



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

GABRIEL CARBUTHERS
GOVERNOR

10-25-88

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

WEX-577

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

RE: Proposed:

MC _____
DHC _____
NSL _____
NSP _____
SWD _____
WFX ☒ _____
PMX _____

Gentlemen:

I have examined the application for the: *Bluth SA Unit Sec. 18 #13-M 18-8-38*

Murphy Oper Corp. *Bluth SA Unit Sec. 18 #5-E 18-8-38*
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OKJS

Yours very truly,

Jerry Sexton

Jerry Sexton
Supervisor, District 1

/ed

MURPHY OPERATING CORPORATION
UNITED BANK PLAZA, SUITE 300
400 NORTH PENNSYLVANIA AVENUE
POST OFFICE BOX 2648
ROSWELL, NEW MEXICO 88202-2648

TELEPHONE
505 623-7210

October 21, 1988

Mr. David R. Catanach, Petroleum Engineer
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Request for Approval to Convert Two (2)
Wells to Injection / Expansion of Waterflood;
Bluitt San Andres Unit ("the Bluitt Unit");
Roosevelt County, New Mexico.

Dear Mr. Catanach:

I have enclosed herewith for your review and approval Murphy Operating Corporation's (MOC) application dated October 11, 1988 for the conversion to injection of two (2) wells located in the Bluitt San Andres Unit referenced above. The utilization of these wells (#18-5, and #18-13 marked in blue on the map attached hereto) will create a nine-spot pattern. This configuration will permit MOC to monitor the pilot water flood project for any potentially adverse preferential permeability trends prior to expanding to the ultimate flood pattern of 80-acre five spots, where appropriate throughout the unit.

Enclosed with the application is a land plat upon which a 1/2 mile radius circle ("area of review") has been drawn around each injection well. A schematic diagram for each of the injection wells with the required downhole information is also included herewith. Certain statements necessary to the completion of application Form C-108 are given below:

REQUIRED INFORMATION: (Presented in same sequence and format as on Form C-108)

- V. Attached as Exhibit I
- VI. Included in tabular form attached hereto.
Note that there are two (2) plugged wells within the area(s) of review. (see schematic diagrams attached).
- VII. 1) Included in tabular form (see VI above).
2) This is a closed system.
3) Included in tabular form (see VI above).
4) Attached, see water analysis and letter dated August 31, 1988 from Permian Treating Chemicals.
5) Not applicable.
- VIII. Geological data and description of "Injection Zone" and "Fresh Water Zones" in area.

Injection Zone: The proposed injection zone is known as the Slaughter P-2 porosity zone of the San Andres Formation. This zone is a tan to brown dolomite. Scattered anhydrite inclusion and bedding occurs along with infrequent zones of fine solution porosity. The top of the P-2 occurs at approximately 4620' below ground level and has an approximate thickness of 40 to 60 feet. This zone dips south and east and as a result the bottom of this zone can occur at depths approaching 4700' below ground level.

RECEIVED

OCT 24 1988

OCD
HOBBS OFFICE

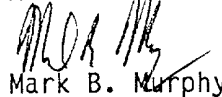
Fresh Water Zone: The only known fresh water source in this area is the Ogalala Formation. This is a fresh water sand that is infrequently present throughout the area. The maximum reported depth is approximately 220 feet below ground level as evidenced in MOC's water well located approximately 3/4 miles west of the proposed injection wells. If a local presence of the Ogalala exists, it will be protected by the 290 feet or more of 8 5/8" surface casing set in all of the wells in the Bluit San Andres Unit.

- IX. All past stimulation programs are listed in tabular form (see VI above).
- X. Wells logs have been previously submitted to the Division.
- XI. The required chemical analysis of two or more fresh water wells is included in Permian Treating Chemical's letter dated August 31, 1988 which is attached hereto.
- XII. Although this requirement is for disposal wells, Murphy Operating Corporation has examined available geologic and engineering data and finds no evidence of open faults or any other hydrologic connection between the proposed disposal (injection) zone and any underground source of drinking water
- XIII. The Proof of Notice requirement is being complied with. The legal advertisement is to be published in the Portales Tribune, Portales, New Mexico for three consecutive days beginning Wednesday, October 19, 1988, and ending Friday, October 21, 1988. The Affidavit of Publication will be forwarded to your office next week when we receive same from the Portales Tribune. A copy of the certified return receipts from the landowner, Dick Buffington, Mauriceville, Texas and the offsetting leasehold operators within 1/2 mile are included herein.

Murphy Operating Corporation hereby respectfully requests administrative approval to the application contained herein. Should you have any questions or comments, please contact the undersigned at the telephone number listed above.

Sincerely,

MURPHY OPERATING CORPORATION


Mark B. Murphy

President and Chief Operating Officer

MBM/js

cc: Mr. Jerry Sexton, Supervisor
Oil Conservation Division
Post Office Box 1980
Hobbs, New Mexico 88240

Enclosures:

Exhibit I - Landplats outlining "Area of Review";
Table of Drilling and Completion Information;
Letter - Permian Treating Chemicals dated 8/31/88;
Schematic diagrams for wells #18-5 and #18-13;
Schematic diagrams and tabular information for P & A'd wells within Area of Review;
Copies of certified return receipt(s) from landowner and offsetting leasehold operators.

