 33, T19S, R35E

CASING: 8 5/8° @ 303' W/300 SX.

4 1/2" @ 4905' W/2200 SX. CMT.

PERFORATIONS: 4735-4737

4868-4870

49051

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WEST PEARL QUEEN UNIT \$144

LOCATION: SEC. 33, T198, R35E

CASING: 8 5/8" @ 141' W/100 SX.

4 1/2° @ 5005' W/250 SX.CMT.

PERFORATIONS: 4890-4892, 4949-4951

4750-4752, 4960-4962

TD: 5012' PBTD: 5000'

WEST PEARL QUEEN UNIT \$145

LOCATION: SEC. 33, T198, R35E

CASING: 8 5/8" @ 148' W/100 SX.

4 1/2" @ 4995' W/250 SX. CMT.

PERFORATIONS: 4755-4757, 4860-4862, 4901-4903

4963-4965, 4973-4975

TD: 5028'

WEST PEARL QUEEN UNIT \$146

LOCATION: SEC. 33, T19S, R35E

CASING: 8 5/8* @ 146' W/100 SX.

4 1/2" @ 4965' W/250 SX. CMT.

PERFORATIONS: 4767-4769, 4880-4882

4780-4782, 4927-4929

TD: 4970' PBTD: 4961'

WEST PEARL QUEEN UNIT #147

LOCATION: SEC. 33, T198, R35E

CASING: 8 5/8' @ 153' W/100 SX.

4 1/2" @ 4980' W/250 SX. CMT.

PERFORATIONS: 4802-4804

4904-4906, 4950-4952

TD: 5026'

WEST PEARL QUEEN UNIT \$148

1.0CATION: SEC. 32, T19S, R35E

CASING: 8 5/8" @ 145' W/100 SX.

4 1/2" @ 4977' W/250 SX. CMT

PERFORATIONS: 4802-4904

4949-4951

TD: 5036'

WEST PEARL QUEEN UNIT #149

1.0CATION: SEC. 32, T198, R35E

CASING: 8 5/8' 0 145' W/100 SX.

4 1/2" @ 4977' W/250 SX. CHT

PERFORATIONS: 4789-4791

4938-4940

TD: 5020'

WEST PEARL QUEEN UNIT #150

1.OCATION: SEC. 32, T195, R35E

CASING: 8 5/8' @ 130' W/100 SX.

4 1/2" @ 4936' W/250 SX. CHT

PERFORATIONS: 4786-4788

4884-4886, 4928-4930

TD: 5020'

WEST PEARL QUEEN UNIT #151

LOCATION: SEC. 32, T19S, R35E

CASING: 8 5/8' @ 140' W/100 SX.

4 1/2" @ 4970' W/250 SX. CMT

PERFORATIONS: 4048_4052, 4056-4070

4900-4902, 4076-4080

4795-4797, 4850-4852

TD: 5040'

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WEST PEARL QUEEN UNIT #159

SEC. 32, T198, R35E LOCATION:

13 3/8" @ 105' W/80 SX. CASING:

7" @ 4701' W/100 SX, CHT, U

PERFORATIONS: 4940-4952

4774-4780

TD: 50201 PBTD: 5010'

WEST PEARL QUEEN UNIT \$160

SEC. 32, T17S, R35E LOCATION:

8 5/8" @ 144' W/145 SX. CASING:

5 1/2" @ 5060' W/300 SX. CNT.

PERFORATIONS: 4790-4806, 4898-4905

4942-4950, 5005-5012

TD: 50601 PBTD: 50451

WEST PEARL QUEEN UNIT #161

LOCATION: SEC. 33, T19S, R35E

CASING: 8 5/8° @ 140' W/100 SX.

4 1/2" @ 5011' W/200 SX. CMT.

PERFORATIONS: 4776-4778, 4876-4878

4924-4926, 4982-4984, 4996-4998

TD: 5015' PBTD: 50051

WEST PEARL QUEEN UNIT \$162

SEC. 33, T198, R35E LOCATION:

CASING: 8 5/8° @ 136' W/100 SX.

4 1/2" @ 5063' W/275 SX, CMT,

PERFORATIONS: 4771-4773, 4918-4920

4978-4980, 4972-4994

TD: 50801 PBTD: 50341 WEST PEARL QUEEN UNIT #163

LOCATION: SEC. 33, T19S, R35E

8 5/8" @ 382' W/100 SX. CASING:

5 1/2° 9 5019' W/350 SX. CMT.

