STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION HOBBS DISTRICT OFFICE

GARREY CARRUTHERS GOVERNOR

4-7-89

POSTOFRICT BOX 1990 HOBBS, NEW MEXICO, 89241, 2080. (505) 393-6161

WFX-580

OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE, NEW MEXICO 87501

RE: Proposed:

| MC | | | |
|------|---|-------------------|---|
| DHC | | | _ |
| NSL | | | |
| NSP | | | _ |
| SWD | | | |
| WFX_ | X | | |
| PMX | | • • • • • • • | - |

Gentlemen:

I have examined the application for the:

Operator Energy Carp. West Pearl Queen 2. # 169-N 28-19-35 Operator S-T-R

and my recommendations are as follows:

Yours/very truly, (Jerry Sexton

Supervisor, District 1

/ed

NEW MEXICO RECORD RESEARCH

(505) 392-3319 P.O. BOX 1437 HOBBS, N.M. 88241-1437

April 2, 1989

State of New Mexico Energy and Minerals Department Oil Conservation Division P.O. Box 2088 State Land Office Building Santa Fe, New Mexico 87501

Oil Conservation Division District 1 P.O. Box 1980 Hobbs, New Mexico 88240

Gentlemen:

Attached is Form C-108 "Application for Authorization to Inject" with all required attachments. Armstrong Energy Corporation is requesting permission to convert West Pearl Queen Unit #169 to an injection well.

If you have any questions, or need additional information, please call me at (505) 392-3319.

Sincerely, eanelle leuthans

Jeanelle Williams

PRODUCTION STUDIES

OCD HOBES OFFI**CE**

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APR 6 1989

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

| APPL | ICATION | FOR | AUTHORIZATION TO INJECT |
|------|---------|-----|-------------------------|
| | | | |

| APPLIC | ATION FOR AUTHORIZATION TO INJECT |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ι. | Purpose: X Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? X yes no |
| п. | Operator: Armstrong Energy Corporation |
| | Address: P.O. Box 1973, Roswell, NM 88201 |
| | Contact party: <u>Jeanelle Williams</u> Phone: (505) 392-3319 |
| | 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? X yes \Box no If yes, give the Division order number authorizing the project <u>R-2729</u> . |
| ۷. | 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: |
| | 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 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: Jeanelle Williams Title Agent |
| | Signature: <u>permette Withawa</u> Date: <u>3/28/89</u> |
| SUDMI | ne information required under Sections VI, VIII, X, and XI above has been previously tted, it need not be duplicated and resubmitted. Please show the date and circumstance ne earlier submittal. |

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

111. 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:
 - 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

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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.

RECEIVED

6 1989 APR

OCD HOBBS OFFICE

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| STATE OF NEW MEXICO | IENT | | | Form C-104 |
|---------------------------------------------------------------|-------------------------------|--------------------------|--------------------------|--------------------------|
| **. ** 1***** ******* | | | | Revised 10-01-78 |
| | OU CONSERN | ATION DIVISIO | NN . | Format 06-01-83 |
| SANTA PE | | | | Page 1 |
| FILE | | BOX 2088 . | | |
| U.S.G.S. | SANTA FE. NI | EW MEXICO 87501 | | |
| LAND OFFICE | | | | |
| TRANSPORTER OIL OAL | REQUEST F | OR ALLOWABLE | | · * |
| OPENATON | | AND | • | |
| PROBATION OFFICE | AUTHORIZATION TO TRAN | SPORT OIL AND NATU | RAL GAS | |
| - Operator | <u></u> | · | | |
| Armstrong Energy | Corporation | | | |
| Address | | | | |
| P.O. Box 1973 | Roswell, NM 88201 | | | |
| Reason(s) for filing (Check proper b | | Other (Please | explain) | |
| | Change in Transporter of: | | | |
| New Well | | Name Ch | ange effective | 5/1/87 |
| Recompletion | | Dry Gas | Ū | • |
| X Change in Ownership | Cazinghead Gas | Condensate | | |
| Change of ownership give name nd address of previous owner | chevron 0.3.A. me., | P.O. Box 670, Ho | bbs, NM 88240 | |
| Legae Name | Well No. Pool Name, Including | Formation | Kind of Lease | Lease No. |
| West Pearl Queen Unit | Pearl (Queen |) | State, Federal or Fee | State E-8183 E-8184 |
| | | | | |
| | 305 Feel From The South 1 | | Feet From The | est |
| Line of Section 28 1 | Township 195 Range | 35Е , мири | , Lea | County |
| IL DESIGNATION OF TRAN | ISPORTER OF OIL AND NATUR | AL GAS | | |
| Name of Authorized Transporter of C | OII XI or Condensate | Address (Give address) | o which approved copy of | this form is to be sent) |
| Shell Pipeline C | | P.O. Box 19 | 10, Midland, | Texas 79702 |
| Name of Authorized Transporter of C | Casinghead Gas or Dry Gas | Address (Give address) | o which approved copy of | this form is to be sent) |
| | Unit Sec. Twp. Rge. | Is gas actually connects | d? When | |
| if well produces oil or liquids, give location of tanks. | B 32 19 35 | | | |

