

CANADA OJITOS UNIT

III.

- A. (1) La Plata Mancos Unit #4 (N-31)
Section 31, T-32N, R-13W
San Juan County, New Mexico
756' FSL, 1208' FWL
- (2) 13 3/8" Casing / 48# weight / Depth set 176' / 17 1/4" hole / 100 sacks cement
7 5/8" casing / 26.40# / Depth set 2219' / 9 7/8" hole / 600 sacks cement
- (3) 2 3/8" Tubing / 4.7# weight / Depth set 2121.22'
- (4) Baker Model A-3 Lok-Set Retrievable Casing Packer / Depth set 2094' KB
- B. (1) The name of the injection formation is Niobrara member. The field name is La Plata Mancos Unit and the pool name is La Plata Gallup.
- (2) The injection interval is 2220' - 2304' and it is open-hole.
- (3) The original purpose of the well was for oil production.
- (4) There are no other perforated intervals.
- (5) The next higher zone is the Mesa Verde and the Dakota below.

V.

1. Map identifying all wells and leases within two miles of injection well.
With a one-half mile radius circle drawn around each proposed injection well. (Schematic on all wells within 1/2 mile.) The circle identifies the well's area of review.
(See attached)

VI.

Tabulation of data on all wells of public record within the area of review.
(See attached copies of PI Cards)

VII.

1. The proposed average and maximum daily rates are 100-200 MCF. The volume of fluids to be injected is 100-200 MCF.
2. The system will be a closed system.
3. The proposed average injection pressure will be 300 psi and the maximum injection pressure will be 400 psi.
4. Injection produced from same formation.
5. This injection is not for disposal purposes.

VIII.

Appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. (See attached)

IX.

There is no proposed stimulation program.

X.

This well was previously used for injection. Rates up to 100 MCF/D

XI.

There are no fresh water wells within one mile of injection well.

XII.

This is not an application for disposal well.

XIII.

PROOF OF NOTICE (See attached)

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL
RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
PO BOX 2088
SANTA FE, NM 87504-2088

JUN - 4 1996

APPLICATION FOR AUTHORIZATION TO INJECT

CONSERVATION DIVISION

I. PURPOSE: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? Yes No

II. OPERATOR: Benson-Montin-Greer Drilling Corp.

ADDRESS: 501 Airport Drive, Suite 221, Farmington, NM 87401

CONTACT PARTY: Albert R. Greer PHONE: 505-325-8874

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project: Yes No R-3714
If yes, give the Division order number authorizing the project _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources 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: Albert R. Greer TITLE: President

SIGNATURE: *Albert R. Greer* DATE: 5-28-96

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstance of the earlier submittal. _____

Side 2

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, PO Box 2088, Santa Fe, NM 87504-2088 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.

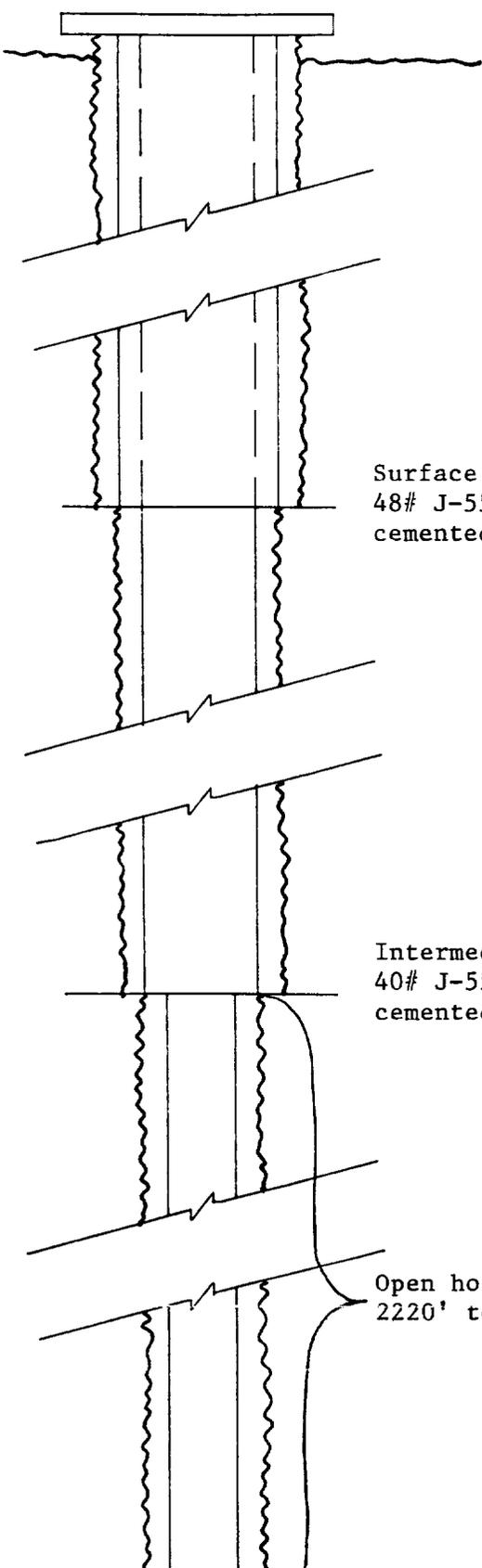
LARGE FORMAT
EXHIBIT HAS
BEEN REMOVED
AND IS LOCATED
IN THE NEXT FILE

BENSON-MONTIN-GREER DRILLING CORP.