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: MURPHY OPERATING CORPORATION
Address: POST OFFICE BOX 2648, ROSWELL, NEW MEXICO 88202-2648
Contact party: MARK B. MURPHY Phone: 505/623-7210
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project R-8118.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Matt B. Murphy Title: Operations Agent
Signature: *Matt B. Murphy* Date: 10/11/88
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

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

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

TABLE OF DRILLING AND COMPLETION INFORMATION ON PROPOSED INJECTION AND PRODUCING WELLS WITHIN AREA OF REVIEW
PROPOSED BLUITT SAN ANDRES UNIT, ROOSEVELT COUNTIES, NEW MEXICO

Well Name & Location	Unit Well#	Well Type*	Casing Record	Date Drig. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Downhole Tubing	Injection Equipment Packer
MOC originally Roden Oil Company Bluit Federal #1 E-18-T8S-R-37E 39E 2086' FNL & 554' FML Elevation 4004.5' GR	18-5	IP	301' 8 5/8" 24# in 12 1/4" hole 200 sacks cmt. Circ. to surf. 4738' 5 1/2" 14# in 7 7/8" hole 272 sacks cmt. TOC 4400' by Calc.	01-17-69/ 02-24-69	TD 4738' PBTD 4720'	1-2 SPI (Eleven holes) 4697, 4701, 4702, 4707, 4712, 4715, 4716, 4717 01-05-88 (1 JPSF) 4688, 4691, 4694, 4698, 4792, 4705, 4707, 4710, 4713, 4715, 4717	Acidize w/3500 gals 15% Hcl Acidize w/2000 gals 15% NeFe	2 3/8" 4.7# J-55 Ceramic lined set @ 4425'	5 1/2" AD-1 Tension Packer s @ 4428'
MOC originally Frankl in Aston & Fair Shaw Federal #2 M-18-T8S-R-38E 660' FSL & 660' FML Elevation 4000' GR 4009' KB	18-13	IP	293' KB 8 5/8" 20# in 12 1/4" hole, 175 sacks cmt. Circ. to surf. 4733' KB 5 1/2" 14# in 7 7/8" hole, 275 sacks cmt. TOC 4430' by CBL.	02-01-69/ 02-08-69	TD 4733' PBTD 4728'	1 JSPF 4690, 4692, 4693, 4696, 4698, 4699, 4703, 4704, 4709, 4711, 4712	Acidize w/3500 gals DS-30 acid 12-01-87 Acidize w/300 gals Xylene, 1500 gals 15% NeFe	2 3/8" 4.7# J-55 Ceramic lined set @ 4428'	5 1/2" AD-1 Tension Packer s @ 4431'
MOC originally Eugene E. Nearburg 3aetz Federal #1 G-13-T8S-R-37E 1980' FNL & 1980' FEL Elevation 3999.4'	13-7	I	300' 8 5/8" 20# in 12 1/4" hole 150 sacks cmt. Circ to surf. 4793' 4 1/2" 9.5# in 7 7/8" hole 200 sacks cmt. TOC 4030' CBL.	02-11-69/ 02-26-69	TD 5050' PBTD 4728'	1 JSPF 4649, 4649%, 4655, 4655%, 4661, 4661%, 4667, 4667%, 4675, 4675%, 4679, 4679%	Acidize w/3000 gals 15% DS-30 Acid 09-26-88 Acidize w/2000 gals 15% NeFe	2 3/8" 4.7# J-55 Ceramic lined set @ 4507'	4 1/2" AD-1 Tension Packer set @ 4510'

KEY: P-Producing IP-Proposed Injection
I-Injection TA-Temporarily Abandoned

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PROPOSED BLUITT SAN ANDRES UNIT, ROOSEVELT COUNTIES, NEW MEXICO

Well Name & Location	Unit Well #	Well Type*	Casing Record	Date Drig. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed	Injection Equipment
								Downhole Tubing	
MOC originally layton Enterprises Bluitt Federal #3 0-13-T8S-R37E 660' FSL & 1980 FEL Elevation 3997 GL	13-15	I	402' 8 5/8" 24# in 12 1/4" hole 325 sacks cmt. Circ. to surf. 4740' 4 1/2" 9.5# in 7 7/8" hole 500 sacks cmt. Circ. to surf.	10-02-77/ 11-11-77	TD 4750' P8TD 4727'	1 JSPF 4640, 4642, 4644, 4646, 4648, 4650, 4652, 4654, 4656, 4658, 4660, 4662, 4664, 4666, 4670, 11-18-88 (1 JSPF) 4641, 4643, 4645, 4646, 4648, 4650, 4652, 4654, 4657, 4659, 4661, 4662, 4664, 4666, 4668, 4669, 4671, 4672, 4673, 4675	Acidize w/16000 gals 20% Hcl-Ne & 1000 gals Xylene 11-18-88 Acidize w/6000 gals PAD Acid	2 3/8" 4.7# J-55 Ceramic lined set @ 4397'	4 1/2" AD-1 Tension Packer set @ 4400'
MOC originally Eugene Nearburg Baetz Federal #4 C-13-T8S-R-37E 587' FNL & 1849' FML Elevation 4011' GR	13-3	P	303' 8 5/8" 28# in 12 1/4" hole 150 sacks cmt. Circ to surf. 4751' 4 1/2" 9.5# in 7 7/8" hole 200 sacks cmt. TOC 3956' by CBL.	06-23-69/ 07-01-69	TD 4760' P8TD 4751'	1 JSPF 4633, 4640, 4644, 4645, 4653, 4656, 4659, 4662 KB	Acidize w/6000 gals 15% NeFe		
MOC originally Eugene Nearburg Baetz KGS #1E E-13-T8S-R-37E 1980' FNL & 660' FEL TOC 4200' by CBL	13-5	P	307 8 5/8" 24# in 12 1/4" hole 150 sacks cmt. Circ to surf. 4730' 5 1/2" 14# in 7 7/8" hole 200 sacks cmt. TOC 4200' by CBL.	07-02-69/ 07-16-69	TD 4740' KB P8TD 4687'	Perforate 9 holes 4608, 4609, 4613, 4618 4623, 4627, 4630, 4635 11-02-87 Squeeze perfs at 4608-4635 280 sacks cmt.	Acidize w/6000 gals 15% NeFe 10-30-87 Acidize w/5000 gals 15% NeFe Int (4608'-4636')	11-04-87 Acidize w/4000 gals PAD acid	

