NIT to inject in new perfs

GREYSTONE ENERGY, INC.
9155 E. Nichols Ave., Suite 350 • Englewood, CO 80112
Bus: 303-925-0542 • Fax: 303-925-0543

December 14th, 1999

Mr. David Catanach
New Mexico Oil Conservation Division
Director of UIC
2040 South Pacheco Street
Santa Fe, New Mexico 87505

RE: Administrative Approval to add perforations to the Cliffhouse zone in the Mesaverde for water salt water disposal. Water is currently being disposed of in the Point Lookout zone of this well.
Greystone Energy, Inc.
Langendorf #3
1097' FSL, 1439' FEL, Sec.34, T31N, R13W, N.M.P.M.
San Juan County, New Mexico

Dear Mr. Catanach:

Greystone Energy, Inc. requests authorization to dispose of produced salt water in the Cliffhouse zone of the Mesaverde formation within the above referenced well.

This well was approved as a purposed drilled SWD well in 1985 for disposal of salt water into the Point Lookout zone of the Mesaverde formation. Greystone Energy is requesting to add perforations to the existing well bore in the Cliffhouse zone.

There are no fresh water wells within one mile of the proposed salt water disposal well. The nearest fresh water well is over 1.5 miles to the north-by-north west across the La Plata River. There is only government surface ownership within a one-mile radius the disposal well.

To comply with the New Mexcio Oil Conservation Rules, Greystone Energy, Inc. is submitting the Form C-108 for your approval of the proposed addition of perforations in the disposal well.

In accordance to New Mexico Oil Conservation Division Rules, all offset operators and surface owners are being notified of this application by certified mail. In addition public notice was given (Legal notice # 41968) was given in the local newspaper (The Daily Times). As an offset operator, if you have no objection to this application, you do not have to respond to this notification.

If additional information is needed, please contact me.

Sincerely,

Brian D. Voigt

Brian D. Voigt
Vice President

CC: NMOCD-Aztec, BLM – Farmington, Offset Operators

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 SOUTH PACHECO
SANTA FE, NEW MEXICO 87505

FORM C-108
Revised 4-1-98

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. OPERATOR: Greystone Energy, Inc.

ADDRESS: 5802 Highway 64 , Farmington, NM 87401

CONTACT PARTY: Chester L. Deal PHONE: (505) 632-8056

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. (Attachment #1)

IV. Is this an expansion of an existing project? ___X___ Yes _____ No
If yes, give the Division order number authorizing the project: Order SWD-283 (Attachment 1B)

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. (Attachment #2)

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. (Attachment #3)

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; (Attachment #4)
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 geologic data on the injection zone including appropriate lithologic detail, geologic 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. Previously submitted

IX. Describe the proposed stimulation program, if any. (Attachment #5)

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). (On File)

*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. Previously submitted

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 sources of drinking water. (Attachment #6)

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. (Attachment #7)

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

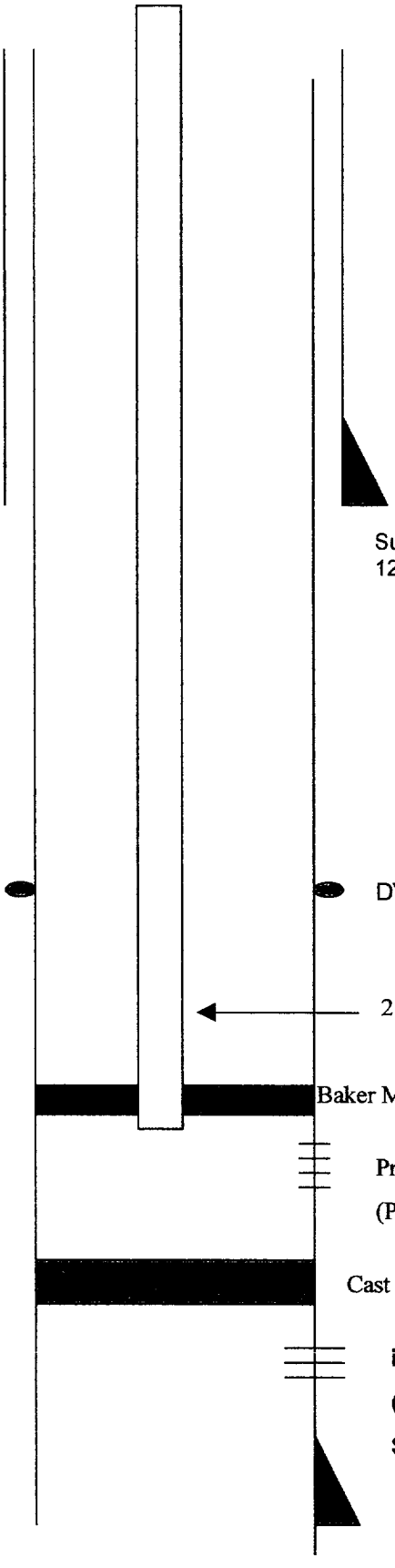
NAME: Brian D. Voigt TITLE: Vice President

SIGNATURE: Brian D. Voigt DATE: 12/14/99

* 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 circumstances of the earlier submittal: February 25th, 1985 in paper work associated with Order SWD-283

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Attachment # 1



Greystone Energy, Inc.

