

225427012

DHC

NA



Samson Plaza
Two West Second Street
Tulsa, Oklahoma 74103-3103
USA
918/583-1791
Fax 918/591-1796

September 9, 2002



State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re : Smith Ranch Federal #2-11
Section 11-T20S-R33E
Lea County

Samson Resources Company is herein requesting authority to downhole commingle the Teas (Bone Spring) and Teas (Delaware) Pools within the referenced well. Form C-107A and various data and information are enclosed which support this application.

Yours very truly,

A handwritten signature in black ink, appearing to read 'Raymond L. Taylor'.

Raymond L. Taylor
Reservoir Engineer

rt : enclosure

District I
1625 N. French Drive, Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107A
Revised May 15, 2000

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

APPLICATION TYPE
X Single Well
____ Establish Pre-Approved Pools
EXISTING WELLBORE
X Yes ____ No

APPLICATION FOR DOWNHOLE COMMINGLING

Samson Resources Company Two West Second St., Tulsa, Oklahoma 74103
Operator Address
Smith Ranch Federal 2 C 11-T20S-R33E Lea
Lease Well No. Unit Letter-Section-Township-Range County
OGRID No. 020165 Property Code 17238 API No. 30 025 31138 Lease Type: X Federal ____ State ____ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	Teas (Delaware)	N/A	Teas (Bone Spring)
Pool Code	96797		58950
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	6582 - 6590		9386 - 9442
Method of Production (Flowing or Artificial Lift)	Artificial Lift		Artificial Lift
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)	Not Required		Not Required
Oil Gravity or Gas BTU (Degree API or Gas BTU)	36.1 / 1406 Btu		40.6 / 1116 Btu
Producing, Shut-In or New Zone	Producing		Shut-in
Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.)	Date: 08-02 Rates: 6 BOPD 2 MCFD 29 BWPD	Date: Rates:	Date: 06-00 Rates: 10 BOPD 159 MCFD 3 BWPD
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil Gas 38 % 1 %	Oil Gas % %	Oil Gas 62 % 99 %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones?
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail?

Yes X No ____
Yes ____ No ____

Are all produced fluids from all commingled zones compatible with each other?

Yes X No ____

Will commingling decrease the value of production?

Yes ____ No X

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands
or the United States Bureau of Land Management been notified in writing of this application?

X
Yes ____ No ____

NMOCD Reference Case No. applicable to this well: _____

Attachments:

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

- List of other orders approving downhole commingling within the proposed Pre-Approved Pools
- List of all operators within the proposed Pre-Approved Pools
- Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
- Bottomhole pressure data.

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

SIGNATURE Raymond L. Taylor TITLE Reservoir Engineer DATE 09-09-02
TYPE OR PRINT NAME Raymond L. Taylor TELEPHONE NO. (918) 591-1935

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

FORM APPROVED
OMB NO. 1004-0137
Expires: November 30, 2000

5. Lease Serial No. NM-17238

1a. Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry Other
b. Type of Completion: ☐ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other Recompletion to the Delaware

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.
Smith Ranch Unit8. Lease Name and Well No.
Smith Ranch Federal 2-119. API Well No.
30-025-3113810. Field and Pool, or Exploratory
Teas Delaware11. Sec., T., R., M., on Block and
Survey or Area 11-20S-33E12. County or Parish
Lea 13. State
NM

2. Name of Operator

Samson Resources Company

3. Address

Two West Second Street Tulsa, OK 74103

3a. Phone No. (include area code)
(918) 583-1791

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface

660' FNL & 1980' FWL

At top prod. interval reported below

At total depth

14. Date Spudded

1-26-91

15. Date T.D. Reached

2-24-91

16. Date Completed

☐ D&A ☒ Ready to Prod.

17. Elevations (DF, RKB, RT, GL)*

GR @ 3582.5'

18. Total Depth: MD

TVD 9746'

19. Plug Back T.D.: MD

TVD 9724'

20. Depth Bridge Plug Set:

MD
TVD NA

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

DL w/MG & Cal., SDL, FWS & CBL/GR/CCL

22. Was well cored? ☐ No ☐ Yes (Submit analysis)Was DST run? ☐ No ☐ Yes (Submit report)Directional Survey? ☐ No ☐ Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17 1/2"	13 3/8"	54.5#	Surface	438'		500		Surface	
12 1/4"	8 5/8"	32#	Surface	1065'		600		Surface	
12 1/4"	8 5/8"	28#	Surface	5279'		200		Surface	
7 7/8"	5 1/2"	20#	Surface			1200		3506'	
7 7/8"	5 1/2"	17#		9744'		150		CBL	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.875"	6536'							

25. Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A)			9386' - 9442'		2 SPF	Not Active
B)			6582' - 6590'		4 SPF	Active
C)						
D)						

26. Perforation Record

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
6582' - 6590'	Frac'd w/10,000 gals Ambor 1030 pad and 32,000 gals Ambor 1030 gel + 48,000# 16/30 mesh Ottawa sand.