PERFORATIONS: 4742-4744, 4888-4890

4951-4953

TD: 50201

WEST PEARL QUEEN UNIT \$164

LOCATION: SEC. 32, T19S, R35E

8 5/8° @ 381' W/250 SX. CASING:

5 1/2" @ 5054' W/400 SX. CNT.

PERFDRATIONS: 4784, 4785, 4933, 4934

5008, 5009

TD: 50551 PBTD: 50161

WEST PEARL QUEEN UNIT \$165

LOCATION: SEC. 29, T19S, R35E

CASING: 8 5/8" @ 377' W/250 SX.

5 1/2" @ 5064' W/400 SX. CMT.

PERFORATIONS: 5006, 5005, 4943

4942, 4807, 4806

TD: 50651

WEST PEARL QUEEN UNIT #166

LOCATION: SEC. 28, T19S, R35E

CASING: 8 5/8" @ 378' W/150 SX.

5 1/2" @ 5019' W/400 SX. CHT.

PERFORATIONS: 4735-4736, 4863-4864

4921-4922, 4970-4971

TD: 50201 PBTD: 49871

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WEST PEARL QUEEN UNIT #167

LOCATION: SEC. 29, T198, R35E

8 5/8" @ 357' W/400 SX. CASING:

5 1/2* @ 5049' W/400 SX, CMT.

PERFORATIONS: 4757, 4758, 4897, 4898

4959, 4960 (QUEEN)

TD: 50501

WEST PEARL QUEEN UNIT #169

SEC. 28, T19S, R35E LOCATION:

CASING: 8 5/8" @ 1800' W/600 SX.

5 1/2° @ 5000' W/1800 SX. CHT.

PRTD:

49751

PERFORATIONS: 4721-4727, 4846-4850

4910-4913, 4922-4926

50001

WEST PEARL QUEEN UNIT #170

TD:

LOCATION: SEC. 32, T19S, R35E

8 5/8" P 420' W/250 SX. CASING: 5 1/2" @ 5125' W/600 SX. CMT.

PERFORATIONS: 4788, 4789, 4791

4935, 4937, 5002, 5003

TD: 51251

WEST PEARL QUEEN UNIT #180

SEC. 28, T195, R35E LOCATION:

CASING: 8 5/8° @ 415' W/102 SX.

5 1/2" @ 5075' W/1040 SX. CHT.

PERFORATIONS: 4713-4718

4830-4921 (QUEEN)

TD: 50751 WEST PEARL QUEEN UNIT #182

LOCATION: SEC. 29, T19S, R35E

CASING: 8 5/8" @ 400' W/250 SX

5 1/2" @ 5062' W/750 SX. CMT.

PERFORATIONS: 4876-4882, 4901-4903, 4934-4938

4944-4947, 4965-4967, 4984-4992

5028-5030

50921 TD: PBTD: 50171

WEST PEARL QUEEN UNIT #190

SEC. 29, T195, R35E LOCATION:

8 5/8° 9 400' W/250 SX. CMT. CASING:

5 1/2" @ 5000' W/1000 SX. CMT.

PERFORATIONS: 4735-4753, 4872-4882, 4904-4908

4936-4938, 4949-4950, 4954-4959, 4987-4996

TD: 50581

WEST PEARL QUEEN UNIT \$191

LOCATION: SEC. 28, T19S, R35E

CASING: 8 5/8" @ 415' W/250 SX. CMT.

5 1/2" @ 5075' W/1130 SX. CMT.

PERFORATIONS: 4720-4730, 4848-4857, 4860-1864, 4869-4871

4881-4883, 4887-4893, 4898-4905, 4914-4917

4925-4933, 4964-4967

TD: 50751

WEST PEARL QUEEN UNIT #193

SEC. 28, T19S, R35E LOCATION:

CASING: 8 5/8° @ 415' W/250 SX. CMT.

5 1/2° @ 5075' W/950 SX. CMT.

PERFORATIONS: 4689-4962, 4718-4720, 4728-4735

4863-4872, 4887-4892, 4907-4912

4927-4930

TD: 50751

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WEST PEARL QUEEN UNIT #194

LOCATION: SEC. 29, T198, R35E

CASING: 8 5/8" @ 410' W/250 SX.

5 1/2 @ 5100' W/1250' SX. CMT.

PERFORATIONS: 4761-4769, 4902-4914, 4917-4923

4926-4931, 4933-4941, 4950-4957

4968-4973, 4979-4989

TB: 5100'

WEST PEARL QUEEN UNIT #195

LOCATION: SEC. 29, T198, R35E

CASING: 8 5/8' @ 400' W/250 SX.