this production is commingled with that from any other lease or pool, give commingling order number:

10TE: Complete Parts IV and V on reverse side if necessary.

1. CERTIFICATE OF COMPLIANCE

hereby certify that the rules and regulations of the Oil Conservation Division have een complied with and that the information given is true and complete to the best of y knowledge and belief.

| Cohet SA To |
|-------------|
| (Signatury) |
| President 🗸 |
| (Tille) |
| May 1, 1987 |
| (Dair) |
| |

| , OIL | CONSERVATION DIVISION |
|-------|---------------------------------|
| | MAY 1 1 1987 |
| BY | ORIGINAL EIGHER BY JERRY SENTON |
| | DISTRICT I SUPERVISOR |

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

| MEXICO | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| JLS DEPARTMENT - | |
| OIL CONSERVATION DIVISION | |
| P. O. BOX 2088 | 5 . 6 . 34. |
| | Form C-103 Revised 10-1-79 |
| SANTA FE, NEW MEXICO 87501 | |
| U.1.0.1. | Sa. Indicate Type of Louse |
| LAND OFFICE | State X Foo |
| OPERATOR | 5. State OI: 6 Gas Lease No. |
| | E-8183 & E-8184 |
| SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO MALL ON TO DEFEND OF DUG ANCH TO A DEFENDENT RESERVOIR. USE "APPLICATION FOR PERMIT _" FORM C-101) FOR SUCH PROPOSALS.) | |
| | 7. Unit Agreement Hame |
| 2. Name of Operator | West Pearl Queen Unit |
| | 8. Farm or Lease liame |
| Gulf Oil Corporation | |
| 13. Address of Operator | 9. Well No. |
| P. O. Box 670, Hobbs, NM 88240 | 169 |
| 4. Location of Well | |
| UNIT LETTER N. 1305 FEET FROM THE South LINE AND 2565 FEET FROM | 10. Field and Pool, or Wildcat |
| CALL CETCH ASOS FEET FROM THE SOULIL LINE AND 2005 FEET FROM | Pearl Queen |
| THE West LINE, SECTION 28 TOWNSHIP 195 RANGE 35E HAPPA. | |
| | |
| 15. Elevation (Show whether DF, RT, GR, etc.) | 12. County |
| 3707' GL | Lea |
| Check Appropriate Box To Indicate Nature of Notice, Report or Oth | et Data |
| NOTICE OF INTENTION TO: SUBSEQUENT | REPORT OF: |
| PERFORM REMEDIAL WORK | |
| TEMPORARILY ABANDON | ALTERING CASING |
| PULL OR ALTER CABING | PLUG AND ABANDONMENT |
| othenAdd_Perfs_In_Qu | |
| OTHER | een[X] |
| 17. Describe Proposed or Completed Operations (Clearly state all periods done in the | |

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

POH with production equipment. Perf 4846-50' with (2) $\frac{1}{2}$ " JHPF. Break down perfs with 8.6# GKF at 400# at 1.5 BPM. Spot 1000 gals 15% NE double inhibited acid. ISIP 1900#, AIR 3 BPM. Swab and test. GIH with tubing, MA, perf nipple, SN; tubing at 4958'. Ran pump and rods, hung on. Complete after adding 1 zone of perforation 9-16-82.