Well Name: Langendorf #3 SWD

Section 34, T-31N-R13W, 1097' FSL & 1439' FEL

San Juan County , New Mexico

Formation Tops:

Ojo Alamo - 200'	Cliff House - 3550'
Fruitland- 1320'	Menefee - 3710'
Pictured Cliffs - 1950'	Point Lookout - 4340'

(PC is the Next higher productive zone in the area)

(Dakota is the Next lower productive zone @ +/- 6500')

Surface Casing: 8 5/8" 24# @ 267' w/ 240 sx B + 2% CaCl2, Set in a 12 1/4" open hole. TOC - Surf

Production string cemented in two stages:

Stage 1: Lead 614 sx 50/50 Poz + 2% gel

Tail 100 sx Class H Neat

Stage 2: Lead 492 sx 65/35 Poz + 6% gel

Tail 100 sx 50/50 Poz + 2% gel

Cement circulated to surface

DV Tool Set @ 2107"

2 7/8" J-55 Plastic Coated Tubing @ +/- 3510'

Baker Model A-3 Lock set Packer set at +/- 3510'

Proposed Cliffhouse Perforations 3558' - 3706'

(Part of the Blanco Mesaverde)

Cast Iron Bridge plug set at +/- 4300'

Point Lookout Perforated Zone 4355' - 4612'

(Part of the Blanco Mesaverde)

Stimulation 3000 gal of 7 1/2% HCL

Production Casing: 5 1/2" 15.5 # @ 4690' Set in a 7 7/8 " open hole

Attachment 1B

50 YEARS

1935 - 1985

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

ORDER SWD-283

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

THE APPLICATION OF CONSOLIDATED OIL & GAS, INC.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Consolidated Oil & Gas, Inc. made application to the New Mexico Oil Conservation Division on February 28, 1985, for permission to complete for salt water disposal its Langendorf Well No. 3 located in Unit O of Section 34, Township 31 North, Range 13 West, NMPM, San Juan County, New Mexico.

The Division Director finds:

(1) That application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;

(2) That satisfactory information has been provided that all offset operators and surface owners have been duly notified; and

(3) That the applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met.

(4) That no objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED:

That the applicant herein, Consolidated Oil & Gas, Inc. is hereby authorized to complete its Langendorf Well No. 3, located in Unit O of Section 34, Township 31 North, Range 13 West, NMPM, San Juan County, New Mexico, in such a manner as to permit the injection of salt water for disposal purposes into the Point Lookout zone of the Mesaverde formation at approximately 4340 feet to approximately 4550 feet through 2 7/8 inch plastic lined tubing set in a packer located at approximately 4300 feet.

Attachment 1B

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

That the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

That the injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 868 psi.

That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Mesaverde formation. That such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

That the operator shall notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

That the operator shall immediately notify the supervisor of the Division's Aztec district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER, That jurisdiction of this cause is hereby retained by the Division for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of applicant to comply with any requirement of this order after notice and hearing, the Division may terminate the authority hereby granted in the interest of conservation. That applicant shall submit monthly reports of the disposal operations in accordance with Rule 706 and 1120 of the Division Rules and Regulations.

Attachment 1B

Approved at Santa Fe, New Mexico, on this 19th day of March, 1985.

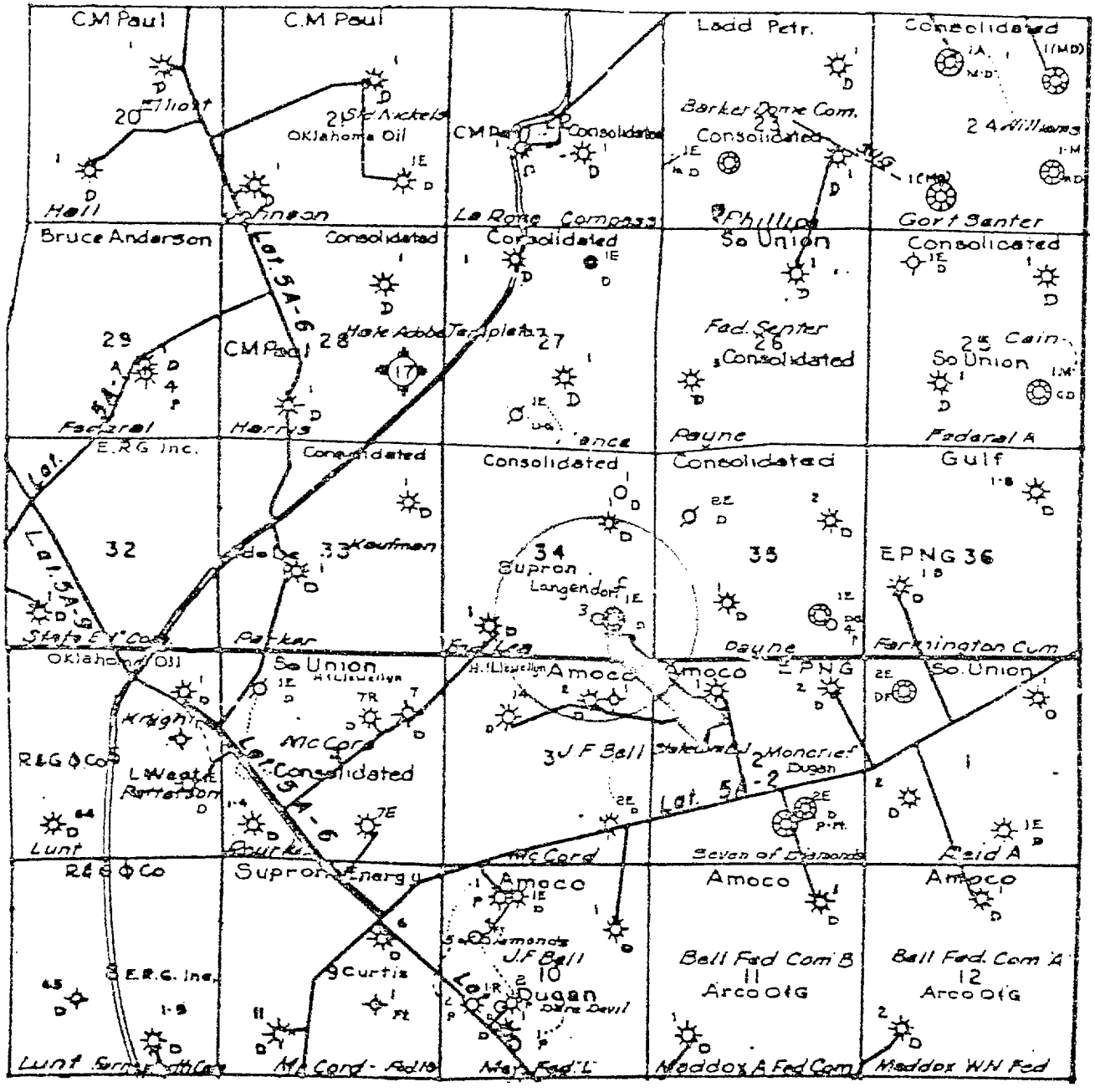
STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