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
8/2	8/15/0	24	→	60.2	25	113			Pumping
Choke Size	Tbg. Press. Flwg. SI	Csg. Press. SI	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	
N/A	100	100	→	60.2	25	113	415.3	Producing	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press. SI	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	
			→						

(See instructions and spaces for additional data on reverse side)

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke size	Tbg Press. Flwg. SI	Csg Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg Press. Flwg. SI	Csg Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
				Delaware	5357'
				Upper Bone Springs	8287'
				Middle Bone Springs	9298'

32. Additional remarks (include plugging procedure):

33. Circle enclosed attachments:

1. Electrical/Mechanical Logs (1 full set req'd.) 2. Geologic Report 3. DST Report 4. Directional Survey
5. Sundry Notice for plugging and cement verification 6. Core Analysis 7. Other:

34.I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Kevin Olson Title District Engineer
Signature Kevin C. Olson Date August 21, 2002

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

District I
1625 N. French Dr., Hobbs, NM 88240

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1301 W. Grand Avenue, Artesia, NM 88210

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District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico

Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised August 15, 2000

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-31138		² Pool Code 96797		³ Pool Name Teas Delaware	
⁴ Property Code 009922		⁵ Property Name Smith Ranch Federal			⁶ Well Number 2
⁷ OGRID No. 020165		⁸ Operator Name Samson Resources Company			⁹ Elevation GR @ 3582.5'

¹⁰ Surface Location

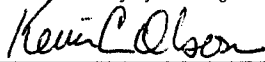
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	11	20S	33E		660'	North Line	1980'	West Line	Lea

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 40	¹³ Joint or Infill N	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁶					¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature Kevin Olson Printed Name District Engineer Title August 21, 2002 Date
					¹⁸ SURVEYOR CERTIFICATION 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 belief. Date of Survey Signature and Seal of Professional Surveyor: Certificate Number

Submit to Appropriate
 District Office
 State Lease - 4 copies
 Fee Lease - 3 copies

Form C-102
 Revised 1-1-89

Geology, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240

P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
 1000 Rio Grande Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

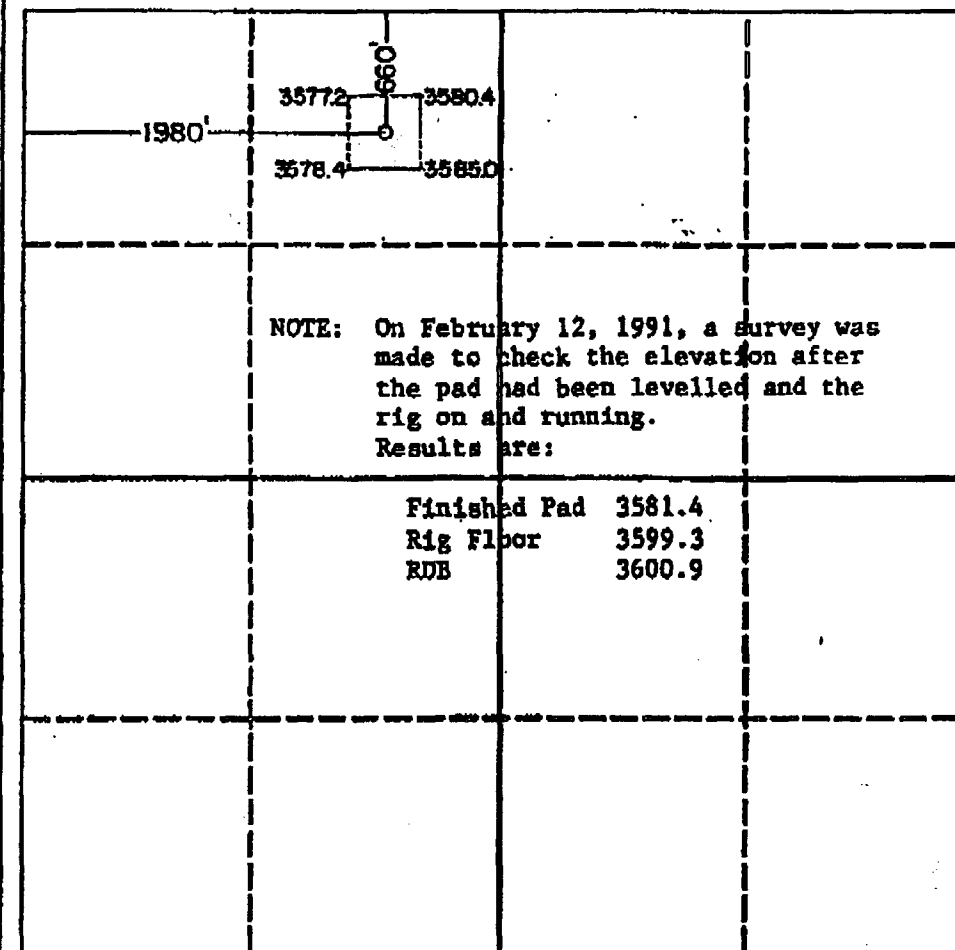
All Distances must be from the outer boundaries of the section

Operator GRACE PETROLEUM CORP.			Lease Smith Ranch 11		Well No. 2
Unit Letter C	Section 11	Township 20 South	Range 33 East	County Lea	

Actual Footage Location of Well:

660 feet from the North line and		1980 feet from the West line	
Ground level Elev. 3582.5	Producing Formation Bone Springs	Pool Teas	Dedicated Acreage: 40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or ink 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 interest 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 interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

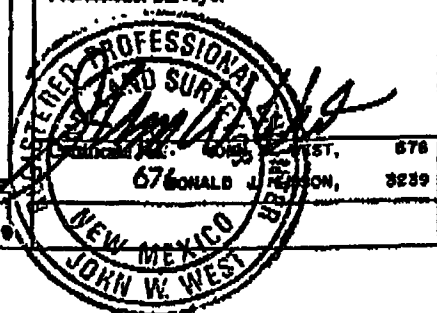
Signature
 William F. Baswell
 Printed Name
 William F. Baswell
 Position
 Operations Engineer
 Company
 Grace Petroleum Corp.
 Date
 3/26/91

SURVEYOR CERTIFICATION

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.