| 18. I hereby certify that the information above is true and complet | te to the best of my knowledge and belief. | | | |
|---------------------------------------------------------------------|--------------------------------------------|--------|---------|------|
| sienco tamal A. huwarf | Area Engineer | DATE _ | 9=30=82 | |
| CONDITIONS OF APPROVAL, IF ANYI | UL & GAS INSPECTOR | DATE _ | OCT 5 | 1982 |

| , v EC | | | | | | | | | Form C Revise | -105 |
|---------------------------|--------------------|-------------------|-------------|--------------|-----------------------------------------------|------------------|---------------------------------------|-----------|------------------|----------------------------|
| | | NEW M | EXICO O | IL CON | SERVATION | | MMISSIO | | | Type of Lease I |
| | W | ELL COMPLE | TION OF | K KECC | DMPLETIO | NR | EPURI | | 5. Strite O |) & Gus Lease No. |
| AND OFFICE | | | | | | | | | E-8183 | 3 & 8184 |
| OPERATOR | | | | | | | | | | <u>IIIIIIIIIIII</u> |
| 4. TYPE OF WELL | | | | | | | | | | reement Name |
| b. TYPE OF COMPLET | OIL WELL | CAS WELL | | DRY | OTHER_ | | • | | | earl Queen Unit |
| NEW WOR | < <u> </u> | PLUG BACK | DIF RES | SVA. | OTHER | | | | 9, Well No | [· |
| | orporation | | | | | | | | IC, Field | 169 |
| | 17-11- 11-M | 000/0 | · | | | | | | | 1 Queen |
| BOX 670, | Hobbs, N.M. | 00240 | | | | | | | | |
| NIT LETTER N | 13(|)5 | - | South | | 2" | 565 | . FEET FA | | |
| | | | | | | $\overline{\Pi}$ | <u>IIII</u> | | 12. County | |
| HE West LINE OF S | ες. 20 τw | ached 17. Date | Compl. (R) | adv to P | <u>N/////</u> | Lleva | 1 1 1 1 1 1 1 1 1 1 | RKB. R | T, GR, etc.) 19 | Elev. Cashinghead |
| 2-15-77 | 3-2-77 | | 3-27-7 | | | | | 7' G I | | |
| 2-1.5-77 | | Buck T.D. | 22. 1 | f Multipl | e Compl., Ho | ~ | 23. Interv | als "F | totury Tools | Cable Tools |
| 5000' | 500 | | | duny (| Single | | Drille | ed By i |) to 5000 | |
| 4. Producing Interval(s) | | | , Name | ··· -··· | <u>, , , , , , , , , , , , , , , , , , , </u> | I | | | | 25. Was Directional Survey |
| | | | | | | | | | | No |
| 16. Type Electric and Ot | ther Logs Run | | | | | | | | 27. | Was Well Cored |
| Gamma Ray-Comp | | Comp. Densi | tv-Dual | l Late | erolor-Se | onid | 2 | | | No |
| | | | | | ort all string: | | | | | |
| CASING SIZE | WEIGHT LB. | FT. DEPTH | SET | ног | ESIZE | | CEME | NTING | RECORD | AMOUNT PULLED |
| 8 5/8" | 24# | 1800 | 1 | 12 | 2 1/4" | 6(| 00 sacl | cs-cir | culated | |
| 5 1/2" | 15.50# | 5000 | | | 7 7/8" | | | | culated | |
| | | | | | | | | | | |
| | | * DV to | ol at | <u>3192'</u> | | | | | | |
| 29. | Li | NER RECORD | r | r | | | 30. | | TUBING RE | |
| SIZE | тор | BOTTOM | SACKS C | EMENT | SCREEN | | SIZE | | DEPTH SET | PACKER SET |
| | | | | | | | 2 7/8 | <u>,</u> | 4959' | |
| | <u> </u> | | l | 1 | | 4.01 | | | IRE, CEMENT S | |
| 11. Perforation Record (| | | -11 | - | 32. | | | | | IND MATERIAL USED |
| Perforated 5 1 | | | 5° JHP | F | 4721-2 | | ERVAL | | | 15% NEA acid and |
| at 4721-27, 49 | 10-13 and 4 | 4922-20. | | | | | | | | 000 gallons gel |
| | | | | | | | | | | ing 1/2 to 2" SPG. |
| | | | | | 4910-1 | 3.4 | 922-26 | | | 15% NEA acid and* |
| 33. | * f: | rac with 18 | .000 | PROD | | | | | | ng 1/2 to 2# SPG |
| Date First Production | | tion Method (Flor | | | | | | | | tus (Prod. or Shut-in) |
| 3=27=77 | | Р | ump | | | | | | Prod | lucing |
| Date of Test | Hours Tested | Choke Size | Frod'n. | | Oil - 1311. | | Gas - M | 75 | Water - Bill. | Cos - Oil Fiatio |
| 4-24-77 | 24 | 2" | Test Pr | > | 99 | | | | 130 | |
| Flow Tubing Press. | Cauling Pressure | | - Oil - 13 | ы. | G-15 - | MCF | | Water — 1 | эы. О | Il Grevity - API (Corr.) |
| | | Hour Rute | . 9 | 9 | | | |] | 30 | 35.1 |
| 34. Disposition of Gas (| Sold, used for fue | l, vented, etc.) | | | | | | | Test Witnessed | |
| VentedWait | ing on flow | v line conn | ection | | | | | | <u> </u> | lagee |
| 35. List of Attuchments | | | | | | | | | | |
| 36. I hereby certify that | the information si | hown on both side | s of this j | orm is tri | ie and comple | ete to | the best | of my kni | neledge and beli | ef. |
| SIGNED | 0 | M | | | Area En | | | | | 4-25-77 |
| SIGNED | p | <u></u> | | L 2 | | ž | | | | |