WELL La Plata Mancos Unit N-31

TWNSHP. 32 N **RANGE** 13 W **SEC.** 31

COUNTY San Juan **STATE** New Mexico



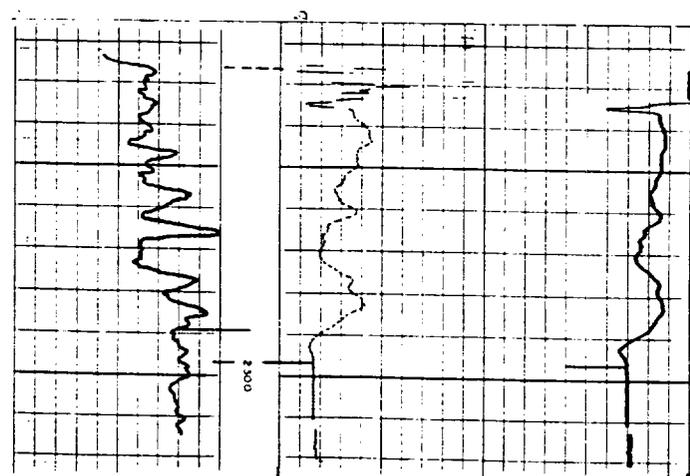
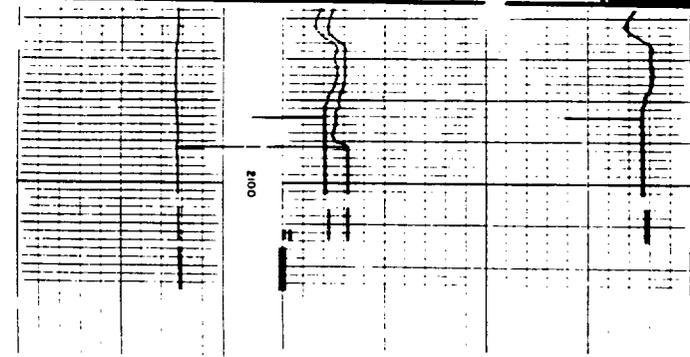
Surface casing: 13 3/8"
48# J-55 set @ 176'
cemented w/ 100 sacks

Intermediate casing: 7 5/8"
40# J-55 set @ 2220'
cemented w/ 600 sacks

Open hole completion
2220' to 2304'

T D 2304'

COUNTY <u>SAN JUAN</u> FIELD or LOCATION <u>LA PLATA GALLUP</u> WELL <u>LA PLATA MANCOS N31 #4</u>	
COMPANY <u>BNG</u> COMPANY <u>BENSON MONTIN & GREER</u> WELL <u>LA PLATA MANCOS N31 #4</u>	
COUNTY <u>SAN JUAN</u> STATE <u>NEW MEXICO</u> LOCATION <u>726' FSL & 1208' FHL</u>	SEC. <u>31</u> Twp. <u>32N</u> Rng. <u>13W</u> Other Services <u>FOC</u>
Date <u>10-18-88</u> 10-24-88 Drilled by <u>RECHER</u> Cased by <u>RECHER</u> Logged by <u>MR. STOBBS</u>	Supervisor <u>Mr. Adams</u> Recorder <u>MR. STOBBS</u>
Test No. <u>10-18-88</u> Test Date <u>10-24-88</u> Test Time <u>10:00</u> Test Type <u>Flow</u> Test Interval <u>176'</u> Test Depth <u>176'</u> Test Pressure <u>171</u> Test Temperature <u>177.8</u> Test Flow <u>6.374</u> Test GOR <u>0.0</u>	Test Interval <u>176'</u> Test Depth <u>176'</u> Test Pressure <u>171</u> Test Temperature <u>177.8</u> Test Flow <u>6.374</u> Test GOR <u>0.0</u>