R. L. STAMETS,
Director

S E A L

ATTACHMENT 2

Water Disposal Well

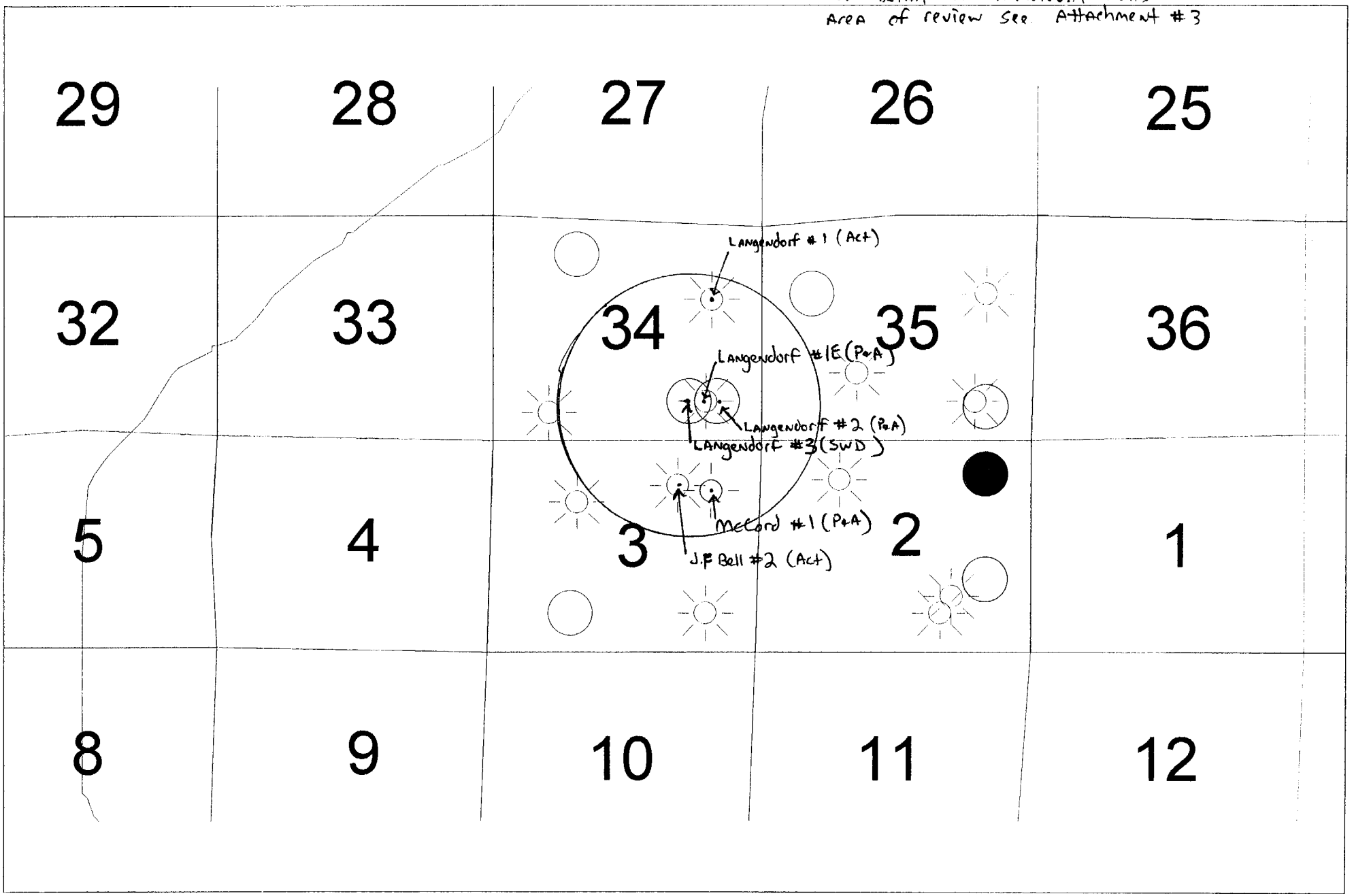


LANGENDORF 3
1097'FSL & 1439'FEL
Sec 34, T31N, R13W
San Juan Co., NM
1" = 4000'