Date Surveyed
 October 17, 1990

Signature & Seal of
 Professional Surveyor



Form 3160-4
(July 1989)
(Formerly 9-330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OPERATOR'S COPY
OFFICE FOR NUMBER
OF COPIES REQUIRED

(See other instructions on reverse side)

BLM Roswell District
Modified Form No.
NM-3160-3160 RECEIVED

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other ☐		2. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ REPAIR ☐ PLUG BACK ☐ DIFF. REMOVAL ☐ Other ☐		3. NAME OF OPERATOR Grace Petroleum Corporation		3a. Area Code & Phone No. (405) 840-6600	
4. ADDRESS OF OPERATOR 6501 N. Broadway, Oklahoma City, OK 73116				5. LEASE DESIGNATION AND SERIAL NO. APR 15 1991 NM-1723015		6. IF INDIAN, ALLOTTEE OF TRIBE NAME LAND DEPT.	
7. LOCATION OF WELL (Report location clearly and in accordance with any State requirements) At surface 660' ENL & 1980' ENL Phillips-66 Natural Gas Co. At top prod. interval reported below At total depth API 30-025-31138				7. UNIT AGREEMENT NAME G.C.C.		8. FARM OR LEASE NAME Smith Ranch Federal	
9a. API Well No. 30-025-31138				14. PERMIT NO. 1-15-91		12. COUNTY OR PARISH Lea	
13. DATE SPUDDED 1-26-91				16. DATE T.D. REACHED 2-24-91		17. DATE COMPL. (Ready to prod.) 3-12-91	
18. DATE T.D. REACHED 2-24-91				19. ELEVATION (DP, RAB, AT, OR, ETC.) DP 3599.3', KB 3600.9'		20. ELEV. CASINGHEAD GL 3581.4'	
21. TOTAL DEPTH. MD & TVD 9746'		22. PLUG BACK T.D. MD & TVD 9724' PBTD		23. IF MULTIPLE COMPLEMENTS, HOW MANY? XXXX		24. INTERVAL DRILLING BY XXXX	
25. PRODUCING INTERVAL(S) OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD) Bone Springs 9386 to 9442'				26. YEAR DIRECTIONAL SURVEY MADE Yes, Attached		27. WAS WELL CORED Yes	
28. TYPE ELECTRIC AND OTHER LOGS RUN DL W/MG & Cal., SDL, FWS & CBL/GR/CCL				29. CASING RECORD (Report all strings set in well) Casing Size Weight, LB/FT. Depth Set (MD) Hole Size 13-3/8" 48 lb/ft 438' 17-1/2" 8-5/8" 28&32 lb/ft 5279' 12-1/4" 5-1/2" 17&20 lb/ft 9746' 7-7/8"		30. TUBING RECORD Size Depth Set (MD) Packer Set (MD) 2-7/8" 9349' 9191'	
31. PREPARATION RECORD (Interval, size and number) Bone Springs 9386'-9442' .38" 2 SPF				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. Depth Interval (MD) Amount and Kind of Material Used None			
33. PRODUCTION Date First Production 3-12-91 Production Method Flowing Well Status (Producing or Cased-in) SI, WO Pipeline				34. DATE OF TEST 3-13-91 Hours Tested 24 Choke Size 14/64" Prod'n. for Test Period 340 CAR-MCF 700 WATER-BBL 0 GAS-OIL RATIO 2059			
35. FLOW, TUBING PRESS. CASING PRESSURE CALCULATED 24-HOUR RATE 340 CAR-MCF 700 WATER-BBL 0 OIL GRAVITY-API (COIL) 40.6° @ 60°F				36. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) Sold			
37. LIST OF ATTACHMENTS Deviation Surveys, Acreage Plat				38. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records			
SIGNED William P. Baswell				TITLE Operations Engineer		DATE 3/26/91	

(See Instructions and Spaces for Additional Data on Reverse Side)

Title 16 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or communications.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, flowing and shut-in pressures, and recoveries):

38.	GEOLOGIC MARKERS			
	FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
	NAME	TOP		
		MEAS. DEPTH	TRUE VERT. DEPTH	
	Delaware	5357'		
	Upper Bone Springs	8287'		
	Middle Bone Springs	9298'		

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

Oil, Minerals and Natural Resources Department

Form O-100
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT I
P.O. Box 1940, Hobbs, NM 88240

DISTRICT II
P.O. Denver DC, Artesia, NM 88210

DISTRICT III
1000 Rio Grande Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator GRACE PETROLEUM CORP.			Lease Smith Ranch 11		Well No. 2
Unit Letter C	Section 11	Township 20 South	Range 33 East	County Lea	