INSTRUCTIONS

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| to be filed with the op- | sude District Office | of the Commission not lat- | an 20 days after the completion of any newly-drilled o |
|-------------------------------------|-------------------------|--------------------------------|---------------------------------------------------------------|
| zell. It shall be accompan- | | lectrical and rudio-activity | |
| | | | se of directionally drilled wells, this vertical depths shall |
| e reported. For multiple comple- | ettons, Items 30 throug | h 34 shall be reported for eac | ch zone. The form is to be filed in quintuplicate except on |
| p land, where six copies are requir | ed. See Bule 1105. | | |

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

| | | Sout | heastern | New Mexico | | | | | ew Mexico | |
|---------------------------------------------------------------------------|----------------------------|-----------|---------------------------------|-----------------------------------|------------------|------------|---------------------------------------------------|--------------|-----------|-----------------------------------------|
| T. Anhy | / | 1740 | T. | Canyon | TOie | Atamo _ | | T . | Penn, "B" | |
| r. Salt | | 1866 | | Strawn | | | | | | |
| 3. Salt | | 2000 | | Atoka | | | | | | |
| . Yate | s | 2101 | | Miss | | | | | | |
| r. 7 Ri | vers | 4010 | T. | Devonian | T. Mei | 10fee | | Т. | Madison | |
| r. Quee | •n n | 4719 | T. | Silurian | T. Poi | nt Lookou | t | T. | Elbert | |
| r. Gray | burg | | T. | Montoya | T. Ma | | | Т. | McCracken | |
| | | | | Simpson | | | | | | |
| T. Glori | ieta | | T. | McKee | Base G | reenhorn _ | | т. | Granite | |
| T. Padd | lock | | Т. | Ellenburger | T. Dal | ota | | Т. | | |
| | | | | Gr. Wash | | | | | | |
| T. Tubb |) | | T. | Granite | T. To | lilto | | т. | | |
| T. Drink | kard | <u> </u> | T. | Delaware Sand | T. Ent | rada | ····· | T. | | · · · · · · · · · · · · · · · · · · · |
| Т. Аво. | | | T. | Bone Springs | T. Win | gate | | Т. | | |
| T. Wolfe | camp | | T. | ···· | | nle | | <u> </u> | • | |
| T. Penn | | | | ·-···· | | | | | | |
| T Cisco | (Bough | C) | <u> </u> | | T. Per | nn. "Λ" | | T. | | |
| | | | | | GAS SAND | | | | | |
| lo. 1, from | m | 4910 | | to4926 | No. 4, | from | | | | ***** |
| | | | | | | | | | | |
| 0. 2, iroi | m | | | tc | No. 3, 1 | rom | ••••••• | •••••••••••• | | ••••••••••••••••• |
| o. 3. from | m | | | lo | | rom | • | | | |
| lo. 1, from | m | | | d elevation to which wate | | | fcct, | | | |
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| io. 1, fron io. 2, fron io. 3, fron | n | | | d clevation to which wate to | er rose in hole, | | feet, feet, feet, feet, | ····· | | |
| io. 1, fron io. 2, fron io. 3, fron | n | | | to | er rose in hole, | | feet, feet, feet, feet, | ······ | | |
| 6. 1, fror 6. 2, fror 6. 3, fror 6. 4, fror From | nn | Thickness | F | d elevation to which wate to | er rose in hole, | al sheets | | ······ | | |
| 6. 1, from 6. 2, from 6. 3, from 6. 4, from From 0 | тт. пт. т 1740 | Thickness | F Red Ba | d clevation to which wate to | er rose in hole, | al sheets | | ······ | | |
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| WELL NU. | 1305' FSL & 2565' F FOUTAGE LUCATION | WL 28 SUCTION | 19-S TOWNSHIP | 35-E RANGE |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| | v, New Mexico | | | |
| Sche | matic | т | abular Data | |
| | ~ | Surface Casing | <u></u> | |
| | Š. | Size <u>8-5/8"</u> | " Cemented wi | th <u>600</u> |
| | | 10C surface | | y <u>circulat</u> |
| | 2 | Hole size $12\frac{1}{4}$ " | | |
| | | Intermediate Casing | · | |
| | | Size | " Cemented wi | .th |
| 5 | | TOC | fect determined t | у |
| 12 | 8-5/8" @ 1800' | Hole size | | |
| }- |) cement circulated 600 sx | Long string | | |
| | | Size <u>51</u> " | " Cemented wi | th <u>1800</u> |
| / | | TOC | feet determined b | y |
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APR 6 1989