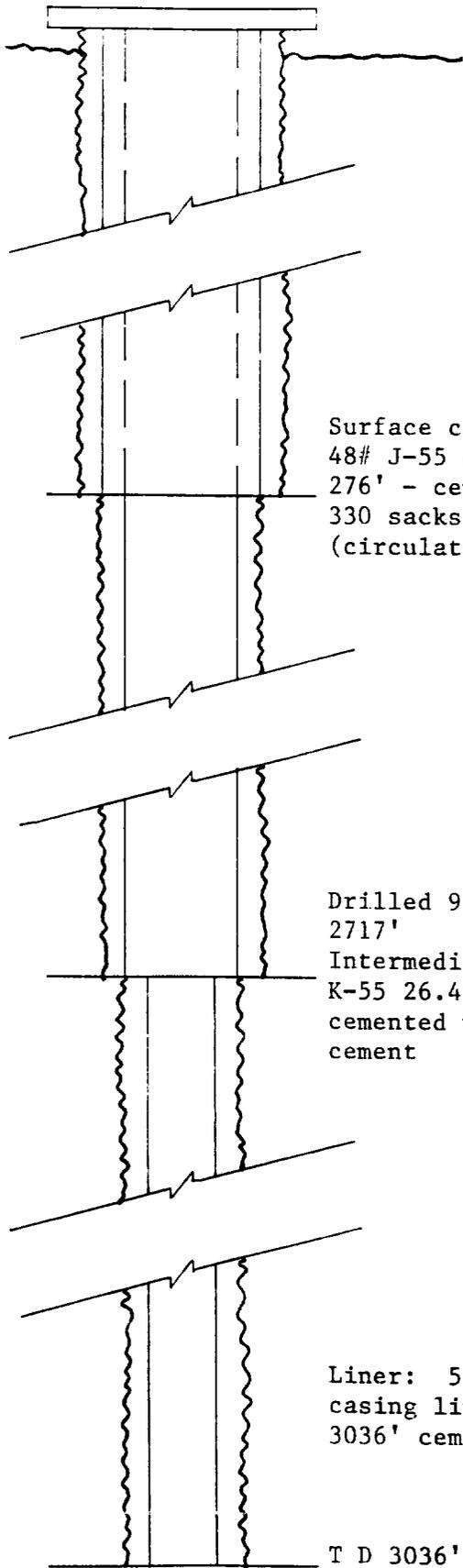


BENSON-MONTIN-GREER DRILLING CORP

WELL La Plata Mancos Unit P-31

TWNSHP. 32 N RANGE 13 W SEC. 31

COUNTY San Juan STATE New Mexico



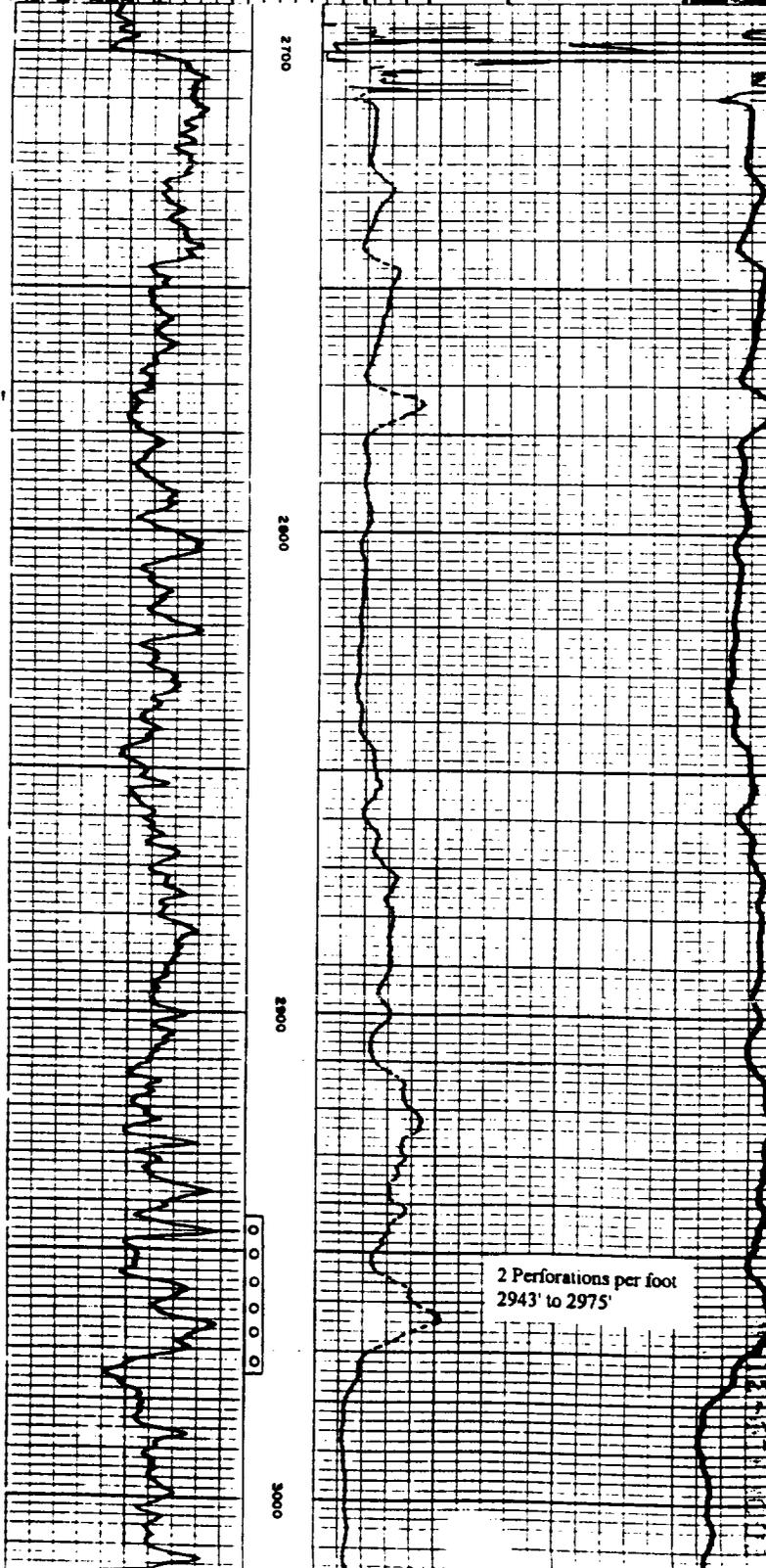
Surface casing: 13 3/4"
48# J-55 csg. set @
276' - cemented with
330 sacks cement
(circulated cement)