5 1/2 @ 5000' W/1000' SX. CMT.

PERFORATIONS: 4903-4915, 4970-4976

4982-4985, 4988-**49**92

TD: 5100'

WEST PEARL QUEEN UNIT #202

LOCATION: SEC. 32, T198, R35E

CASING: 8 5/8* @ 405' W/250 SX.

5 1/2" @ 5100' W/1000 SX. CMT.

PERFORATIONS: 4926-5044, 4749-4752

4759-4762, 4780-4786

TD: 5100' PBTD: 5050'

WEST PEARL QUEEN UNIT #204

LOCATION: SEC. 33, T198, R35E

CASING: 8 5/8" @ 400' W/250 SX.

5 1/2° € 5000′ W/1000 SX.CMT.

PERFORATIONS: 4769-4779, 4912-4922

4978-4984, 4989-4992, 4997-5000

TD: 5100'

WEST PEARL QUEEN UNIT #205

LOCATION: SEC. 33, T19S, R35E

CASING: 8 5/8" @ 400' W/250 SX.

5 1/2° @ 5095' W/1044 SX. CMT.

PERFORATIONS: 4713, 4714, 4749, 4950, 4751, 4895

4896, 4897, 4898, 4899, 4957, 4958

4959, 4960, 4967, 4968

TD: 5100' PBTD: 5022'

EAST PEARL QUEEN UNIT #23

LOCATION: SEC. 28, T19S, R35E

CASING: 9 5/8" @ 146' W/150' SX.

5 1/2" @ 4995' W/200 SX. CMT.

PERFORATIONS: 4698-4704, 4810-4816

4878-4881, 4887-4889, 4896-4899

TD: 4955'

EAST PEARL QUEEN UNIT #24

LOCATION: SEC. 28, T19S, R35E

CASING: 8 5/8" @ 172' W/150 SX.

5 1/2" @ 4960' W/200 SX. CMT.

PERFORATIONS: 4691 4703, 4804-4806, 4808-4810

4856-4859, 4868-4870, 4887-4889 (QUEEN)

fD: 4960'

EAST PEARL QUEEN UNIT #33

LOCATION: SEC. 27, T198, R35E

CASING: 8 5/8" @ 113' W/100 SX.

5 1/2 @ 5065' W/200 SX. CMT.

PERFORATIONS: 4708-4716

TD: 5070'

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EAST PEARL QUEEN UNIT #34

LOCATION: SEC. 28, T19S, R35E

CASING: 8 5/8" @ 100' W/100 SX.

5 1/2° @ 5057' W/200 SX. CMT.

PERFORATIONS: 4930-4933, 4884-4888, 4917-4919

4711-4716, 4896-4899

TD: 5075'

EAST PEARL QUEEN UNIT #35

LOCATION: SEC. 27, T19S, R35E

CASING: 8 5/8° @ 323' W/300 SX.

4 1/2" @ 4848' W/100 SX. CMT.

PERFORATIONS: 4848-4862(OPEN HOLE)

4728-4742, 4646-4656 (QUEEN)

TD: 4862'

EAST PEARL QUEEN UNIT #36

LOCATION: SEC. 27, T198, R35E

CASING: 8 5/8' @ 100' W/100 SX.

5 1/2° @ 5024' W/200 SX. CMT.

PERFORATIONS: 4738-4746, 4858-4861

4879-4886, 4910-4916

TD: 5032'

EAST PEARL QUEEN UNIT #42

LOCATION: SEC. 34, T198, R35E

CASING: 8 5/8" @ 230'

5 1/2" @ 5043' W/200 SX. CNT.

PERFORATIONS: 4750-4756, 4879-4881, 4882-4886

4872-1876, 4900-4902, 4905-4908

4915-4918, 4936-4939, 4946-4949, 4963-4965 (QUEEN)

TD: 5048'

EAST PEARL QUEEN UNIT #43

LOCATION: SEC. 34, T19S, R35E

CASING: 8 5/8" @ 96' W/85 SX.

5 1/2" @ 5041' W/200 SX, CMT.

PERFORATIONS: 4769-4771, 4897-4900, 4937-4938

4957-4958, 4971-4976, 4922

TD: 5050' PRTD: 5026'

EAST PEARL QUEEN UNIT #84

LOCATION: SEC. 27, T19S, R35E

CASING: 8 5/8° @ 400' W/250 SX.