PI/Dwights PLUS on CD Map Report

Date: 12/12/1999
Time: 2:48 PM

For Detail on individual wells in Area of review See Attachment #3



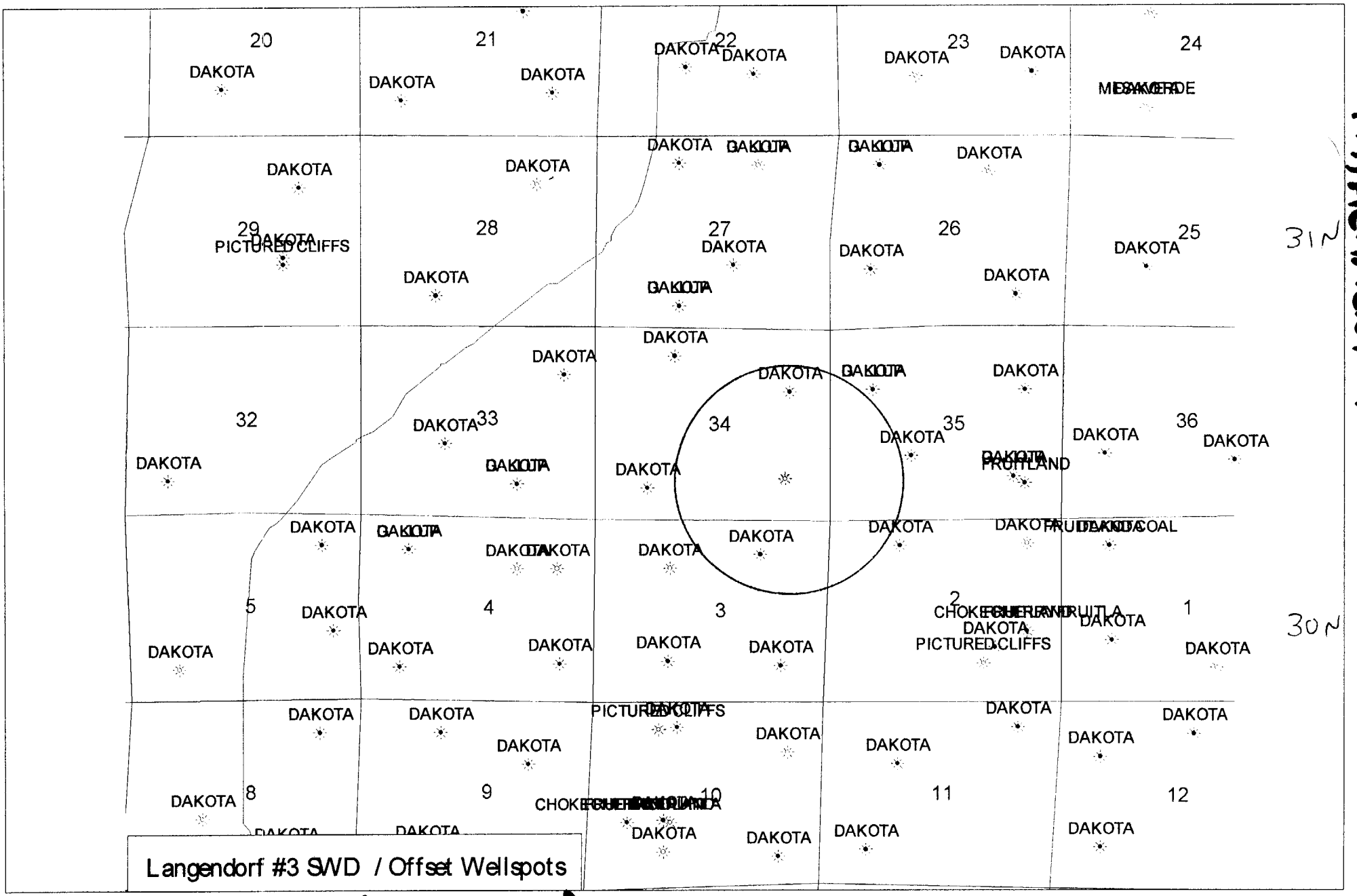
Attachment #2

PowerTools Map

Project: C:\Program Files\IHS Energy\PTools30\PROJECTS\SWD_well.MDB

Date: 10/27/1999
Time: 11:50 AM

13 W



31 N

30 N

(Producing)

Attachment #2

Attachment #2

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Supersedes C-
Effective 14-6

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
CONSOLIDATED OIL & GAS, INC.	LANGENDORF	3

Unit Letter	Section	Township	Range	County
O	34	31 NORTH	13 WEST	SAN JUAN

Actual Footage Location of Well: 1097 feet from the SOUTH line and 1439 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
5860			Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