Actual Footage Location of Well:					
660 feet from the North line and		1980 feet from the West line			
Ground level Elev. 3582.5	Producing Formation Bone Springs	Pool Teas	Dedicated Acreage: 40 Acres		

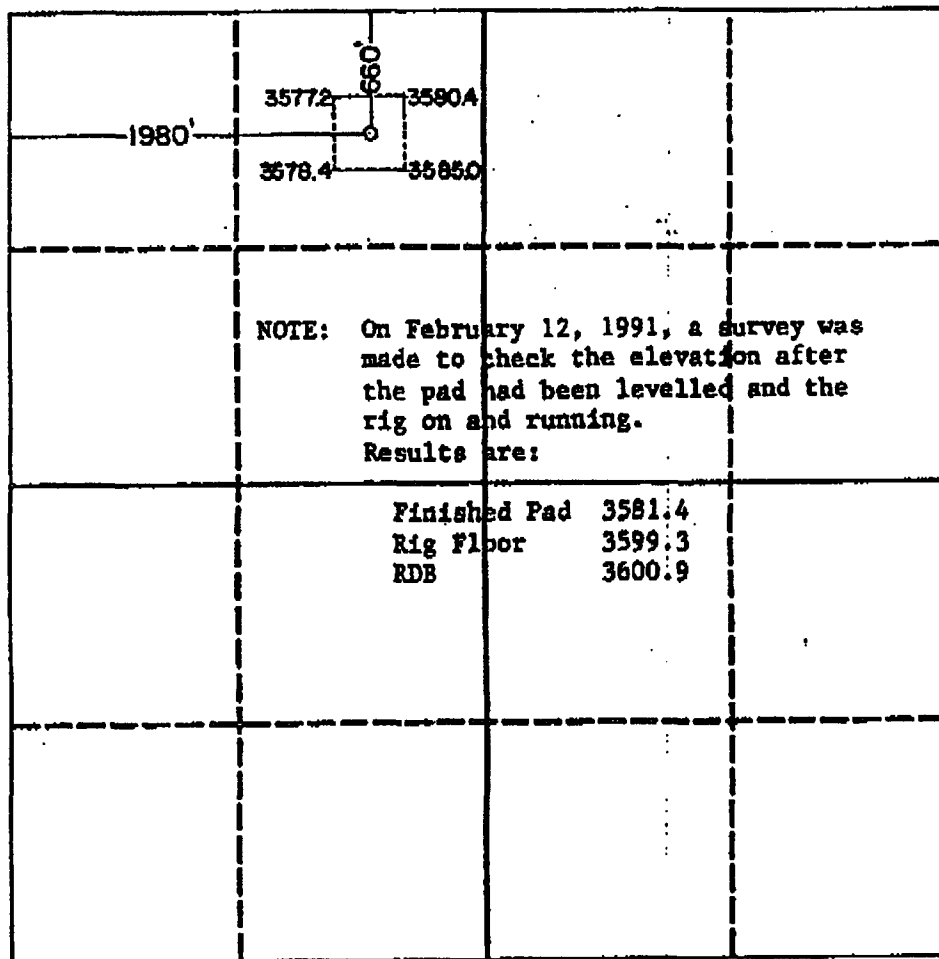
- Outline the acreage dedicated to the subject well by colored pencil or machine marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interest 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 interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

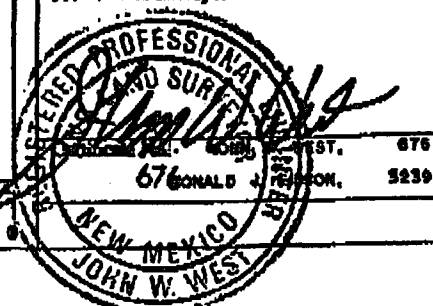
Signature
William P. Baswell
Printed Name
William P. Baswell
Position
Operations Engineer
Company
Grace Petroleum Corp.
Date
3/26/91

SURVEYOR CERTIFICATION

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.

Date Surveyed
October 17, 1990

Signature & Seal of Professional Surveyor



SAMSON RESOURCES COMPANY

Smith Ranch Federal #2-11
Section 11-T20S-R33E
Lea County, New Mexico

APPLICATION FOR DOWNHOLE COMMINGLING

ATTACHMENTS :

- **PRODUCTION CURVES**

Production curves for both the Bone Spring and Delaware zones are attached. The Bone Spring zone has not been produced since July 2000 and has been isolated beneath a RBP set at 6,760 feet. The Bone Spring has recovered at total of 189.7 MBO and 1,079.6 MMCF. The Delaware was perforated in July 2000 and has produced at total of 16.3 MBO and 12.1 MMCF. This zone is currently producing in the Smith Ranch Federal #2-11.

- **ALLOCATION OF PRODUCTION METHODOLOGY**

Allocation of production is based upon the most recent average monthly production reported for both the Bone Spring and Delaware zones. The Bone Spring averaged 10 BOPD, 159 MCFD and 3 BWPD during June 2000 while the Delaware averaged 6 BOPD, 2 MCFD and 29 BWPD during August 2002. The recommended allocation is based upon totaling these averaged daily rates and determining the percentage of each of that resulting total.