5 1/2" @ 5000' W/1000 SX. CMT.

PERFORATIONS: 4861-4863, 4865-4869, 4870-4873

4888-4890, 4711-4712, 4740-4742, 4745-4746

TD: 5150'

1 AR GULF I.EA STATE

LOCATION: SEC. 32, T198, R35E

CASING: 13 3/8" @ 414' W/400 SX.

9 5/8" 9 5075' W/1500 SX. 5 1/2" 9 6028' W/350 SX. CMT.

PERFORATIONS: 5634-5660

TD: 10500' PBTD: 5986'

2 AQ GULF LEA STATE

LOCATION: SEC. 33, T198, R35E

CASING: 8 5/8' @ 415' W/250 SX.

5 1/2 6049' W/2050 SX. CHT.

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PERFORATIONS: 5616-5624, 5646-5654

5843-5851, 5809-5811

TD: 6050' PBTD: 5996'

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TABULATION OF DATA ON WELLS WITHIN AREA OF REVIEW

3 AQ GULF LEA STATE

LOCATION: SEC. 32, T195, R35E

CASING: 8 5/8* 9 411' W/350 SX.

5 1/2" @ 5934' W/1550 SX. CMT.

PERFORATIONS: 5838-5844, 5653, 5657, 5687, 5710, 5734

5754, 5755, 5766, 5790, 5794, 5798, 5809

5811, 5838-5844

TD: 5935' PBTD: 5883'

4-AQ GUI.F LEA STATE

LOCATION: SEC. 29, T19S, R35E

CASING: 8 5/8" 9 1819' W/900 SX.

5 1/2° @ 5920' W/1450 SX. CMT.

PERFORATIONS: 5756, 5764, 5834

5856, 5860

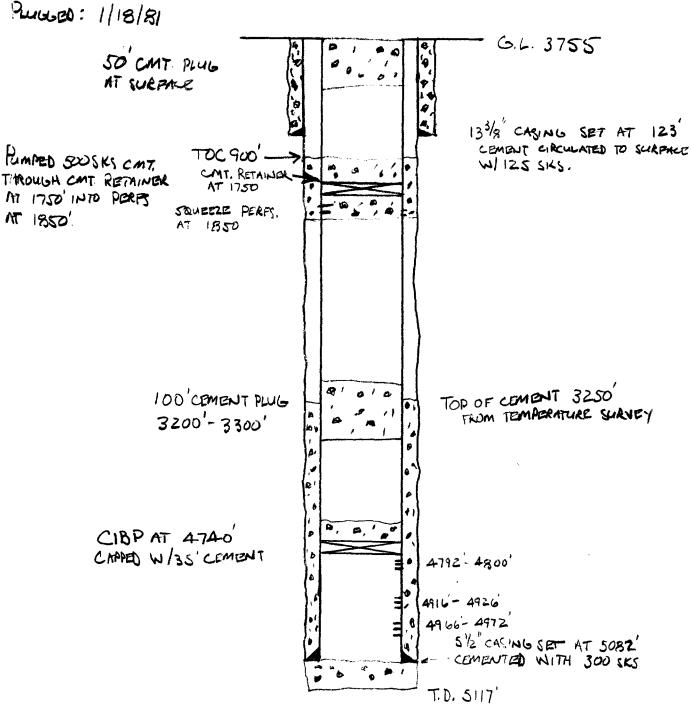
TD: 5922' PBTD: 5870'