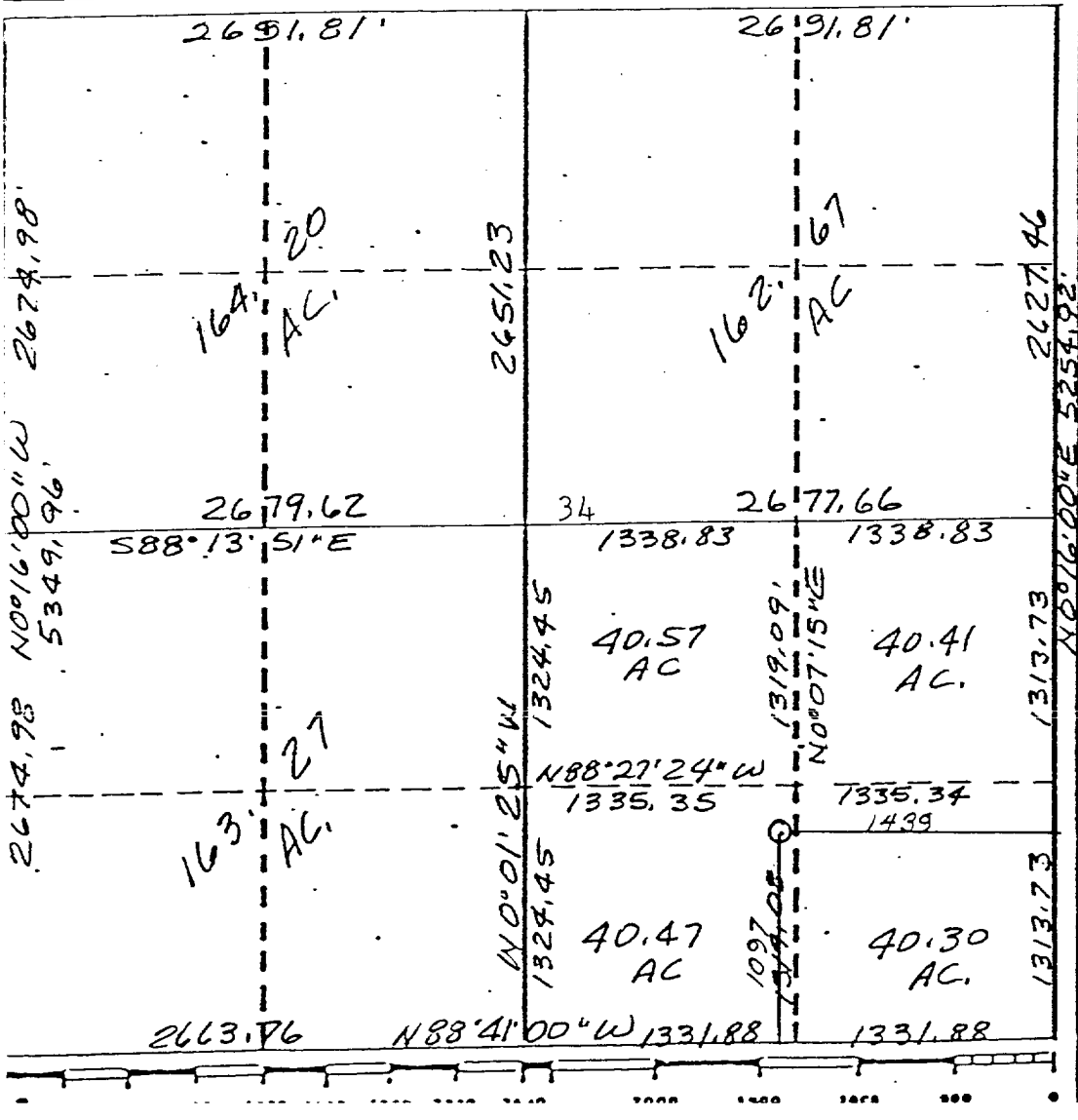
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name