Drilled 9 5/8" hole to
2717'
Intermediate casing: 7 5/8"
K-55 26.4# set @ 2700'
cemented w/ 500 sacks
cement

Liner: 5 1/2" 15.5# J-55
casing liner 2389' to
3036' cemented w/ 85 sacks

T D 3036'

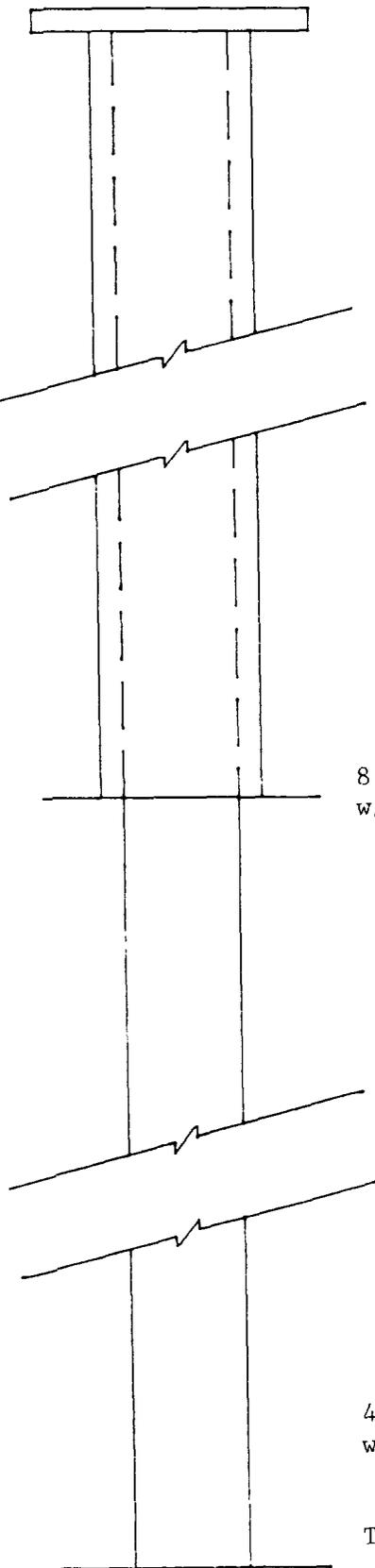
COUNTY <u>SAN JUAN</u> FIELD or LOCATION <u>LA PLATA GALLUP</u> WELL <u>LA PLATA MANCOS P-31</u>		COMPANY <u>BENSON-MONTIN-GREER</u>	
Date No. <u>7-22-68</u> Depth - Driller <u>ONE</u> Depth - Logger <u>TWO</u> Hole Log Interval <u>3035</u> Log Log Interval <u>3035</u> Core Log Interval <u>3035</u> Casing - Driller <u>13 1/8 7/8 75/8 @ 2200</u> Casing - Logger <u>9 7/8 5 1/4</u> Type Fluid in Hole <u>FOUR</u>	Perm. Duration <u>GI</u> Log Interval From <u>13</u> Drilling Method From <u>KL</u>	Sec. <u>31</u> Twp. <u>32N</u> Rgn. <u>13W</u>	COUNTY <u>SAN JUAN</u> FIELD <u>LA PLATA GALLUP</u> LOCATION <u>SE SE</u>
Date No. <u>7-31-68</u> Depth - Driller <u>THREE</u> Depth - Logger <u>FOUR</u> Hole Log Interval <u>3035</u> Log Log Interval <u>3035</u> Core Log Interval <u>3035</u> Casing - Driller <u>13 1/8 7/8 75/8 @ 2200</u> Casing - Logger <u>9 7/8 5 1/4</u> Type Fluid in Hole <u>FOUR</u>	Perm. Duration <u>GI</u> Log Interval From <u>13</u> Drilling Method From <u>KL</u>	Sec. <u>31</u> Twp. <u>32N</u> Rgn. <u>13W</u>	COUNTY <u>SAN JUAN</u> FIELD <u>LA PLATA GALLUP</u> LOCATION <u>SE SE</u>



SCHUMBERGER
INDUCTION GAMMA RAY LOG

BENSON-MONTIN-GREER DRILLING CORP.