- **BOTTOMHOLE PRESSURE DATA**

Bottomhole pressure data is not required. The top perforation within the Delaware zone is located at 6,582 feet. 150% of this depth would occur at 9,873 feet. The lower most perforation within the Bone Spring zone occurs at 9,442 feet.

- **COMPATIBILITY OF RESERVOIR FLUIDS**

BTA Oil Producers sought and received authority to downhole commingle the Delaware and Bone Spring zones within its Gem 8705 JV-P #4 well in May 2000. This well is located 510 feet from the south line and 1980 feet from the west line of Section 2-T20S-R33E and is a direct offset to the Smith Ranch Federal #2-11. Attached is a comparison of samples taken from two BTA operated wells which demonstrates the compatibility of waters produced from the Bone Spring and Delaware zones. Also attached are gas compositional samples from the Bone Spring and Delaware zones gathered from the

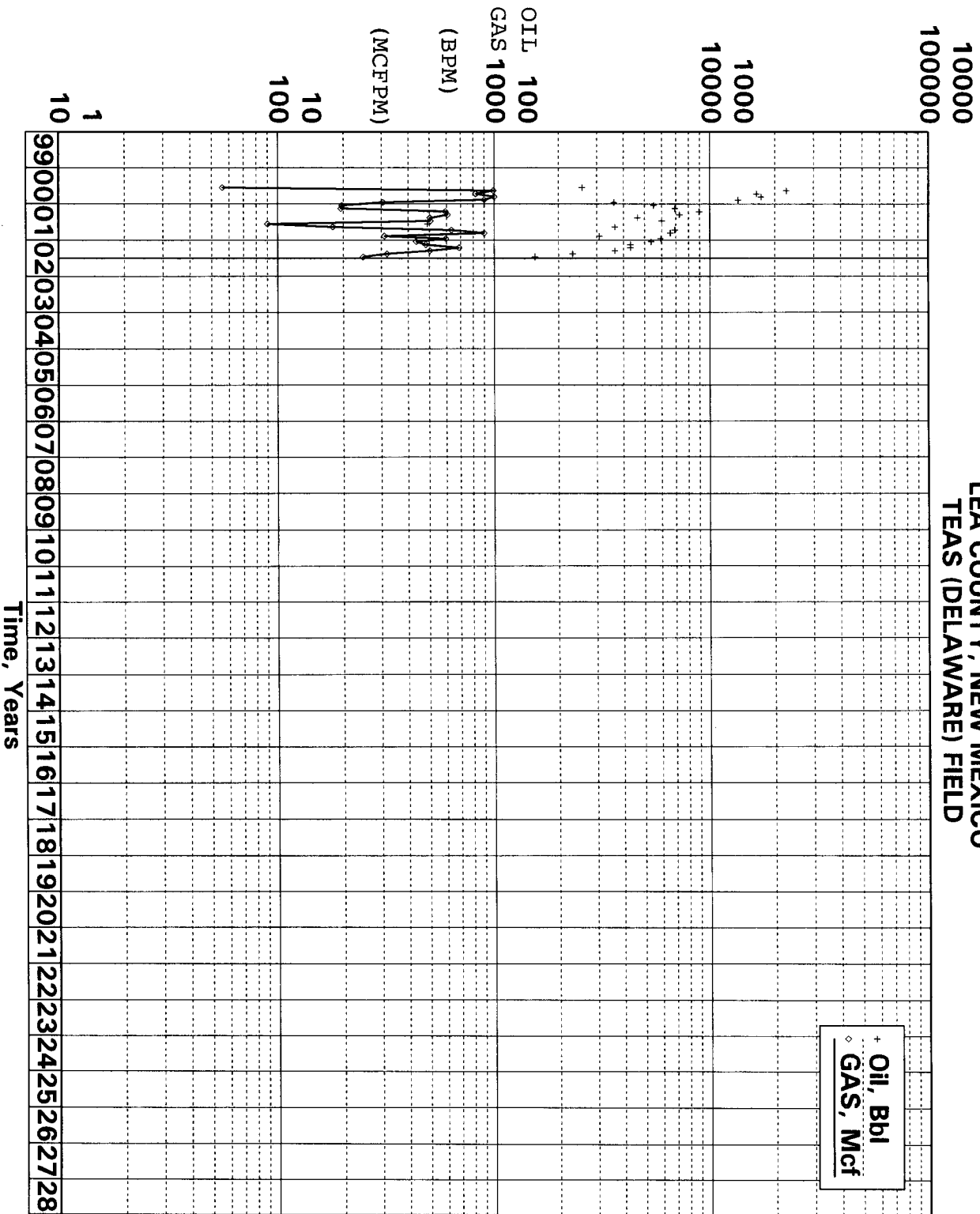
Smith Ranch Federal #2-11. These samples indicate gases from each zone are compositionally similar.

- **MECHANICAL CONDITION OF WELLBORE**

A wellbore schematic diagram of the current conditions within the Smith Ranch Federal #2-11 is attached. This well was completed with 5 ½" production casing which would render a dual completion of Bone Spring and Delaware virtually impossible. This is particularly true in view of the need to artificially lift production from each zone.

If downhole commingling is not approved, Samson will continue to produce the Delaware zone to depletion and then attempt to return the Bone Spring to production at that time. This is a needless course of action inasmuch as downhole commingling is a proven successful method of operation in a direct offset producing well (see attached production curves).