Position

Company

Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

GEORGE R. TOMPKINS
NEW MEXICO
7259
REGISTERED LAND SURVEYOR

Date Surveyed
February 22, 1985

Registered Professional Engineer and/or Land Surveyor
George R. Tompkins

Certificate No.
7259

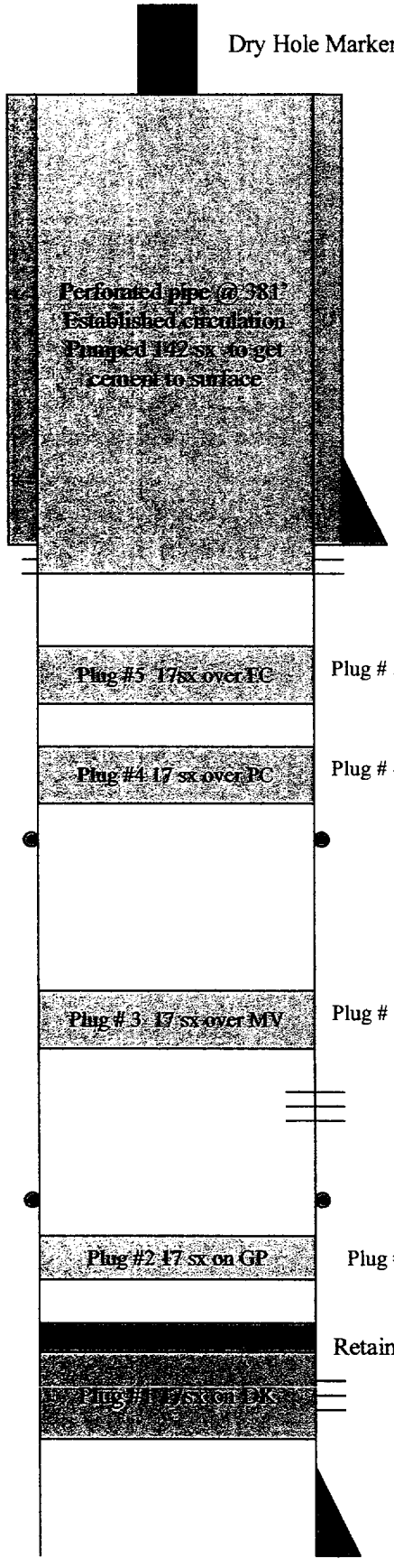
Attachment #3

Langendorf #3
Sec 34, T31N, R13W

Well Histories - Area of Review
Wells within the prescribed one-half mile radius of the Langendorf 3 are as follows:

Operator	Cross Timbers	Greystone Energy	Chateau O & G	Chateau O & G	The New Drilling Co.
Well Name	J.F. Bell #2	Langendorf #1	Langendorf #1E	Langendorf #2	McCord #1
Location	1050' FNL & 1620' FEL	1750' FNL & 990' FEL	1100' FSL & 1100' FEL	1110' FSL & 675' FEL	1190' FNL & 985' FEL
S-T-R	3, T30N, R13W	34, T31N, R13W	34, T31N, R13W	34, T31N, R13W	3, T30N, R13W
Elevation	5800'	5730'	5886'	5879'	5856'
Status	Active	Active	P & A	P & A	P & A
Spud	9/7/66	10/18/60	6/1/80	3/22/84	8/28/56
TD	6681'	6557'	6835'	2155'	4570'
Mesaverde Penetration?	YES	YES	YES	**NO**	YES
Zone(s)	Dakota	Dakota	Dakota & Mesaverde	Fruitland Snd	Mesaverde
Perfs	6510' - 612'	6349' - 6467'	6521' - 6776' 4376' - 4654'	1756' - 1767'	4302' - 4492'
Surface Casing	8 5/8" @ 354'	9 5/8" @ 195'	8 5/8" @ 267'	8 5/8" @ 166'	10 3/4" @ 177'
Surface Cement	225 sx none	130 sx circulated	200 sx none	190 cu. Ft. circulated	175 sx none
Intermediate Casing	None	None	None	None	7" @ 4274'
Intermediate Cement	DV Tools 4664' & 2055'	N/A	DV Tools 4773' & 2268'	N/A	150 sx none
Production Casing	4 1/2" @ 6681'	5 1/2" @ 6554'	5 1/2" @ 6835'	4 1/2" @ 2155'	5 1/2" @ 4570'
Production Cement	1st stg. - 525sx Circulated 2nd stg. - 525sx Circulated 3rd stg. - 475sx Circulated	1st stg. - 275sx None **Squeeze Cmting** Jun-85 Perfed MV and squeezed with 250sx	1st stg. - 475sx Circulated 2nd stg. - 430sx Circulated 3rd stg. - 700sx Circulated P&A'd See Well Bore Diagram	1st stg. - 375sx Circulated P& A'd Detail Diagram not attached since it did not penetrate disposal zone	1st stg. - 50sx None Csg Cut & well P&A'd See Well Bore Diagram

Attachment #3



Plug & Abandonment Schematic

Well Name: Langendorf #1E

Section 34, T-31N-R13W, 1100' FSL & 1100' FEL

San Juan County , New Mexico

Formation Tops:

Ojo Alamo - 294'	Pictured Cliffs - 1958'
Kirtland - 331'	Mesa verde - 3560'
Fruitland- 1552'	Gallup - 5649'
	Dakota - 5513'

Surface Casing: 8 5/8", 24#, @ 267' w/940 sxs, TOC - Surf

Plug # 5 1500' - 1650'

Plug # 4 1871' - 2021'

DV Tool Set @ 2268' Top of Cement @500"

Plug # 3 3464' - 3614'

Mesaverde Completion Interval: 4376' - 4654'

June -85 squeezed MV with 300sx (est. TOC @ 3021')

DV Tool Set @ 4733" Top of Cement @2427'

Plug # 2 5551'-5701'

Dakota Completion Interval: 6521' - 6790'

Production Casing: 5 1/2" 15.5# @ 6835' w/ 475 sx (TOC @ DV tool 4733')

Attachment #3

The New Drilling Company
Plug and Abandonment Schematic
for Mesaverde Completion

Elevation: 5856'KB
5848'GL

McCORD 1
1190'FNL & 985'FEL
Sec 3, T30N, R13W
San Juan Co., NM
Lease # SF-077924

10-3/4",32#,casing @ 177'
Cmt w/ 125 sx. Cmt
top est. at surface.

15" hole to 195'

FORMATION TOPS (est.)