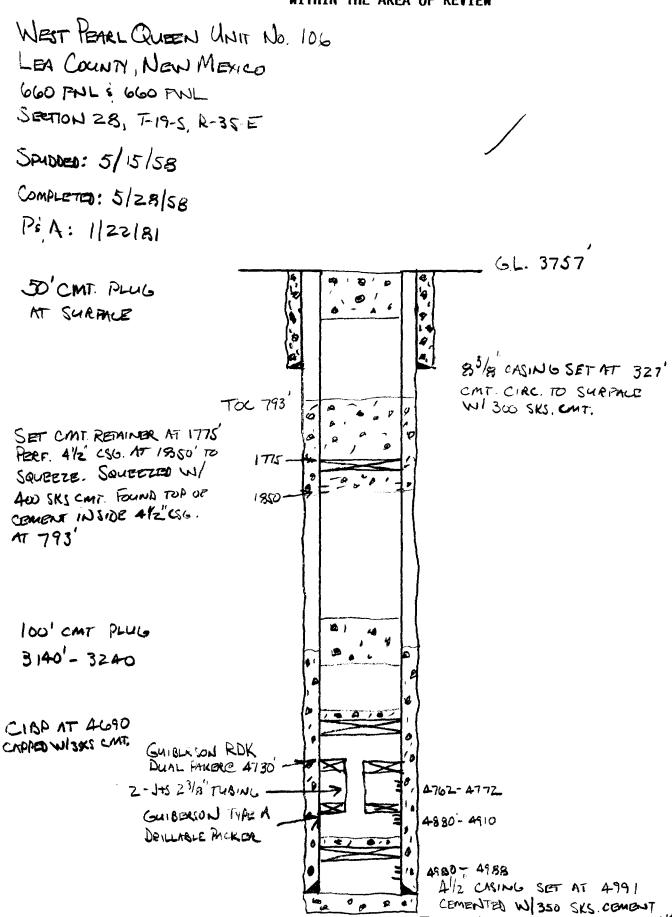
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WEST PEARL QUEEN UNIT No. 105 LEA COUNTY, NEW MEXICO 660' PNL; 810' PEL SECTION 29, T-19-5, R-35-E

Spudded: 11/2/58

Completes: 1/29/59





HOLE SIZE - 7/8

WEST PEARL QUEEN UNIT NO. 136 LEA COUNTY, NEW MEXICO 660 PNL = 710 FWL SECTION 32, T-19-5, R-35-E

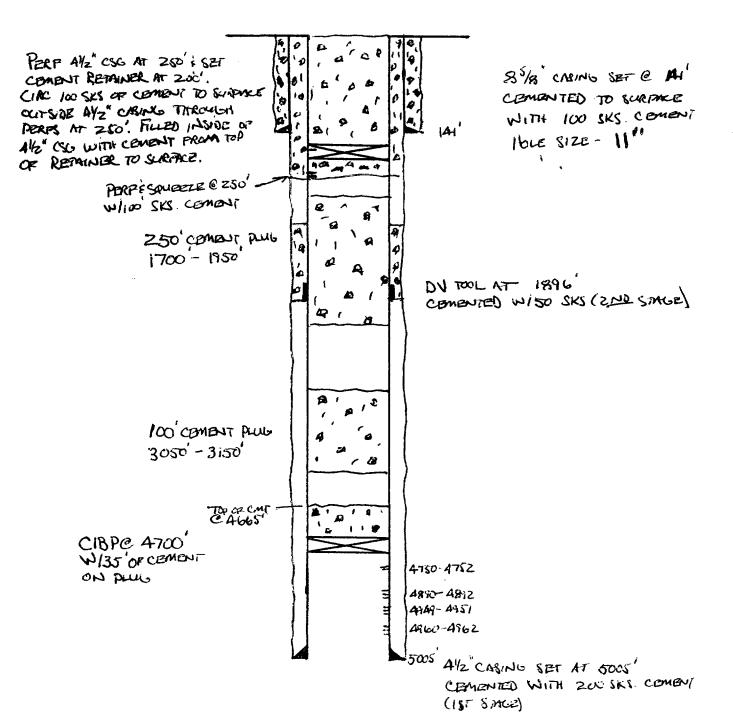
Spudded: 8/24/59

COMPLETED: 9/9/59

Puble: 2/15/77

G.L. 3710 25 SK CMT. PLUL 261 TO SURPAUE 55 SK CMT PLUG 85/8 CASING SET @ 101 CMT. CIRC. TO SURPARE WILLOW SKS. 623 - 761 HOLE SIZE - 11 " 25 SK. CMT. PHUG 930-623 CSG. PARTED 40 SK. CMT. PLUG) AT 909' 1130'- 930' DY TOOL AT 1935 CMT ZED STAGE 114 2.33 TJ TBL WISD SKS. INCOR CMT. 476 bEL TOP AT 2036 14 2.33 IJ. TAG TOC 3600 (CALCULATED) TOP AT 3477 区 GUISBRION ROK PRE 4785-4787 AT 4751 (TUIBERSON TYAC A 4929-4931 DRILLABLE PKR AT 4816' 41/2" CSG SBT AT 4948 CMT. IST STAGE W/200 SKS INCOK CMT. ATO GEL HOLE SIZE - 63/4" T.D. OPENHULE - SOZ 7 OPENHOUR SIZE. 3%"