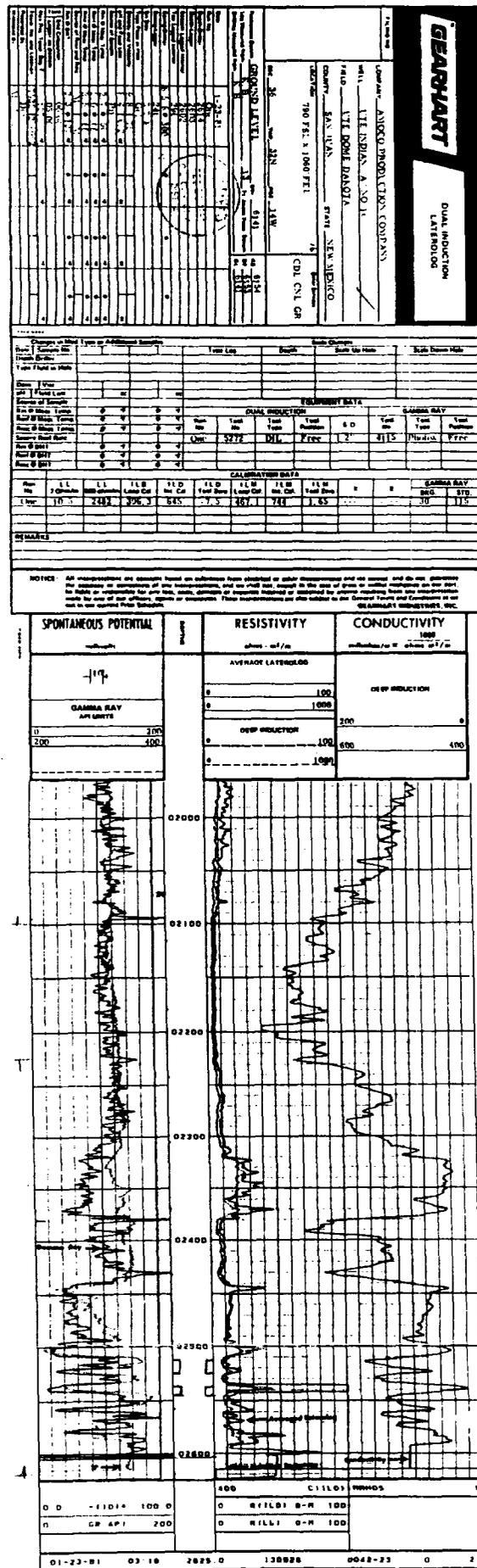
**OPERATED BY: AMOCO PRODUCTION CO.
WELL: UTE INDIAN A No. 16
T 32 N, R 14 W, SECTION 36
SAN JUAN COUNTY, NEW MEXICO**



8 5/8" casing set @ 295'
w/ 310 sacks

4 1/2 " casing set @ 2613'
w/ 660 sacks

T D 2614'



**2 perforations per foot
from 2516' to 2526' and
from 2534' to 2542'**

GIS Injection well

NEW MEXICO-N
SAN JUAN CO.
LA PLATA (D)



Petroleum Information.

CORPORATION
A Subsidiary of A.C. Nielsen Company

LP8nu

Twp 32n-13w
Section 31
SW SW
756 fsl 1208 fwl



Opr: Benson-Montin-Greer

Well : 4 La Plata-Mancos *(N-31)*

Elev: 6115 KB
Tops: None picked.

Dsts & Cores:

No cores or tests.

Spud: 10-9-68 **Comp:** 1-25-70

TD: 2304 **PB:**

Csg: 13 3/8 @ 176 w/100
7 5/8 @ 2219 w/600

Perf: 2219-2304 (op hole), Sdoilfract.

Prod Zone:

Init. Prod: Temp Abnd.

Map NMB-1A

Contr: Loffland

NM-N5-079120

SAN JUAN COUNTY

NEW MEXICO

LA PLATA-MANCOS

31-32N-13W

Well: BENSON-MONTIN-GREER DRLG. CO. #1 LaPlata-Mancos Unit Result: OIL

Loc'n: SE SE, 31-32N-13W, 660' FSL 990' FEL; 3100' Mancos test;
API No. 30-047-20304.

rdm #1 (P. 31)

Spud: 7-13-68; Comp: 1-13-69; Elev: 6062' grd; TD: 3042'

Casing: 13 3/8" 276'/330 sx, 7 5/8" 2700'/500 sx, 5/2" lnr 2389-3042',
2 3/8" tbg 2930'

Prod Zone: (Gallup) T/Pay 2943', Prod thru perfs 2943-2975'

IPP: 45 BOPD

Comp Info: No cores or tests; Perf 2943-75'/2; SOF.

Tops: (EL) Mvde 380', Mancos 1648', Gallup 2654'.

Sea Ranch
OIL REPORTS

Date: 2-20-69

Card No.:

6 km

SAN JUAN COUNTY

NEW MEXICO WILDCAT

6-31N-13W

Well: LLOYD B. TAYLOR #1 Vic Walker *B.M.G.* Result: NEW OIL DISC
Loc'n: NW NW, 6-31N-13W, 850' FNL 1020' FWL; 2000' test; *LPML⁶ (C-6)*
API No. 30-047-20127.

Spud: 9-27-67; Comp: 2-13-68; Elev: 6027' grd; TD: 2510'

Casing: 8 5/8" 33', 7" 1062', 5 1/2" 2248'/150 sx, 2 3/8" 2480'

Prod Zone: (Gallup) T/Pay 2248', Prod from OH: 2248-2510'

IPP: 115 BOPD

Comp Info: No cores or tests; Tstd OH 2248-2510'; SOF.