Ojo Alamo	- 323'
Fruitland	- 1310'
PC	- 1893'
Cliff House	- 3525'
Menefee	- 3685'
Point Lookout	- 4315'
Mancos	- 4585'
T D	- 4623'

7" csg cut at 3210'

7",20#,J-55 casing
set at 4274'. Cmt w/
150 sx cmt. Cmt top
est. at 3250'.

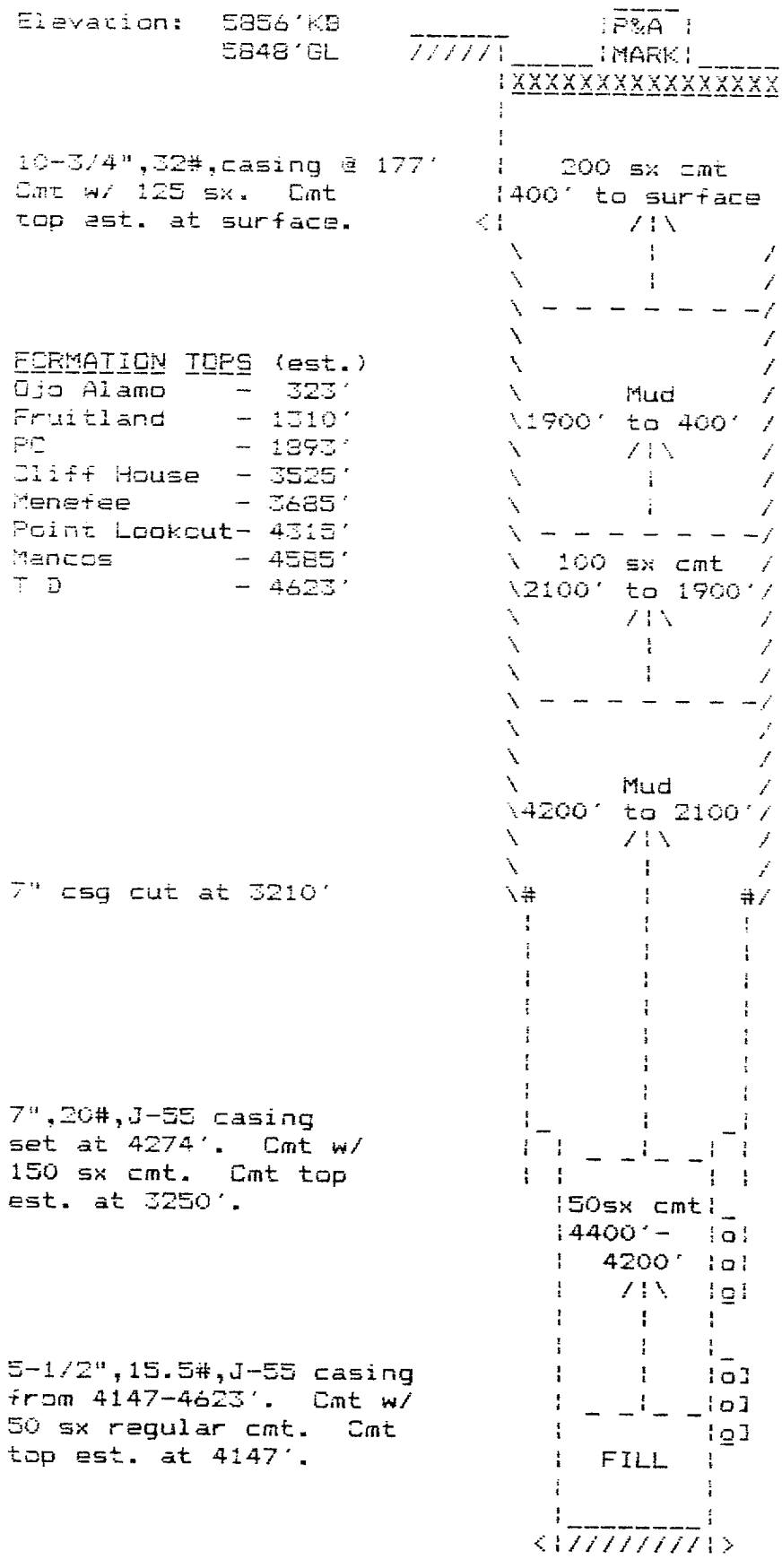
5-1/2" csg top at
4147'

9-7/8" hole to 4274'

5-1/2",15.5#,J-55 casing
from 4147-4623'. Cmt w/
50 sx regular cmt. Cmt
top est. at 4147'.

Point Lookout perf
intervals:4492-4370'
& 4350-4302'

6-1/4" hole to 4623'



*NOTE - All values were estimated from incomplete or

Attachment #4

Langendorf # 3
Sec 34, T31N, R13W

Proposed Disposal Operation

1. The Proposed injection well will be used to dispose of produced water from Greystone Energy Operated wells. Water will be trucked from these wells to the injection well. Greystone Energy is drilling several coal wells in the year 2000. These well additions coupled with Greystone Energy's current operations require improved injectivity. The resulting improved injectivity from disposing of water in the Cliffhouse zone will also allow Greystone to hasten its closure of an open holding pit at the Langendorf #3 Disposal well.