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PROPOSED BLUITT SAN ANDRES UNIT, ROOSEVELT COUNTIES, NEW MEXICO

Well Name & Location	Unit Well#	Well Type*	Casing Record	Date Drig. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Downhole Tubing
MOC originally Eugene Nearburg Baetz Federal #3 H-13-T8S-R-37E 1980' FNL & 660' FEL Elevation 3995.3	13-8	P	303' 8 5/8" 28# in 12 1/4" hole 150 sacks cmt. Circ. to surf. 4767' 4 1/2" 9.5# in 7 7/8" hole 200 sacks cmt. TOC 4050' by Calc.	02-14-69/ 02-26-69	TD 4780' PBTD 4747'	1 JSPF 4670, 4672, 4677, 4683, 4685, 4692, 4694, 4698	Acidize w/6000 gals 15% 12-05-87 Acidize w/2000 gals Ne-WS38	
MOC originally Franklin, Aston & Fair Bluit Federal #1 I-13-T8S-R-37E 1980' FSL & 660' FEL Elevation 4003' DF 3991.3 GR	13-9	P	295' 8 5/8" 20# in 12 1/4" hole 150 sacks cmt. Circ. to surf. 4756' 5 1/2" 14# in 7 7/8" hole 275 sacks cmt. TOC 3850' by CBL.	10-01-68/ 10-17-68	TD 4756' PBTD 4728'	1 JSPF at selected intervals from 4661-4680 9 holes 12-11-88 (1 JSPF) 4665, 4667, 4672, 4675, 4679 4681, 4684, 4687, 4688, 4690	Acidize w/3000 gals 15% DS-30 12-11-88 Acidize w/1000 gals Ne-WS38 Int. 4661-4680 12-11-88 Acidize w/3000 gals 15% NeFe Int. 4661-4690	
MOC originally Franklin, Aston & Fair Bluit Federal #2 J-13-T8S-R-37E 1980' FSL & 1980' FEL Elevation 3997.5 GR	13-10	P	286' 8 5/8" 20# in 12 1/4" hole 175 sacks cmt. Circ. to surf. 4694' 5 1/2" 14# in 7 7/8" hole 275 sacks cmt. TOC 3850' by CBL.	12-10-68/ 12-22-68	TD 4694' PBTD 4688'	1 JSPF 4645, 4648, 4651, 4657, 4658, 4664, 4667, 4669	Acidize w/9000 gals 15% HCl	
MOC originally Eugene Nearburg Baetz Federal #2 K-13-T8S-R-37E 1980' FSL & 1980' FEL Elevation 3997.5 GR	13-11	P	295' 8 5/8" 24# in 12 1/4" hole 295' 8 5/8" 24# in 12 1/4" hole sacks cmt. Circ. to surf. 4787' 4 1/2" 9.5# in 7 7/8" hole sacks cmt. TOC 4100' by Calc.	02-04-69/ 02-13-69	TD 4800' KB PBTD 4729' KB	1 JSPF 4623, 4625, 4628, 4634, 4636, 4642, 4645, 4648, 4652	Acidize w/6000 gals 15% acid 12-03-87 Acidize w/2400 gals 15% Ne-WS48	