Tops: (EL) Pt. Lkt 742', Mancos 1690', U/Gallup 1966', L/Gallup 2249', Sana 2403'.

(Re-issued to show add'l & corr details; Orig issued 4-11-68, re-issued 4-25-68).

Geo. Hochstadt
OIL REPORTS

Date: 8-8-68

Card No.:

2 rm

NEW MEXICO-N
SAN JUAN CO.
UTE DOME-DAKOTA
(DG)



Petroleum Information

Corporation

A Subsidiary of A. C. Nielsen Company

Twp 32n-14w
Section 36
se se
790 fs1 1060 fel

OPR: Amoco Production

WELL: 16 Ute Indians-A

El: 6141 Gr
Log Tops:
Mesaverde surf
Mancos 606
Gallup 1754
Greenhorn 2329
Graneros 2376
Dakota 2438

DSTS & CORES

No cores or tests.

Spud 1-18-81 Comp 3-24-81

2614 TD

Csg: 8 5/8 @ 295 w/310
4 1/2 @ 2613 w/660

Perf 2516-26, 2534-42 w/2 pf.
Fract w/119,000 gals foam, 209,000
sd, AIR 9 BPM, ATP 2000. Perf 2444-
76, 2494-2510 w/2 pf.

Prod Zone: Dakota 2444-2542 (gross)

Init Prod: IPF 1652 MCFGPD, 48/64"
ck, TP 130, CP 278.

POMCO Map NM-5
PI Base Map NMB-1A

Contr: Arapahoe #3

API 30-045-24610

NM-N10-181001-A

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FORM NO 327

NEW MEXICO-N
SAN JUAN CO.
UTE DOME-DAKOTA
(DG)



Petroleum Information.
Corporation
A Subsidiary of A. C. Nielsen Company

Twp 32n-13w
Section 31
SW 1/4
1850 fnl 790 fwl



OPR: Benson-Montin-Greer

WELL: 4 LaPlata F-31

El: 6390 KB
Log Tops:
Mancos 1100
Greenhorn 2768
Graneros 2817
Dakota 2873

DSTS & CORES

No cores or tests.

Spud 6-7-79 Comp 8-14-80

3045 TD PB 3038

Csg: 9 5/8 @ 65 w/30
7 @ 1021 w/215
4 1/2 @ 3045 w/135

Perf 2938-43 w/4 pf. Acidized w/
500 gals. Fract w/2349 bbls wtr,
130,000 sd.

Prod Zone: Dakota 2938-43

Init Prod: IPF 605 MCFGPD

POMCO Map NM-5
PI Base Map NMB-1A

Contr: L & M

API 30-045-23475

NM-N19-080301-B

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7/81
FORM NO. 327

NEW MEXICO-N
SAN JUAN CO.
UTE DOME (DG)



Petroleum Information.

Corporation
A Subsidiary of A. C. Nielsen Company

Twp 32n-13w
Section 31
sw ne
1810 fml 2340 fel



OPR: Enserch Expl

WELL: 1 Federal-31

B-M-G lease

El: 6324 Gr
Log Tops:
Hermosa 7158
Ismay 8190
Desert Creek 8366
Akah 8516
Barker Creek 8710
Molas 9206

DSTS & CORES

No cores or tests.

Spud 6-1-79 Comp 8-19-80
9265 TD PB 9159

Csg:
10 3/4 @ 669 w/535
5 1/2 @ 9264 w/500

Perf 7798-8599, 8751-9199.

Prod Zone: Pennsylvanian 7798-9199
(gross)

Init Prod: IPF 350 MCFGPD, 5 BWPD.

POMCO Map NM-5
PI Base Map NMB-1A

Contr: Loffland Bros

API 30-045-23488

NM-N8-088121-B

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8/81

FORM NO. 327

ITEM VIII ATTACHED TO OCD FORM C-108

The injection zone is the Niobrara member of the Mancos formation sometimes called "Gallup". The injection interval is open hole 2205' to 2304'. Net pay approximates 30 feet. There are no known underground sources of drinking water. Additional information was provided the Oil Conservation Commission at pressure maintenance hearing April 1, 1969.

AFFIDAVIT OF PUBLICATION

No. 35961

COPY OF PUBLICATION

STATE OF NEW MEXICO
County of San Juan:

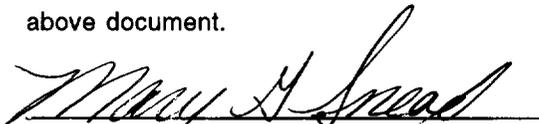
ROBERT LOVETT being duly sworn says: That he is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

Wednesday, February 28, 1996

and the cost of publication is: \$14.59



On 3/4/96 ROBERT LOVETT
appeared before me, whom I know
personally to be the person who signed the
above document.