   Maximum Daily Disposal Rate : 350 BWPD
   Average Daily Disposal Rate: 300 BWPD

2. The plan is for this to be a closed system. As mentioned above until October of 1999 Greystone Energy was utilizing a lined storage pit in addition to tanks. In an effort to close the system and eventually close the lined pit Greystone Energy added 600 BBls of additional fiberglass storage tanks. This coupled with improved injectivity into the Cliffhouse Zone will enable Greystone Energy to stop utilizing the lined storage pit and hasten its closure.

3. Formation fracture gradient for the Cliffhouse in the area is estimated to be 0.59 psi/ft based on a review of completion attempts in the township. A review of bottom hole pressure data from 7 day SI tests run in the township indicate an average formation pressure gradient of 0.41 psi/ft. This indicates we should be able to pump into this zone with very little pressure since the head of water will overcome formation pressure and friction will be negligible due to the low daily rates of disposal.

   Maximum surface pressure will be held to 500 psi unless the step rate tests determine a different injection surface pressure max.

4. Water Analysis mg / l

Well Name	Zone	Na	Ca	Mg	Fe	Cl	Bicarb	SO4	CO3	OH	TDS	Rw	Location
Cain 2	FR	7,310	88	51	7	10,900	1,147	37	0	0	19,552	0.345	SE/NE 25-31N-13W
Clayton 1E	GP	323	0	5	44	500	25	4	0	0	856		SE/SE 2-30N-12W
Clayton 2A	MV	1,600	32	5	47	2,400	219	-	0	0	4,261	1.530	SE/SE 2-30N-12W
Jackson 2E	DK	904	40	8	84	1,300	146	77	0	0	2,476	1.940	SW/SE 18-31N-13W
Kline 1M	MV	8,137	133	89	6	12,000	305	1,200	0	0	21,866	0.272	NE/SE 10-31N-13W
Oshea 1M	MV	5,330	84	46	12	8,300	353	4	0	0	14,129	0.402	SE/NW 3-31N-13W
Tafoya 1A	MV	1,123	56	14	25	1,300	122	667	0	0	3,283	1.900	SE/NW 35-32N-13W
Wilmerding 1E	DK	12,294	2004	607	61	23,000	183	1,575	0	0	39,664	0.160	NE/NW 10-31N-13W

5. The Cliffhouse zone is not capable of commercial production of oil or gas within the prescribed on mile radius. Water analysis are not available in the immediate vicinity. Water sample analysis of a Mesaverde test in NE/SE 10-31N-13W came from the Kline 1M as recorded above. Water samples mixed from wells in the La Plata area show a tendency to form CaC03 scale. This scaling tendency can be chemically treated prior to injection.

Attachment #5

Langendorf # 3
Sec 34, T31N, R13W

Proposed Stimulation Program

1. An acid breakdown will be the only stimulation done on this well initially. This will be done to insure adequate communication between the wellbore and injection zone. Rate and pressure will be maintained so that the frac gradient (0.59 psi/ft estimated) is not exceeded. Additional matrix acidizing may be required in the future but will not be considered until the injectivity tests are analyzed.

Attachment #6

Langendorf # 3
Sec 34, T31N, R13W

Affirmative statement

1. I hereby certify that I have examined available geologic and engineering data and can fine no evidence of connection between the disposal zone and underground drinking water sources.

December 13th, 1999

Brian D. Voigt, P.E.
Vice President
Greystone Energy, Inc.

Attachment # 7

AFFIDAVIT OF PUBLICATION

Ad No. 41968

STATE OF NEW MEXICO
County of San Juan:

ALETHIA ROTHLISBERGER, being duly sworn says: That she 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):

Friday, November 5, 1999

and the cost of publication is:$22.72

Alethia Rothlisberger

On 11/10/99 ALETHIA ROTHLISBERGER appeared before me, whom I know personally to be the person who signed the above document.

Christine L Duran

My Commission Expires May 3, 2003.

COPY OF PUBLICATION

918 Legals

Intent to Dispose of Water in the Subsurface

Greystone Energy, Inc. proposes to add perforations to the Cliffhouse formation in their Langendorf #3 Disposal well. Located 925' FSL, & 1355' FEL of Section 34, T31N, R13W, NMPM, San Juan County, New Mexico. Water is currently being disposed into the Point Lookout Formation. The new depth of injection will be from 3555' - 3700'. (Current depth of injection is 4355' to 4612') Maximum anticipated rate is 300 BWPD at a maximum surface injection pressure of 700 psi.

Questions should be addressed to Greystone Energy, Inc., Attention: Chester Deal, 5802 Hwy 64, Farmington, NM 87401, or call (505) 632-8056. Objections to this proposal or request for hearing by interested parties must be filed with the New Mexico Oil Conservation Division, 2040 S. Pacheco St., Santa Fe, New Mexico 87505 within 15 days.

Legal No. 41968, published in The Daily Times, Farmington, New Mexico, Friday, November 5, 1999.

Attachment #7B

Certified Mailing List

	Certified Mail Article Number
Cross Timbers Operating Co. 6001 Hwy 64 Farmington, NM 87401	Z 441 648 501
New Mexico Oil Conservation Division Attn: David Catanach Director of UIC 2040 South Pacheco St. Santa Fe, NM 87505	Z 441 648 502
New Mexico Oil Conservation Division 1000 Rio Brazos Aztec, NM 87410	Z 441 648 503
Bureau of Land Management 1235 LaPlata Hwy, Suite A Farmington, NM 87401	Z 441 648 504