OCD HOBBS OFFICE

DATA ON THE PROPOSED OPERATION

Proposed Injection Volume: Average - 400 Bbl/Day Maximum - 500 Bbl/Day Proposed Injection Pressure: Average 1700# surface pressure. Maximum 2150# surface pressure. Injection system is closed. Sources of injection fluid are produced saltwater and freshwater. The appropriate chemical analysis is included. Injection is into a zone productive of oil and/or gas.

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

GEOLOGICAL DATA ON THE INJECTION ZONE

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Lithologic Detail: Dolomite, sandstone and shale. Geological Name: Queen Thickness: 3484' to 5000'. Average Depth:

Underground source of drinking water overlying the injection zoned in the proposed area is the Ogallala at an average depth of 50'.

APR 6 1989 OCD HOBBS OFFICE

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1000 SUNWEST CENTRE

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P. D. Box 1973 Roswell, New Mexico 88201 505/623-8726

February 7, 1989

Ref: Application for conversion of the WPQU #169 from producing oil well to water injection well, 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 this wellbore 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.

ARMSTRONG ENERGY CORPORATION

thosk Sug

Thomas K. Scroggin Production Supervisor

STATE OF NEW MEXICO)) ss. COUNTY OF EDDY)

The foregoing instrument was acknowledged before me this <u>746</u> day of <u>tebruary</u>, 1989, by Thomas K. Scroggin.

Sabra R. Eletcher Notary Public

My Commission Expires:

Qct. 31, 1992

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TABULATION OF DATA ON WELLS WITHIN AREA OF REVIEW

Armstrong Energy Corporation

West Pearl Queen Unit-Injection well #108

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 326' w/300sx. 4½" to 4961' w/350 sx. cement Perforations: 4884-4895', 4815-4845', 4700-4710' (Pearl Queen) TD: 4975'

West Pearl Queen Unit-Well #121

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 306' w/300sx. cement 5½" to 4908' w/200 sx. cement Perforation: 4718-4726, Open hole 4908-4924 TD: 4921'

West Pearl Queen Unit-Injection well #122

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 314' w/300 sx. cement 5½" to 4931' w/200 sx. cement Perforations: 4826-4836', 4886-4888', 4897-4899', 4906-4908' (Pearl Queen) TD: 4945'

West Pearl Queen Unit-Injection well #120

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 316' w/300 sx. cement $5\frac{1}{2}$ " to4904' w/350 sx. cement Perforations: Open hole 4915-4946' (Pearl Queen) TD: 4946'

West Pearl Queen Unit-Well #109

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 326' w/300 sx. cement $4\frac{1}{2}$ " to 5002' w/350 sx. cement Perforations: 4734-4754' (Pearl Queen) TD: 5020'

West Pearl Queen Unit-Well #124 Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 301' w/300 sx. cement 5½" to 4911' w/200 sx. cement Perforations: 4911-4939', 4853-4863', 4854-4864', 4730-4736' Open hole 4911-4939' (Pearl Queen) TD: 4939' West Pearl Queen Unit-Injection well #125

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 302' w/300 sx. cement 5½" to 4919' w/200 sx. cement Perferations: Open hole 4919-4949' TD: 4949' Well is TA'd.