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PROPOSED BLUITT SAN ANDRES UNIT, ROOSEVELT COUNTIES, NEW MEXICO

Well Name & Location	Unit Well #	Well Type*	Casing Record	Date Drig. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Downhole Tubing	Injec Equip Pack
MOC originally Eugene Nearburg Baetz Federal #5 N-13-T8S-R37E 660' FSL & 1980' FWL Elevation 3992.2 GR	13-14	P	294' 8 5/8" 24# in 12 1/4" hole 150 sacks cmt. Circ. to surf. 4733' 4 1/2" 9.5# in 7 7/8" hole 200 sacks cmt. TOC 3878' by CBL.	07-12-69/ 07-19-69	TD 4733' KB PBTD 4715'	1 JSPF 4669, 4672, 4678, 4680, 4684, 4687, 4691, 4694, 4698	Acidize w/6000 gals 15% NeFe 12-24-87 Acidize w/2000 gals 15% NeFe		
MOC originally Frankl in Aston & Fair Shaw Federal #1 L-18-T8S-R37E 1980' FSL & 660' FWL Elevation 3984.7' GR 3996.7 KB	18-12	P	295' 8 5/8" 20# in 12 1/4" hole 175 sacks cmt. Circ. to surf. 4740' 5 1/2" 14# in 7 7/8" hole 275 sacks cmt. TOC 3870' by CBL.	12-01-68/ 12-11-68	TD 4740' PBTD 4726'	1 JSPF 4688, 4690, 4692, 4693, 4696, 4697, 4700, 4702, 4704 01-03-88 (1 JSPF) 4676, 4682, 4686, 4690, 4693, 4695, 4701, 4708, 4710, 4713	Acidize w/3000 gals 15% acid. 01-03-88 Acidize w/2000 gals 15% NeFe		
MOC originally Frankl in Aston & Fair Roden Federal #2 C-19-T8S-R38E 1874' FWL & 554' FNL Elevation 3994.2' GR	19-3	P	295' KB 8 5/8" 20# in 12 1/4" hole, 175 sacks cmt. Circ. to surf. 4765' KB 5 1/2" 14# in 7 7/8" hole, 275 sacks cmt. TOC 3900' by CEL.	04-15-69/ 04-25-69	TD 4765' PBTD 4753'	1 JSPF 4724, 4726, 4727, 4728, 4732, 4734, 4744, 4746, 4747	Acidize w/3000 gals 15% Acid. 12-08-87 Acidize w/2000 gals 15% NeFe.		
MOC originally Roden Oil Company Roden Bluitt Fed #2 D-19-T8S-R38E 510' FNL & 660' FWL Elevation 4010.2' GR	19-4	P	345' 8 5/8" 20# in 12 1/4" hole 200 sacks cmt. Circ. to surf. 4770' 5 1/2" 14# in 7 7/8" hole 275 sacks cmt. TOC 4400' by Calc.	04-04-69/ 04-28-69	TD 4770' PBTD 4768'	11-19-87 (1 JSPF) 4718, 4720, 4724, 4726, 4728, 4730, 4732, 4734, 4736	04-18-69 Acidize w/1000 gals 15% Acid. 11-19-87 Acidize w/3750 gals PAD Acid.		

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PROPOSED BLUITT SAN ANDRES UNIT, ROOSEVELT COUNTIES, NEW MEXICO

Well Name & Location	Unit Well#	Well Type*	Casing Record	Date Drig. & Comp.	Total Depth	Perforations/Open Hole	Completion	Proposed Downhole Tubing	Injecti Equipme Packer
MOC originally Franklin Aston & Fair McEaw Federal #1 A-24-T8S-R37E 660' FNL & 660' FEL Elevation 4007' KB 3997.9' GR	24-1	P	295' KB 8 5/8" 20# in 12 1/4" hole, 175 sacks cmt. Circ. to surf. 4748' KB 5 1/2" 14# in 7 7/8" hole, 275 sacks cmt. TOC 4150' by CBL.	02-24-69/ 03-08-69	TD 4748' PBTD 4739'	1 JSPF 4702, 4704, 4708, 4710, 4714, 4717, 4718, 4725, 4726, 4732	Acidize w/3500 gals DS-30 12-10-87 Acidize w/2000 gals 15% NE-WS38		
MOC originally Tom L. Ingram Ingram Fed E #2 B-24-T8S-R37E 554' FNL & 1874' FEL Elevation 3987' GR	24-2	P	315' 8 5/8" 20# in 12 1/4" hole 200 sacks cmt. Circ. to surf. 4750' 4 1/2" 9.5# in 7 7/8" hole 275 sacks cmt. TOC 3650' by Calc.	03-31-69/ 04-21-69	TD 4750' PBTD 4732'	1 JSPF 4703, 4705, 4707, 4709, 4711, 4716, 4717, 4724, 4725, 4729	04-21-69 Acidize w/3000 gals 15% DS-30 12-22-87 Acidize w/2000 gals 15% NeFe		
MOC originally Tom L. Ingram Ingram Fed E #1 C-24-T8S-R37E 660' FNL & 1980' FML Elevation 3993' GR	24-3	P	339' 8 5/8" 32# in 11" hole 375 sacks cmt. Circ. to surf. 4830' 4 1/2" in 9" hole 275 sacks cmt. TOC 3700' by Calc.	02-24-69/ 06-15-69	TD 4830' PBTD 4725'	1 JSPF 4746, 4747, 4749, 4750, 4751, 4753, 4756, 4758, 4768, Reperforated (1 JSPF) 4618, 4620, 4636, 4638, 4643, 4649, 4650, 4668, 4669, 4673, 4674, 4675, 4681, 4685, 4689, 4691	Acidize w/4500 gals DS-30 Reacidized w/2500 gals 15% Second stage 6000 gals 15% Frac w/20,000 gals lease oil & 16,000# sand		

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I-Injection TA-Temporarily Abandoned

PERMIAN

Treating Chemicals, Inc.

P. O. BOX 815
TATUM, NM 88267
PHONE (505) 398-4111

August 31, 1988

Murphy Operating Corporation
P. O. Drawer 2648
Roswell, NM 88202-2648

Subject: Compatibility of fresh & produced water from Bluitt San Andres unit.

Gentlemen:

We have ran analysis's on fresh, produced and commingled waters from the above mentioned lease (see attached copies.)

We at Permian Treating Chemicals, Inc. feel that these waters injected separately or commingled are very compatible.

If we can be of any further assistance, please call myself or Mr. Gale Blackwell at anytime.

Sincerely,



David Nailon,
Permian Treating Chemicals, Inc.