WEST PEARL QUEEN UNIT No. 144 LEA COUNTY, NEW MEXICO 1980' FNL & 660 FEL SECTION 33; T-195, R-35E Spudded - 5/8/60 PLUGGED - 10/10/78

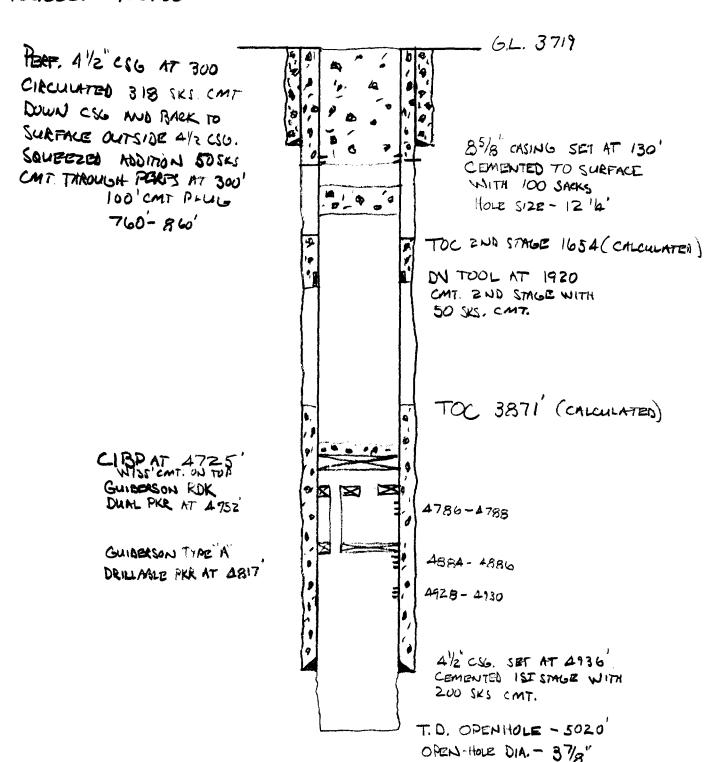


WEST PEARL QUEEN UNIT No. 150 LEA COUNTY, NEW MEXICO 1980 FNL & 1980 FWL SERTION 32, T-19-5, R-35-E

SPUDDED: 10/15/59

COMPLETED: 11 3/59

Pubbes: 7/6/86

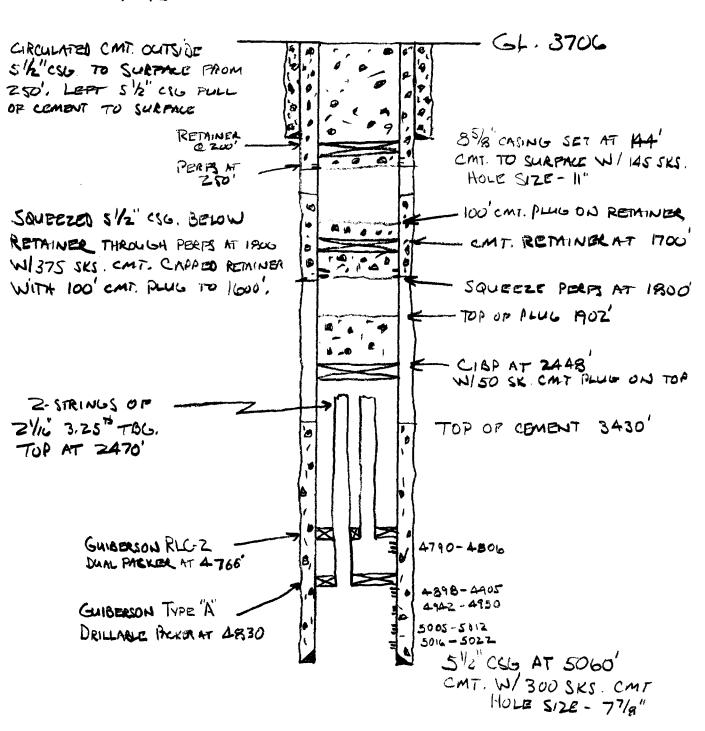


WEST PEARL QUEEN UNIT No. 160 LEA COUNTY, NEW MEXICO 1980 FSL & 1980 FEL SECTION 32, T-A-S, R-35-E

SANDOED: 6/10/60

COMPLETED: 6/28/60

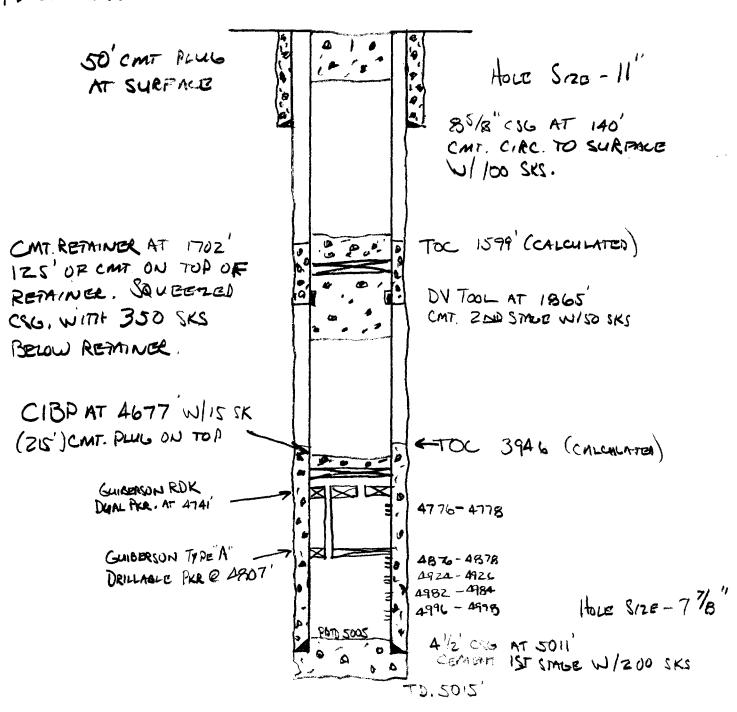
PLUGGED: 3/16/18