West Pearl Queen Unit-Well #126

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 326' w/300 sx. cement 5½" to 4930' w/300 sx. cement Perforations: 4728-4738', 4865-4876', 4864-4875' Open hole 4930-4957 (Pearl Queen) TD: 4957'

West Pearl Queen Unit-Injection well #140

Location: Sec. 33, T-19S, R-35E Casing: 8-5/8" to 333' w/300 sx. cement $4\frac{1}{2}$ " to 4956' w/1800 sx. cement Perforations: 4773-4785', 4920-4926' (Pearl Queen) TD: 5010' PBTD: 4954'

West Pearl Queen Unit-Injection well #142

Location: Sec.33, T-19S, R-35E Casing: 8-5/8" to 314' w/300 sx. cement $4\frac{1}{2}$ " to 4921' w/1850 sx. cement Perforations: 4737-4741', 4881-4885' Open hole 4933-4981' (Pearl Queen) TD: 4981' PBTD: 4900'

West Pearl Queen Unit-Well #143

Location: Sec. 33, T-19S, R-35E Casing: 8-5/8" to 291' w/300 sx. cement 4½" to 4894' w/2800 sx. cement Perforations: 4735-4870' Open hole 4905-4960' TD: 4960'

Petrus Oil Company, L.P.

East Pearl Queen Unit-Well #34

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 100' w/100 sx. cement 5½" to 5057' w/200 sx. cement Perforations: 4711-4716', 4830-4833', 4884-4888', 4896-4899', 4917-4919' TD: 5075' PBTD: 5033'

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East Pearl Queen Unit-Injection well #24

Location: Sec. 28, T-19S, R-35E Casing: 8-5/8" to 159' w/150 sx. cement 5½" to 4947' w/200 sx. cement Perforations: 4691-4703', 4804-4806', 4808-4810' 4856-4859', 4868-4870', 4887-4889' (Pearl Queen) TD: 4960' Well is TA'd.

East Pearl Queen Unit-Well #23

. . .

Location: Sec. 28, T-19S, R-35E Casing: 9-5/7 to 132' w/150 sx. cement 7-7/8", 7-5/8" & 5½" to 4955' w/200 sx. cement Perforations: 4698-4704', 4810-4816', 4878-4881', 4887-4889', 4896-4899' (Pearl Queen) TD: 4955' PBTD: 4929'



Casing: 8-5/8" to 378' w/250 sx. Gulf Oil Corporation West Pearl Queen Unit #166 $5\frac{1}{2}$ " to 5019' w/400 sx. Lea County, NM 105' FSL & 1325' FEL Sec. 28, T-19S, R-35E TOC 2940' Tubing: 2-7/8" to 4971 Spud: 10/10/69 Plugged: 2/23/81 Perf 381' w/125 sx circ to surface. TOC 1809' Set CR @ 1822' Perf 1875' w/525 sx. Set CR @ 2102' 35 sx into hole in csg. @ 2171' 100' plug @ 2900' 3000' 35' cement CIBP @ 4615' PBTD: 4987' TD: 5020'