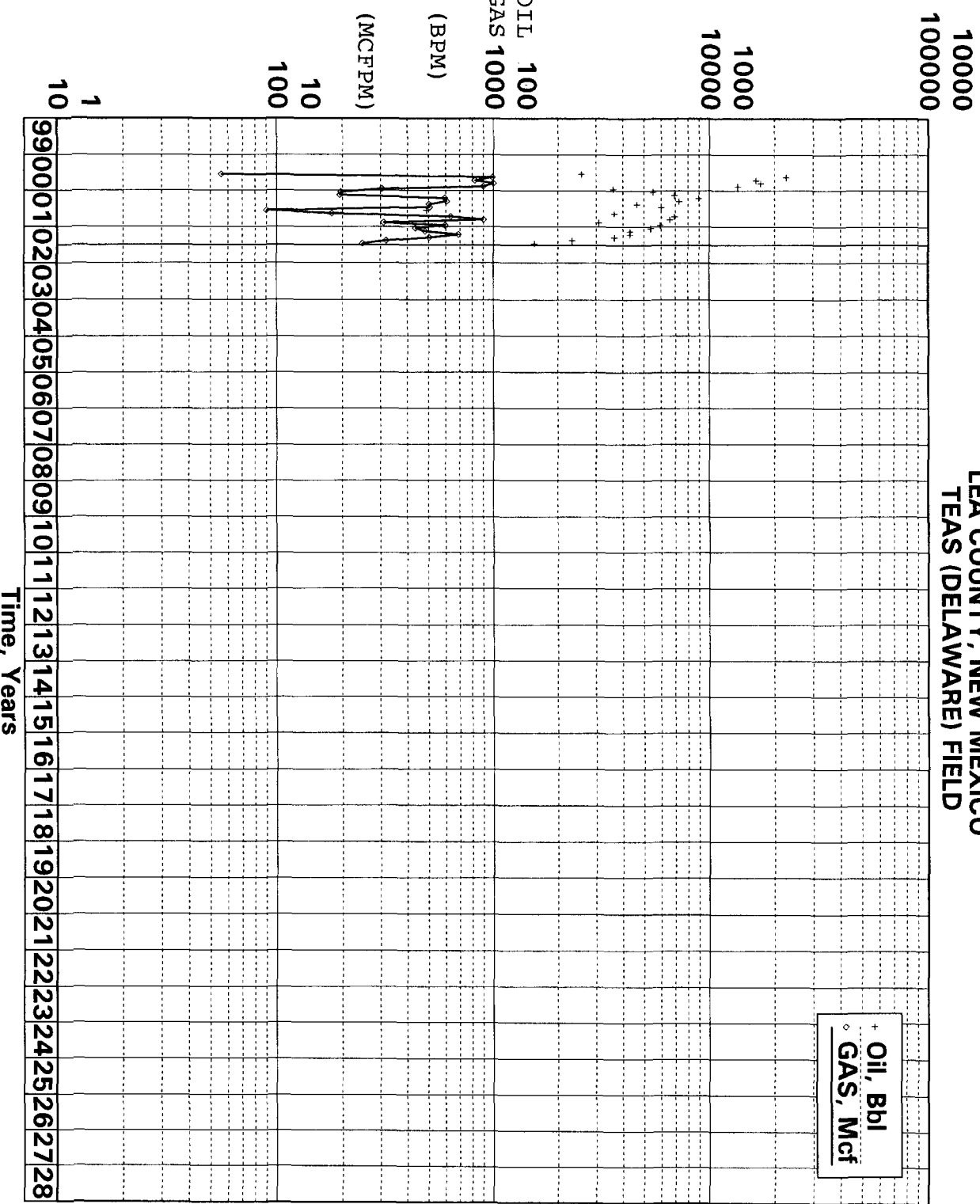
**SAMSON RESOURCES : SMITH RANCH FEDERAL #2-11
LEA COUNTY, NEW MEXICO
TEAS (DELAWARE) FIELD**



PSD	07/01/2002
Phase	OIL
Type	
Decline(%)	
q1	
Cum(M) 06/2002	16.336
Remaining(M)	0.000
Ultimate(M)	16.336
OGRE Cum(M)	
OGRE Ult(M)	
Segment	???
Type	
Decline(%)	
q1	
Limit	IMOS
Forecast	07/01/2002
Decline(%)	0.0
q actual	
Cum(M) 06/2002	16.336
Remaining(M)	0.000
OGRE Cum(M)	0.000