WEST PEARL QUEEN UNIT NO. 161 LEA COUNTY, NEW MEXICO 1980 PSL & ARD FEL SECTION 33, T-19-S, R-35-E

Spudded: 7/13/60 Complete: 7/26/60

PLUGGED: 3/3/78



West Pearl Queen Unit #166

Lea County, NM 105' FSL & 1325' FEL

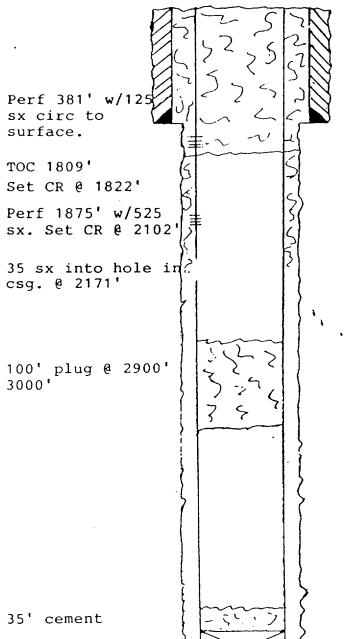
Sec. 28, T-19S, R-35E

Casing: 8-5/8" to 378' w/250 sx. $5\frac{1}{2}$ " to 5019' w/400 sx.

TOC 2940'

Tubing: 2-7/8" to 4971

Spud: 10/10/69 Plugged: 2/23/81



CIBP @ 4615'

PBTD: 4987' TD: 5020'

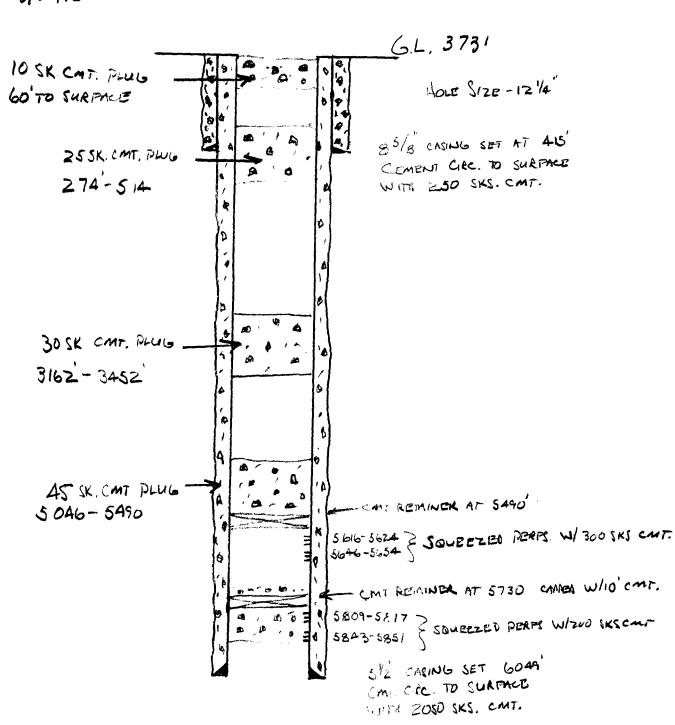
LEA "AQ" STATE No. 2 LEA COUNTY, NEW MEXICO 880 PNL; 330 FWL SECTION 33 TABLE DESCRIPTION