| DISTRIBUTION | L CONSERVATION DIVIS V P. O. BOX 2068 SANTA FE, NEW MEXICO 87501 | Farri C-103 Revised 10-1-; |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| U.S.O.S. LAND OFFICE OPERATOR | PYA | Sa. Indicute Type of Leise State 2 For S. State Oil & Gas Lease No. 2 5 64/1 |
| SUNDRY NOTICES | AND REPORTS ON WELLS | |
| OIL GAB OTHER- | | 7. Unit greenent : une W: Earl, Ougan Thit |
| 3. Addigers of generation | Chrufon USA | 9. Veil tio. |
| 4. Location of Well | n 88240 | 10. Fleig and Pool, or Wildcat |
| UNIT LETTER 660_FEET | FROM THE TLOET LINE AND 1980 FEET P | nom fearl fully |
| THE LINE, SECTION 33 | TOWNSHIP 195 RANGE 35E IN | .e |
| | Bovation (Show whether DF, RT, GR, etc.) 3714 GL | 12. County |
| Check Appropriate E NOTICE OF INTENTION TO | Box To Indicate Nature of Notice, Report or D: SUBSEQUE | Other Data |
| TEMPORARILY ABANDON | PLUG AND ABANDON REMEDIAL WORK | ALTERING CASING |
| TEMPORARILY ABANDON PULL OR ALTER CABING OTHER 17. Describe Proponed or Completed Operations (Clearly work) SEE RULE 1103. | COMMENCE DRILLING OPHS. | Ing estimated date of starting any proposed hole up algandonman |
| TEMPORARILY ABANDON PULL OR ALTER CABING OTHER 17. Describe Proposed or Completed Operations (Clearly work) SEE RULE 1103. | CHANCE PLANS COMMENCE DRILLING OPHS. CHANCE PLANS CASING TEST AND CEMENT JOB OTHER State all pertiment details, and give pertiment dates, includ | Ing estimated date of starting any proposed hole up algandonman |
| TELEPORARILY ABANDON PULL OR ALTER CABING OTHER 17. Describe Proposed of Completed Operations (Clearly work) SEE RULE 1103. POH uf the Attempts to ent mile Abot. Cmt. plug 796 uitmessed by OCD Newpon Glean location. Well Pro- Clean location. | CHANCE PLANS COMMENCE DAILLING OPHS. CHANCE PLANS CASING TEST AND CEMENT JOB OTHER other state all pertiment details, and give pertiment dates, includ by Csp unwcclosoful. Circ 2-4706 Spot surf plug @ 100 Dentatine. Install, dry hol A 7-26-83. | Ing estimated date of starting any proposed hole up algandonman |
| TEMPORARILY ABANDON PULL OR ALTER CABING OTHER 17. Describe Proponed or Completend Operations (Clearly work) SEE RULE 1103. POH uttleg. Atternates to Ent mile . Abot. Cent plug 796 | CHANCE PLANS COMMENCE DAILLING OPHS. CHANCE PLANS CASING TEST AND CEMENT JOB OTHER other state all pertiment details, and give pertiment dates, includ by Csp unwcclosoful. Circ 2-4706 Spot surf plug @ 100 Dentatine. Install, dry hol A 7-26-83. | Ing estimated date of starting any proposed hole up algandonman |

| CONSERVATION DIVISION P. O. BOX 2088 CANTA FE SANTA FE, NEW MEXICO 87501 | Farm C-103 Revised 10-1-78 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| FILE U.S.G.S. LAND OFFICE OFERATOR | Sa. Indicute Type of Lette State (y) For S. State Oti & Gas Lease No. |
| SUNDRY NOTICES AND REPORTS ON WELLS | E-5841 |
| | West Pearl Queen Unit |
| Name of Operator | 8. Farm or Lease Lume |
| Gulf Oil Corporation | 9. Well No. |
| P. O. Box 670, Hobbs, NM 88240 | 141 |
| Location of Well | 10. Field and Pool, or Wildcat |
| UNIT LETTER <u>C</u> . 660 PEET PROM THE <u>North</u> Line and <u>1980</u> PEET PROM THE <u>West</u> Line, section <u>33</u> Township <u>198</u> Range <u>35E</u> Huph | |
| 15. Elevation (Show whether DF, RT, GR, etc.) 3714' GL | 12. County Lea |
| 6. Check Appropriate Box To Indicate Nature of Notice, Report or O NOTICE OF INTENTION TO: SUBSEQUEN | ther Data T REPORT OF: |
| PERFORM REMEDIAL WORK PLUG AND ABANDON REMEDIAL WORK TEMPORARILY ABANDON PULL OR ALTER CABING CHANGE PLANS OTHER | ALTERING CASING |

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

POH with production equipment. Set RBP at 4700'. Attempt to load hole, would not load. Set RTTS at 4649', test RBP 500#, ok. Set RTTS at 4030', 3410', 2790', 2170', 1550', 1488', 930', 870', 806', 837', 775', 744', 713', 689', 704'. Found holes 689'-837'. Spot 2 sacks sand on RBP. Set cement retainer at 652', pressure casing 400#. Establish injection rate through leak. Squeeze with 225 sacks Class "C" with CaCl₂. Reverse cement. WOC 21¹₂ hours. Drill cement retainer and cement. Casing parted. LD rods and tubing. Casing repair unsuccessful. Well will be P&A.