Time, Years

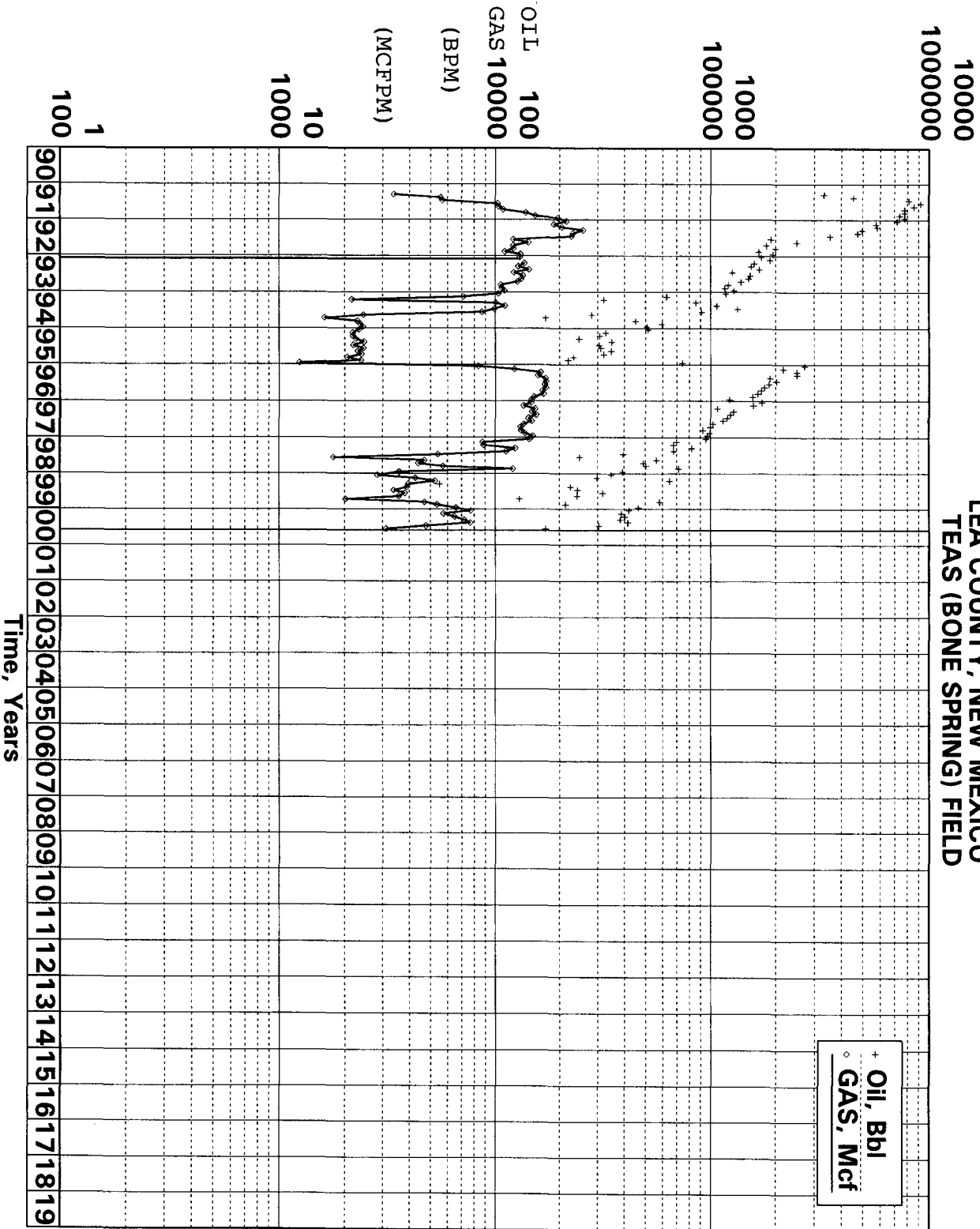
**SAMSON RESOURCES : SMITH RANCH FEDERAL #2-11
LEA COUNTY, NEW MEXICO
TEAS (DELAWARE) FIELD**



PSD	07/01/2002
Phase	GAS
Type	
Decline(%)	
q	
Cum(M) 06/2002	12.063
Remaining(M)	0.000
Ultimate(M)	12.063
OGRE Cum(M)	
OGRE Ult(M)	
Segment	777
Type	
Decline(%)	
qi	
Limit	IMOS
Forecast	07/01/2002
Decline(%)	0.0
q actual	0
Cum(M) 06/2002	12.063
Remaining(M)	0.000
OGRE Cum(M)	0.000