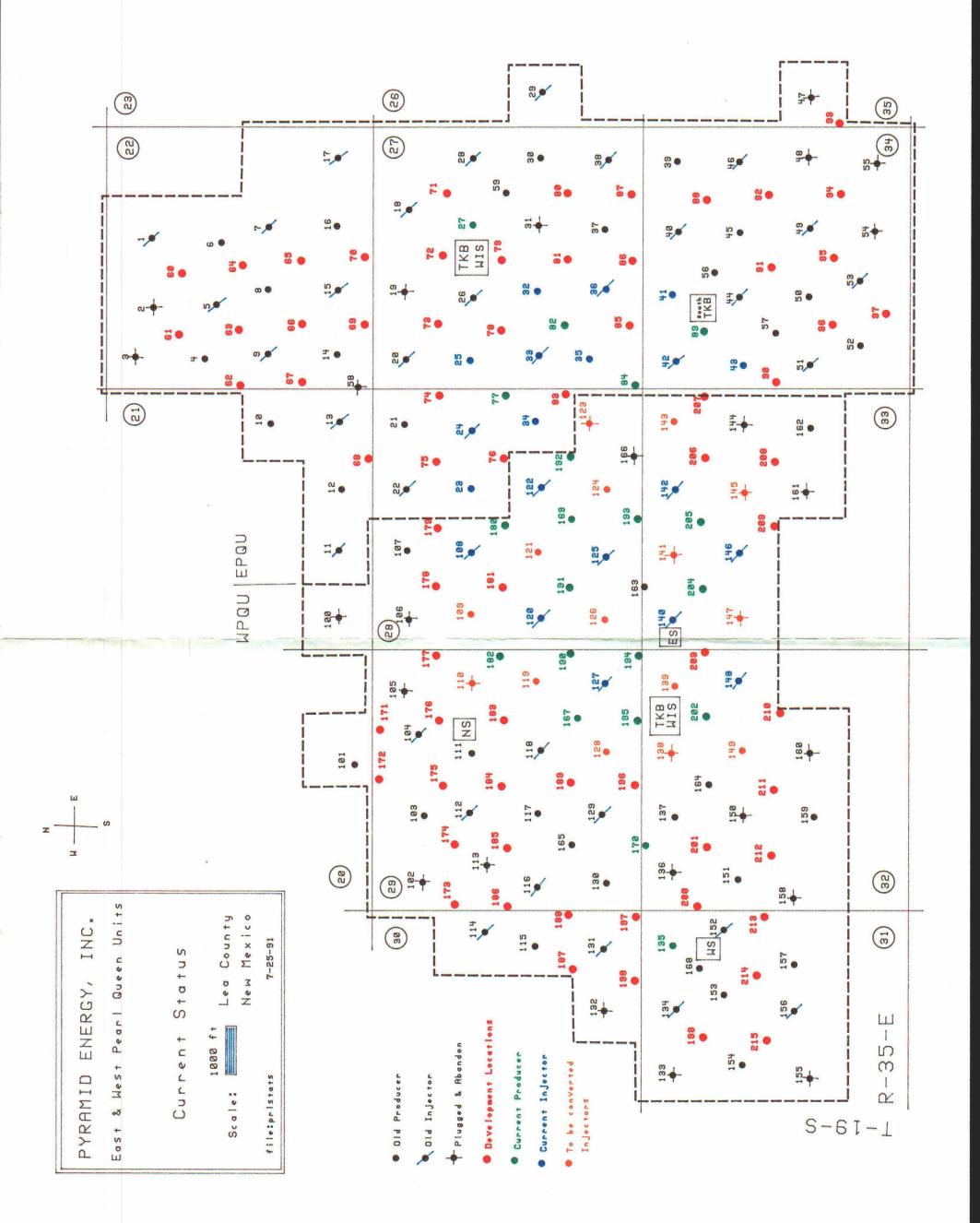
SECTION 33, T-M-S, R-35-E

Spubber: 9/14/83

COMPLETED: 10/16/83

Pulse 20: 8/30/90





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