My Commission Expires March 21, 1998

Legals



Benson-Montin-Greer Drilling Corp., 501 Airport Drive, Suite 221, Farmington, New Mexico 87401, Contact Person Albert R. Greer. Resuming Gas Injection in La Plata Mancos Unit #4 (N-31) Well, Section 31, T-32N, R-13W, San Juan County, New Mexico. Niobrara Member, Depth 2304'. Maximum injection rate 200 MCF/D and maximum pressure 400 psi. Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87504-2088 within 15 days.

Legal No. 35961 published in The Daily Times, Farmington, New Mexico on Wednesday, February 28, 1996.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4074
Order No. R-3714

APPLICATION OF BENSON-MONTIN-GREER
DRILLING CORPORATION FOR A PRESSURE
MAINTENANCE PROJECT, SAN JUAN COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 5, 1969, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 1st day of April, 1969, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Benson-Montin-Greer Drilling Corporation, seeks authority to institute a pressure maintenance project in its La Plata Mancos Unit Area, La Plata-Gallup Oil Pool, San Juan County, New Mexico, by the injection of gas into the Niobrara member of the Mancos shale through its La Plata Mancos Unit Well No. 4, located in Unit N of Section 31, Township 32 North, Range 13 West, NMPM, San Juan County, New Mexico, and by the injection of water into the same formation through its La Plata Mancos Unit Well No. 1, located in Unit P of said Section 31.

(3) That initially the project area should comprise only the following-described area in San Juan County, New Mexico:

TOWNSHIP 31 NORTH, RANGE 13 WEST, NMPM
Section 6: N/2 and SW/4

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM
Section 1: E/2

TOWNSHIP 32 NORTH, RANGE 13 WEST, NMPM
Section 31: All

TOWNSHIP 32 NORTH, RANGE 14 WEST, NMPM
Section 36: E/2

(4) That a pressure maintenance project comprising the above-described area is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(5) That the applicant further seeks the promulgation of special rules and regulations governing said pressure maintenance project, and the establishment of an administrative procedure whereby said project area may be expanded for good cause shown and whereby additional wells in the project area may be converted to injection.

(6) That special rules and regulations for the operation of the BMG La Plata Mancos Pressure Maintenance Project should be promulgated and, for operational convenience, such rules should provide certain flexibility in authorizing the production of the project allowable from any well or wells in the project area in any proportion, provided that no well in the project area which directly or diagonally offsets a well outside the La Plata Mancos Unit Participating Area, producing from the same common source of supply should be allowed to produce in excess of top unit allowable for the La Plata-Gallup Oil Pool until such time as the well has experienced a substantial response to injection. When such a response has occurred, the well should be permitted to produce up to two times top unit allowable for the La Plata-Gallup Oil Pool. Production of such well at a higher rate should be authorized only after notice and hearing.

IT IS THEREFORE ORDERED:

(1) That the applicant, Benson-Montin-Greer Drilling Corporation, is hereby authorized to institute a pressure maintenance

project in its La Plata Mancos Unit Area, La Plata-Gallup Oil Pool, San Juan County, New Mexico, to be designated as the BMG La Plata Mancos Pressure Maintenance Project, by the injection of gas into the Niobrara member of the Mancos shale through the following-described well in San Juan County, New Mexico:

La Plata Mancos Unit Well No. 4,
located in Unit N of Section 31,
Township 32 North, Range 13 West,
NMPM,

and by the injection of water into said formation through the following-described well:

La Plata Mancos Unit Well No. 1,
located in Unit P of Section 31,
Township 32 North, Range 13 West,
NMPM.

(2) That Special Rules and Regulations governing the operation of the BMG La Plata Mancos Pressure Maintenance Project, San Juan County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
BMG LA PLATA MANCOS PRESSURE MAINTENANCE PROJECT

RULE 1. The project area of the BMG La Plata Mancos Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the area in San Juan County, New Mexico, described as follows:

TOWNSHIP 31 NORTH, RANGE 13 WEST NMPM
Section 6: N/2 and SW/4

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM
Section 1: E/2

TOWNSHIP 32 NORTH, RANGE 13 WEST, NMPM
Section 31: All

TOWNSHIP 32 NORTH, RANGE 14 WEST, NMPM
Section 36: E/2

RULE 2. The allowable for the Project shall be the sum of the allowables of the several wells within the project area,

including those wells which are shut-in, curtailed, or used as injection wells. Allowables for all wells shall be determined in a manner hereinafter prescribed.

RULE 3. Allowables for injection wells may be transferred, to producing wells within the project area, as may the allowables for producing wells which, in the interest of more efficient operation of the Project, are shut-in or curtailed because of high gas-oil ratio or are shut-in for any of the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids or progress of sweep.

RULE 4. The allowable assigned to any well which is shut-in or which is curtailed in accordance with the provisions of Rule 3, which allowable is to be transferred to any well or wells in the project area for production, shall in no event be greater than its ability to produce during the test prescribed by Rule 6, below, or greater than the current top unit allowable for the pool during the month of transfer, whichever is less.

RULE 5. The allowable assigned to any injection well on a 160-acre proration unit shall be top unit allowable for the La Plata-Gallup Oil Pool.