OCT 6 1988

PERMIAN

Treating Chemicals, Inc.

P.O. BOX 728
LOVINGTON, N.M. 88260
PHONE (505) 398-5674

WATER ANALYSIS REPORT

Company Murphy Operating Date Sampled 8-31-88
Field Bluitt Field County Blanco
Lease Unit Sec 24 State New Mexico
Well #1 Formation San Andres
Type of Water Produced Water, B/D
Sampling Point Wellhead Sampled By David Nailon

DISSOLVED SOLIDS

CATIONS

	mg/l	meq/l
Sodium, Na+(Calc)	51175	2225
Calcium, Ca++	17880	894
Magnesium, Mg++	73143	600
Barium, Ba++		68.7
Iron, Fe (Total)		

ANIONS

Chloride, Cl-	132000	3718
Sulfate, So ₄ ⁼		48
Carbonate, Co ₃ ⁼		30
Bicarbonate, HCo ₃ ⁻	85	1
		3719

OTHER PROPERTIES

pH 5.6
Specific Gravity
H₂S
Total Dissolved Solids 274,283
Total Hardness 74800

Remarks and Recommendations

PERMIAN

Treating Chemicals, Inc.

P.O. BOX 728
LOVINGTON, NM 88260
PHONE (505) 396-5674

WATER ANALYSIS REPORT

Company Murphy Operating

Date Sampled 8/31/88

Field Bluitt

County _____

Lease GunBarrel

State NM

Well _____

Formation _____

Type of Water Comingled

Water, B/D _____

Sampling Point GunBarrel

Sampled By _____

DISSOLVED SOLIDS

OTHER PROPERTIES

CATIONS

mg/l

meq/l

Sodium, Na+(Calc) 2737

23

119

Calcium, Ca++ 1000

20

50

Magnesium, Mg++ 292

12.2

24

Barium, Ba++ _____

68.7

Iron, Fe (Total) _____

pH 6.8

Specific Gravity

1.00

H₂S Neg.

Total Dissolved

Solids 11224

Total Hardness

3700

ANIONS

Chloride, Cl- 6000

35.5

169

Sulfate, So₄= 975

48

20

Carbonate, Co₃= 0

30

0

Bicarbonate, HCo₃- 220

61

4

Remarks and Recommendations _____

PERMIAN

Treating Chemicals, Inc.

P.O. BOX 728
LOVINGTON, N.M. 88260
PHONE (505) 398-5874

WATER ANALYSIS REPORT

Company Murphy Operating Date Sampled 8-31-88
Field _____ County Curry
Lease Bluitt San Andres State NM
Well FW #1 Formation FW
Type of Water Fresh Water, B/D _____
Sampling Point Well Sampled By Nailon

DISSOLVED SOLIDS

CATIONS

	mg/l		meq/l
Sodium, Na+(Calc)	460	+ 23	20
Calcium, Ca++	87	+ 20	4
Magnesium, Mg++	54	+ 12.2	4
Barium, Ba++		+ 68.7	
Iron, Fe (Total)			

ANIONS

Chloride, Cl-	500	+ 35.5	14
Sulfate, So ₄ -	547	+ 48	11
Carbonate, Co ₃ -		+ 30	
Bicarbonate, HCo ₃ -	191	+ 61	3

OTHER PROPERTIES

pH 7.4
Specific Gravity 1.009
H₂S Neg
Total Dissolved Solids 1839
Total Hardness 405

Remarks and Recommendations _____

PERMIAN

Treating Chemicals, Inc.

P. O. BOX 728
LOVINGTON, NM 88260
PHONE (505) 386-5674

WATER ANALYSIS REPORT

Company Murphy Operating Date Sampled 8-31-88
Field Bluitt County Bluitt
Lease Bluitt San Andres State NM
Well #2 Formation F/W
Type of Water Fresh Water, B/D Well
Sampling Point Well Sampled By Nailon

DISSOLVED SOLIDS

CATIONS

	mg/l	meq/l
Sodium, Na+(Calc)	690	23
Calcium, Ca++	89	20
Magnesium, Mg++	48	12.2
Barium, Ba++		68.7
Iron, Fe (Total)	0	

ANIONS

Chloride, Cl-	800	35.5
Sulfate, So ₄ ⁼	553	48
Carbonate, Co ₃ ⁼	0	30
Bicarbonate, HCo ₃ ⁻	198	61

OTHER PROPERTIES

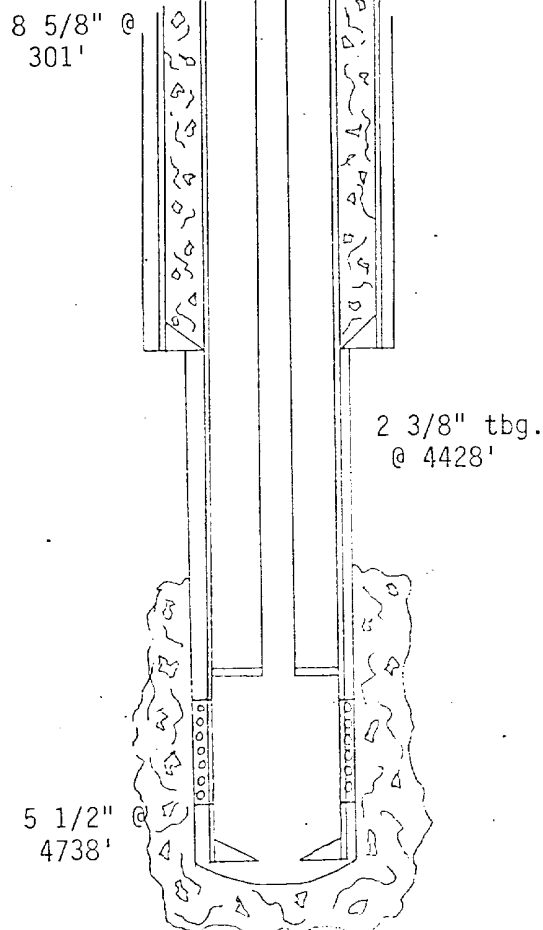
pH 7.2
Specific Gravity 1.008
H₂S Neg
Total Dissolved Solids 2378
Total Hardness 408