.

| 18. I hereby certify that the information above is true and comple | | I my knowledge and belief. Area Engineer * | 4-26-83 |
|--------------------------------------------------------------------|-------|-----------------------------------------------|-------------|
| ORIGINAL SIGNED BY JERRY SEXTON DISTRICT I SUPERVISOR | TITLE | | APR 28 1983 |
| ONDITIONS OF APPROVAL, IF ANY | | -33 | |

| NO. OF WHIES HECEIVED | | Form C-100 |
|-----------------------------------------|------------------------------------------------------|----------------------------------------------------------|
| DISTRIBUTION | | Supersedex Old C+102 and C-103 |
| SANTIFE | NEW MEXICO OIL CONSERVATION COMMISSION | Effective 14-65 |
| FILE | | |
| U.S. ^{15.} | | Sa, Indicate Type of Leave |
| LAPOFFICE | 1 | State 🌌 Fre |
| OFATOR | 1 | 5, State Oil & Cas Lease No. |
| 85 | | B-5841 |
| SUNDE | RY NOTICES AND REPORTS ON WELLS | |
| | TOR FOR PERMIT - PORM CITOTI FOR SUCH PROPOSICE. | 7. Unit Agreement Name |
| | 01HER- | West Pearl Qneen Unit |
| Name of Operator | | 8. Farm or Loase Nume |
| Gulf Cil Corporation | | |
| Address of Operator | | 9, Well No. |
| Box 670, Hobbs, New | l'exico | 33-3 |
| Location of Aeil | | 10. Field and Pool, or Wildcat |
| c | 660 reet mon the North Line and 1980 re | Pearl Qneen |
| UNIT LI FFFP | CON PEET PROM THE AND UNE AND DO FE | ET FROM |
| west | 10N 33 TOWNSHIP 19-S RANGE 35-E | VIIIIIIIIIIIIIIIIIIIIII |
| THE NOOV LINE, SECTI | ION TOWNSHIP RANGE | – ^{нмрм.} ()))))))))))))))))))))))))))))))))))) |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 15. Elevation (Show whether DF, RT, GR, etc.) | 12. County |
| | 3714 GL | |
| Chaol | Appropriate Box To Indicate Nature of Notice, Report | |
| | •• • | QUENT REPORT OF: |
| Notice of t | | |
| PERFORM REMEDIAL WORK | | |
| | COMMENCE DRILLING OPHS. | |
| | CHANGE PLANS CASING TEST AND CEMENT JOS | |
| AVEL OF ALTER CASING | - | |
| | DTHER | |
| | | |
| JTHCH | Drilled deerer. a | cidized & frac treated. |

4996 TD.

Drilled deeper with 3-7/8" bit to 4996'. Spotted 250 gallons of 15% NE acid on bottom. Frac treated with 5500 gallons of gelled water containing 1/2 to 1# SPO. Finshed with 20 barrels of water. Treating pressure 2300 to 2800#. ISIP 800#, after 5 min 600#. AIR 8.1 bpm. Ran tubing rods and pump and returned well to production.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief. C. D. POPLIND BY TITLE Area Production Manager April 6, 1965 SIGNED -DATE APPROVED BY ____ CONDITIONS OF APPROVAL, IF ANY:

AFFIDAVIT OF PUBLICATION

State of New Mexico, County of Lea.

I, George W. Moore

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

of_

| One | | <u> </u> | weeks. | |
|-----------|------|----------|--------|-------|
| Beginning | with | the | issue | dated |

February 6, , 19 89 and ending with the issue dated

February 6 , 19_89 nW, Publisher.

Sworn and subscribed to before

me this day of

Notary Public.

My Commission expires_____

November 14 , 19<u>92</u> (Seal)

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 February 6, 1989 NOTICE OF APPLICATION #OR FLUID INJECTION WELL PERMIT Armstrong Energy Corporation, P.O. Box 1973, Roswell New Mexico 88201 has applied to the New Mexico Oil Conservation Commission for a permit to inject fluid into a formation which is productive of oil or gas.

which is productive of oil or gas. The applicant proposes to inject fluid into the Queen Unit Well No. 169, Section 28, T-195, R-35E. This well will be an expansion of an existing waterflood and will inject a maximum of 500 barrels of water per day at an approximate injection pressure of 1700#. Interested parties must

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.

Contact party for the applicant is Jeanelle Williams, Agent, (505) 392-3319.

392-3319. Published in the Hobbs News-Sun February 6, 1989.

WEST PEARL QUEEN UNIT #169

Surface Owner

Alta Faye Klein P.O. Box 1503 Hobbs, New Mexico 88241

Offset Owner

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Petrus Oil Company, L.P. 12201 Merit Drive, Suite 900 Dallas, Texas 75251-2293