RULE 6. The allowable assigned to any well which is shut-in or curtailed in accordance with Rule 3, shall be determined by a 24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well should be produced in the same manner and at a constant rate. The daily tolerance limitation set forth in Commission Rule 502 I (a) and the limiting gas-oil ratio (2,000 to 1) for the La Plata-Gallup Oil Pool shall be waived during such tests. The project operator shall notify all operators offsetting the well, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission, if they so desire.

RULE 7. The basic allowable assigned to each producing well in the Project shall be equal to the well's ability to produce or to top unit allowable for the pool, whichever is less, provided that any producing well in the project area which directly or diagonally offsets a well outside the La Plata Mancos Unit Participating Area producing from the same common source of supply shall not produce in excess of two times top unit allowable for the pool. Each producing well shall be subject to the

limiting gas-oil ratio (2,000 to 1) for the pool, except that any well or wells within the project area producing with a gas-oil ratio in excess of 2,000 cubic feet of gas per barrel of oil may be produced on a "net" gas-oil ratio basis, which net gas-oil ratio shall be determined by applying credit for daily average gas injected, if any, into the pool within the project area to such high gas-oil ratio well. The daily adjusted oil allowable for any well receiving gas injection credit shall be determined in accordance with the following formula:

$$A_{adj} = \frac{TUA \times F_a \times 2,000}{\frac{P_g - I_g}{P_o}}$$

where:

- A_{adj} = the well's daily adjusted allowable
- TUA = top unit allowable for the pool
- F_a = the well's acreage factor
- P_g = average daily volume of gas produced by the well during the preceding month, cubic feet
- I_g = the well's allocated share of the daily average gas injected during the preceding month, cubic feet
- P_o = average daily volume of oil produced by the well during the preceding month, barrels

In no event shall the amount of injected gas being credited to a well be such as to cause the net gas-oil ratio, $\frac{P_g - I_g}{P_o}$, to be less than 2,000 cubic feet of gas per barrel of oil produced.

RULE 8. Credit for daily average net water injected into the pool through any injection well located within the project area may be converted to its gas equivalent and applied to any well producing with a gas-oil ratio in excess of two thousand cubic feet of gas per barrel of oil. Total credit for net water injected in the project area shall be the gas equivalent volume

of the daily average net water injected during a one-month period. The daily average gas equivalent of net water injected shall be computed in accordance with the following formula:

$$E_g = (V_{w \text{ inj}} - V_{w \text{ prod}}) \times 5.61 \times \frac{P_a}{15.025} \times \frac{520^\circ}{T_r} \times \frac{1}{Z}$$

where:

- E_g = Average daily gas equivalent of net water injected, cubic feet
- $V_{w \text{ inj}}$ = Average daily volume of water injected, barrels
- $V_{w \text{ prod}}$ = Average daily volume of water produced, barrels
- 5.61 = Cubic foot equivalent of one barrel of water
- P_a = Average reservoir pressure at mid-point of the pay-zones of the pool in the project area, psig + 14.0, as determined from most recent survey
- 15.025 = Pressure base, psi
- 520° = Temperature base of 60°F expressed as absolute temperature
- T_r = Reservoir temperature of 115°F expressed as absolute temperature (575°R)
- Z = Compressibility factor from analysis of La Plata-Gallup gas at average reservoir pressure, P_a , interpolated from compressibility tabulation below:

Reservoir Pressure	Z	Reservoir Pressure	Z
400	.825	200	.910
350	.845	150	.933
300	.863	100	.954
250	.885	50	.980

RULE 9. Each month the project operator shall, within three days after the normal unit allowable for Northwest New Mexico has been established, submit to the Commission a Pressure Maintenance Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project as well as the total Project allowable. The aforesaid Pressure Maintenance Project Operator's Report shall be filed in lieu of Form C-120 for the Project.

RULE 10. The Commission shall, upon review of the report and after any adjustments deemed necessary, calculate the allowable for each well in the Project for the next succeeding month in accordance with these rules. The sum of the allowables so calculated shall be assigned to the Project and may be produced from the wells in the Project in any proportion except that no well in the Project which directly or diagonally offsets a well outside the Project producing from the same common source of supply shall produce in excess of two times top unit allowable for the pool.

RULE 11. The conversion of producing wells to injection, the drilling of additional wells for injection, and expansion of the project area shall be accomplished only after approval of the same by the Secretary-Director of the Commission. To obtain such approval, the project operator shall file proper application with the Commission, which application, if it seeks authorization to convert additional wells to injection or to drill additional injection wells shall include the following:

(1) A plat showing the location of proposed injection well, all wells within the project area, and offset operators, if any there be, locating wells which offset the project area.

(2) A schematic drawing of the proposed injection well which fully describes the casing, tubing, perforated interval, and depth showing the injection of gas or water will be confined to the Niobrara member of the Mancos shale.

(3) A letter stating that all offset operators, if any there be, to the proposed injection well have been furnished a complete copy of the application and the date of notification.

The Secretary-Director may approve the proposed injection well if, within 20 days after receiving the application, no

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objection to the proposal is received. The Secretary-Director may grant immediate approval, provided waivers of objection are received from all offset operators.

Expansion of the project area may be approved by the Secretary-Director of the Commission administratively when good cause is shown therefor.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

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