Remarks and Recommendations

INJECTION WELL DATA SHEET

MURPHY OPERATING CORPORATION		BLUITT SAN ANDRES UNIT		
OPERATOR		LEASE		
18-5	2086- FNL & 554' FWL	18	8S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 200 sx.TOC Surface feet determined by circulationHole size 12 1/4"

Intermediate Casing

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 5 1/2 " Cemented with 275 sx.TOC 4400 feet determined by calculationHole size 7 7/8"Total depth 4738' TD 4720' PBTD

Injection interval

4688 feet to 4717 feet
(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with ceramic epoxy set in a
(material)
AD-1 packer at 4428 feet
(brand and model)

(or describe any other casing-tubing seal).

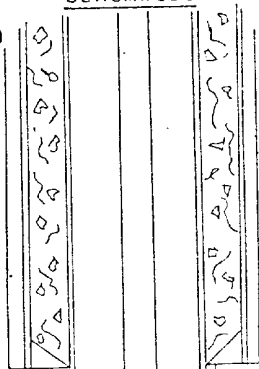
Other Data

- Name of the injection formation P-2 San Andres
- Name of Field or Pool (if applicable) Bluitt San Andres Unit
- Is this a new well drilled for injection? ☐ Yes ☒ No
If no, for what purpose was the well originally drilled? Oil & gas producer
- 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
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. P-1 San Andres zone produces gas in this general area and occurs at a depth of 4562' - 4668'.

INJECTION WELL DATA SHEET

MURPHY OPERATING CORPORATION
OPERATORBLUITT SAN ANDRES UNIT
LEASE18-13
WELL NO.660' FSL & 660' FWL
FOOTAGE LOCATION18
SECTION8S
TOWNSHIP38E
RANGE

Schematic

8 5/8" @
293'2 3/8" tbg.
@ 4431'5 1/2" @
4733'

Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 175 sx.TOC Surface feet determined by circulationHole size 12 1/4"

Intermediate Casing

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 5 1/2 " Cemented with 275 sx.TOC 4430 feet determined by CBLHole size 7 7/8"Total depth 4733' TD 4728' PBTD

Injection interval

4690 feet to 4712 feet
(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with ceramic epoxy set in a
(material)
AD-1 packer at 4431 feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation P-2 San Andres
- Name of Field or Pool (if applicable) Bluitt San Andres Unit
- Is this a new well drilled for injection? ☐ Yes ☒ No
If no, for what purpose was the well originally drilled? Oil & gas producer
- 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
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. P-1 San Andres zone produces gas in this general area and occurs at a depth of 4560' - 4674'.

Bluitt San Andres Unit
Roosevelt County, New Mexico

Company Name: Austral Oil Exploration Company, Inc.

Lease Name: C. P. Yadon

Well No.: 1

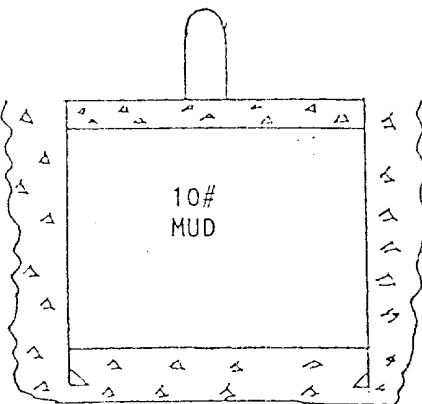
Location: Unit M Sec. 7 T-8-S, R-38-E 660FSL & 660FWL

Drilling and Completion Data

10 3/4" @ 315' w/200 sx circ.

Plugging and Abandonment Data

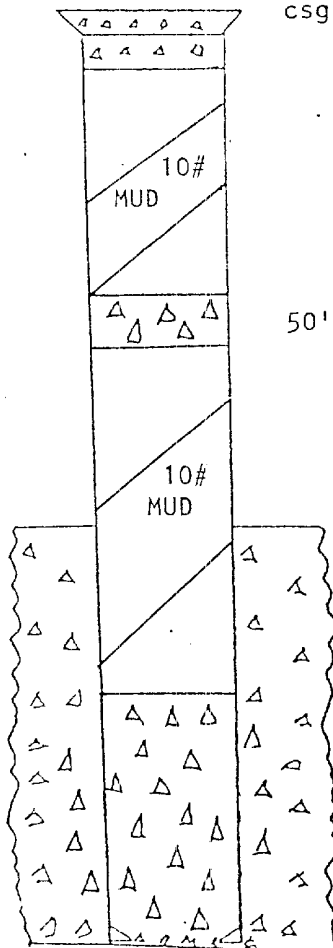
50' cmt plug at surface



5 1/2" @ 4596' w/100 sx circ.

50' cmt plug 300'-350'

csg cut and pulled @ 1988'



50' cmt plug 1950'-2000'

Perfs: none

Set a 300' cmt plug from
4490'-4790'

5 1/2" csg set to 4596'

TD 4790'

DUPLICATE

NEW MEXICO OIL CONSERVATION COMMISSION
MISCELLANEOUS REPORTS ON WELLS

RECEIVED
JUL 1 1952

Submit this report in triplicate to the Oil Conservation Commission District Office within ten days after the work specified is completed. It should be signed and filed as a report on beginning drilling operations, results of shooting well, results of test of casing shut off, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below.

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL		REPORT ON PULLING OR OTHERWISE ALTERING CASING	X
REPORT ON RESULT OF TEST OF CASING SHUT-OFF		REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL	X		

August 4, 1952

Houston, Texas

Date

Place

Following is a report on the work done and the results obtained under the heading noted above at the.....

Austral Oil Exploration Company Inc. C. P. Yadon Well No. 1 In the
Company or Operator Lease
SW, SW of Sec. 7, T. 8S, R. 38E, N. M. P. M.,
Bluit Pool Roosevelt County.

The dates of this work were as follows: July 23 through 25, 1952

Notice of intention to do the work was (XXXX) submitted on Form C-102 on June 17, 1952, and approval of the proposed plan was (XXXX) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Well T.D. 4790. 5-1/2" casing originally set at 4596. a 300' cement plug was placed in hole from 4790 up to 4490'. Casing was cut and pulled at 1988'. A 50' cement plug was placed in hole from 2000' up to 1950'; a 50' cement plug was placed in hole from 350' back up into surface casing to 300'. A 50' cement plug was placed in top of surface casing and an iron marker placed in cement extending 4' above ground surface. The hole is completely filled with a 10#/gal. mud.

Witnessed by W. O. Speegle Austral Oil Expl. Co. Inc. Field Supt.
Name Company Title

APPROVED: OIL CONSERVATION COMMISSION

W. O. Speegle
Name
Gas Inspector

I hereby swear or affirm that the information given above is true and correct.

Name C. W. Leisk

Position General Superintendent

Representing Austral Oil Expl. Co. Inc.
Company or Operator

Address 2810 Gulf Bldg., Houston, Texas

Date

19

AUG 27 1952

Bluitt San Andres Unit
Roosevelt County, New Mexico

Company Name: FRANKLIN, ASTON & FAIR

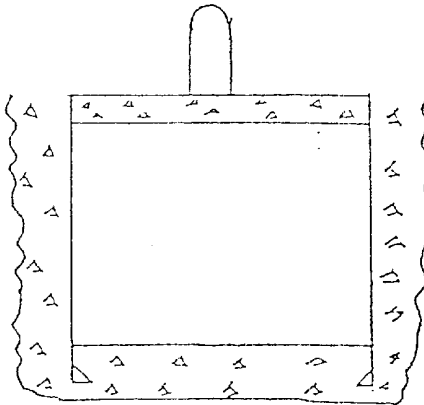
Lease Name: Roden Federal

Well No.: 1

Location: Unit F, Sec. 18, T8S, R38E, 1980' FNL & 1980' FWL

Drilling and Completion Data

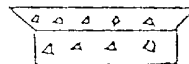
285' of 8-5/8" 20# in
12-1/4" hole. Cmt. w/200,
circ. to surface.



Plugging and Abandonment Data

Set 5 sack plug & marker at surface.

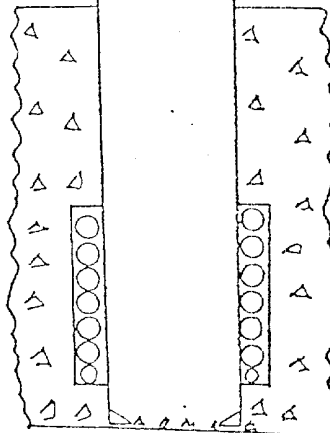
Spot 35 sacks cmt., plug through 5-1/2" csg. in & out of 8-5/8" surface csg.
Set @ 283'.



Shot & pulled csg. @ 1412'.

Spot 35 sacks cmt., plug through 5-1/2" csg.
@1412'.

TOC approx. 4400' by calc.



To 4770'

4770' of 5-1/2" 14# cmt.
w/275 sx.

25 sacks cmt., plug 4704'-4744'.

UNIT STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYSUBMIT IN TRIPLI
(Other instructions on
reverse side)Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

NM 044216-B

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Roden

9. WELL NO.

10. FIELD AND POOL, OR WILDCA.

Bluitt-San Andres

11. SEC., T., R., M., OR BLK. AND
SURVEY OR AREA

Sec. 18-8S-38E, NMPM

12. COUNTY OR PARISH; 13. STATE

Roosevelt New Mexico

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)1. OIL ☐ GAS ☐ OTHER ☒ Dry Hole

2. NAME OF OPERATOR

FRANKLIN, ASTON & FAIR, INC.

3. ADDRESS OF OPERATOR

P. O. Box 1090, Roswell, New Mexico 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.
See also space 17 below.)
At surface

1980' FNL & 1980' FWL, Sec. 18, T. 8 S., R. 38 E.

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

4002.9

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐FRACTURE TREAT ☐SHOOT OR ACIDIZE ☐REPAIR WELL ☐(Other) ☐PULL OR ALTER CASING ☐MULTIPLE COMPLETE ☐ABANDON* ☐CHANGE PLANS ☐

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐FRACTURE TREATMENT ☐SHOOTING OR ACIDIZING ☐(Other) ☐REPAIRING WELL ☐ALTERING CASING ☐ABANDONMENT* ☒(NOTE: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

On March 30, 1970, this well was plugged and abandoned as follows:

Circulated hole with mud and spotted 25 sack plug through tubing across perforations 4704' - 4744'. Pulled tubing, ran free point and shot 5 1/2" csg. at 1412'. Spotted 35 sack cement plug through 5 1/2" csg. at 1412'. Spotted 35 sack cement plug through 5 1/2" csg. in and out of 8 5/8" surface csg. set at 283'. Set 5 sack plug and marker at surface.

18. I hereby certify that the foregoing is true and correct

SIGNED

Grant M. Smith

TITLE Geologist

DATE 4-2-70

(This space for Federal or State office use)

APPROVED BY

TITLE

NOTED

APPROVED

DATE

CONDITIONS OF APPROVAL, IF ANY:

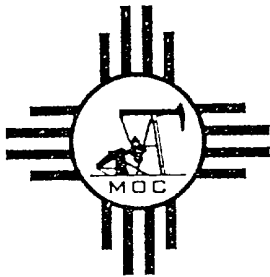
SEP 24 1970

SEP 24 1970

*See Instructions on Reverse Side

GORD

J. L. GORDON
ACTING DISTRICT ENGINEER



MURPHY OPERATING CORPORATION
UNITED BANK PLAZA, SUITE 300
400 NORTH PENNSYLVANIA AVENUE
POST OFFICE BOX 2648
ROSWELL, NEW MEXICO 88202-2648

TELEPHONE
505 623-7210

October 13, 1988

Ms. Debbie Burrows
Portales Tribune
Post Office Box 848
Portales, New Mexico 88130

RE: Submittal of Legal Notice on
Bluitt San Andres Unit


Dear Ms Burrows:

Please find enclosed a legal notice to be placed in the Portales Tribune for Murphy Operating Corporation. Please run the notice for a total of three (3) days. I understand that we will be billed an undetermined amount after you have received the notice.

Thank you for all of your help in this matter. If there are any questions concerning the placement of this legal notice, please feel free to contact me at 505/623-7210.

Sincerely,

MURPHY OPERATING CORPORATION


Jeanette Sons
Assistant to the President

Mark B. Murphy
President, and Chief Operating Officer

/js

Enclosure: Legal Notice

LEGAL NOTICE

This shall constitute notice to all the world that Murphy Operating Corporation (United Bank Plaza, Suite 300, Post Office Box 2648, Roswell, New Mexico 88202-2648, Attention Mark B. Murphy, telephone number (505) 623-7210) intends to convert the following wells from producing to injection service for the purpose of expanding the existing waterflood project, the Bluit San Andres Unit, located in Township 8 South, Range 37 East, NMPM, Roosevelt County, New Mexico.

<u>Well No.</u>	<u>Section</u>
18-5	18
18-13	18

Water will be injected into the P2 zone of the San Andres formation (between the logged depths of 4640' and 4676' in the Murphy Operating Corporation BSAU Well #13-15 as shown on the Nuclear Log of said well dated October 17, 1977) at rates of approximately 400 BWPD and at maximum as shown on the wellhead pressures not exceeding 850psi.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, Post Office Box 2088, Santa Fe, New Mexico 87501 within 15 days.

Published in Portales News-Tribune _____ Legal No. _____
late

Distribution List
Bluitt San Andres Unit
Injection Expansion
Form C-108

Mr. Dick Buffington
Post Office Box 201
Mauriceville, Texas 77626

Dear Mr. Buffington:

Mr. Jerry Skinner
Enron Oil and Gas Company
Post Office Box 2267
Midland, Texas 79702

Dear Mr. Skinner:

Mr. Wiley Barrow
Union Oil Company of California
Post Office Box 671
Midland, Texas 79702

Dear Mr. Barrow:

Mr. Andy Grooms
Post Office Box 2328
Roswell, New Mexico 88202-2328

Dear Mr. Grooms:

P 665 399 456
RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

PS Form 3800, June 1985

Sent to Mr. Jerry Skinner	
Street and No. Post Office Box 2267	
P.O. State and ZIP Code Midland, Texas 79702	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

P 665 399 470
RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

PS Form 3800, June 1985

Sent to Mr. Dick Buffington	
Street and No. Post Office Box 201	
P.O. State and ZIP Code Mauriceville, Texas 77626	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

P 665 399 458
RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

PS Form 3800, June 1985

Sent to Mr. Andy Groom	
Street and No. Post Office Box 2323	
P.O. State and ZIP Code Roswell, New Mexico 88201	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

P 665 399 457
RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

PS Form 3800, June 1985

Sent to Mr. Wiley Barrow	
Street and No. Post Office Box 671	
P.O. State and ZIP Code Midland, Texas 79702	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

P 665 399 481
RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

PS Form 3800, June 1985

Sent to David Catanach, Pet. Eng.	
Street and No. Post Office Box 2088	
P.O. State and ZIP Code Santa Fe, New Mexico 87501	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	