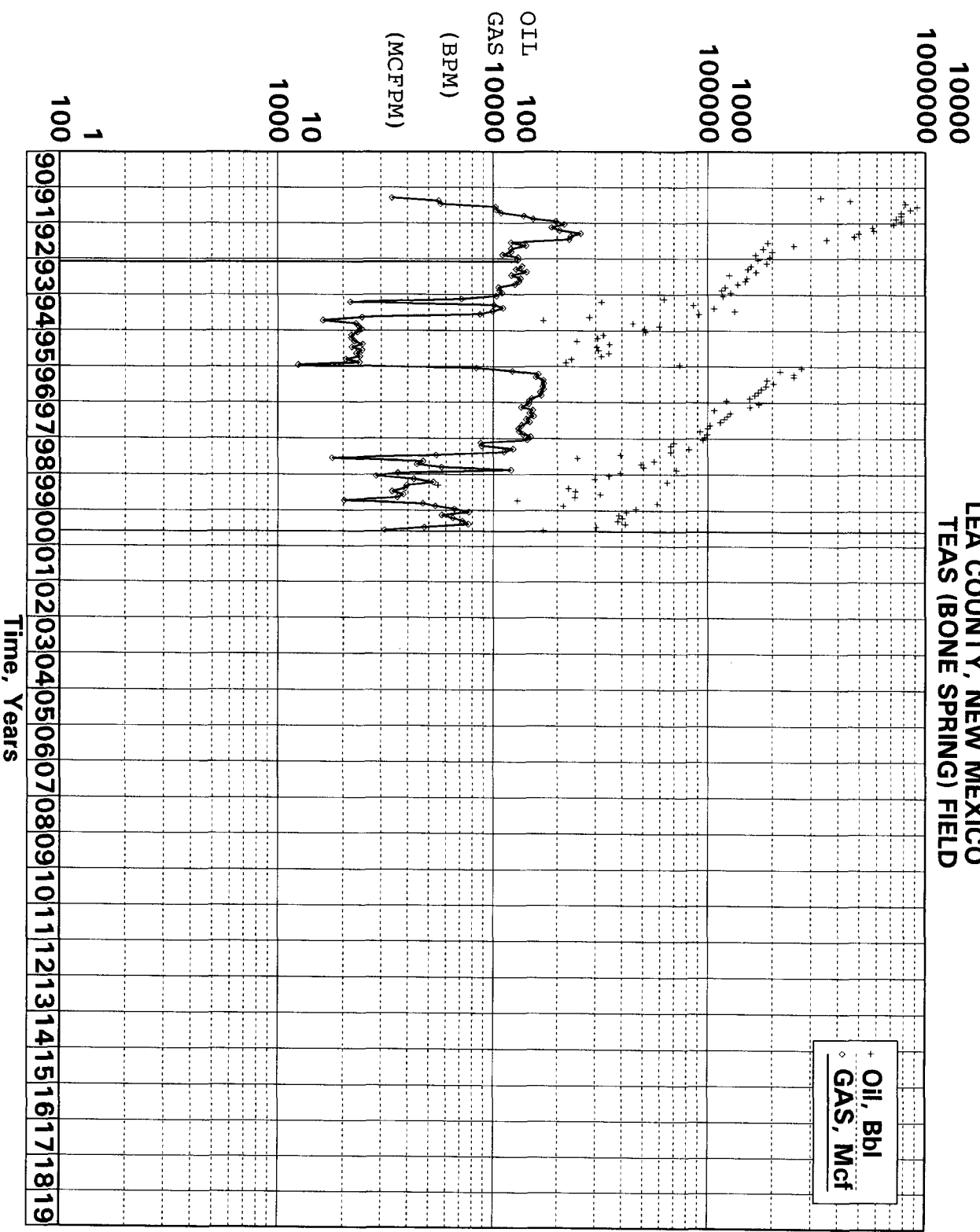
Time, Years

SAMSON RESOURCES : SMITH RANCH FEDERAL #2-11
LEA COUNTY, NEW MEXICO
TEAS (BONE SPRING) FIELD



PSD	08/01/2000
Phase	OIL
Type	
Decline(%)	
q _i	
Cum(M) 07/2000	189.721
Remaining(M)	0.000
Ultimate(M)	189.721
OGRE Cum(M)	
OGRE Ult(M)	
Segment	777
Type	
Decline(%)	
q _i	
Limit	IMOS
Forecast	08/01/2000
Decline(%)	0.0
q	0
q actual	
Cum(M) 07/2000	189.721
Remaining(M)	0.000
OGRE Cum(M)	0.000

SAMSON RESOURCES : SMITH RANCH FEDERAL #2-11
LEA COUNTY, NEW MEXICO
TEAS (BONE SPRING) FIELD



Oil, Bbl
 GAS, Mcf

PSD	08/01/2000
Phase	GAS
Type	
Decline(%)	
q _i	
Cum(M) 07/2000	1079.609
Remaining(M)	0.000
Ultimate(M)	1079.609
OGRE Cum(M)	
OGRE Ult(M)	

Segment	???
Type	
Decline(%)	
q _i	
Limit	IMOS
Forecast	08/01/2000
Decline(%)	0.0
q	0
q actual	
Cum(M) 07/2000	1079.609
Remaining(M)	0.000
OGRE Cum(M)	0.000

Time, Years

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : BTA Oil Producers
 Lease : Gem
 Well No. : # 3
 Lab No. : G:\ANALYSES\May1900.001

Sample Loc. :
 Date Analyzed: 19-May-2000
 Date Sampled : 17-May-2000

ANALYSIS

1. pH 6.690
2. Specific Gravity 60/60 F. 1.100
3. CaCO₃ Saturation Index @ 80 F. +0.227
 @ 140 F. +1.117

Dissolved Gasses

	MG/L	EQ. WT.	*MEQ/L
4. Hydrogen Sulfide	0		
5. Carbon Dioxide	85		
6. Dissolved Oxygen	Not Determined		

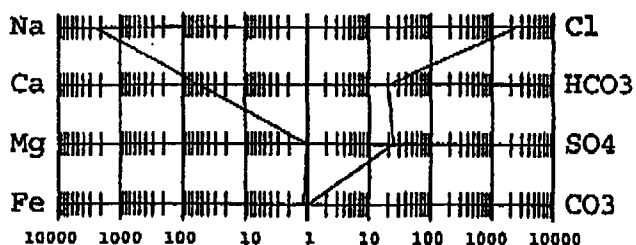
Cations

7. Calcium (Ca ⁺⁺)	1,058	/ 20.1 =	52.64
8. Magnesium (Mg ⁺⁺)	0	/ 12.2 =	0.00
9. Sodium (Na ⁺)	54,898	/ 23.0 =	2,386.87
10. Barium (Ba ⁺⁺)	Not Determined		

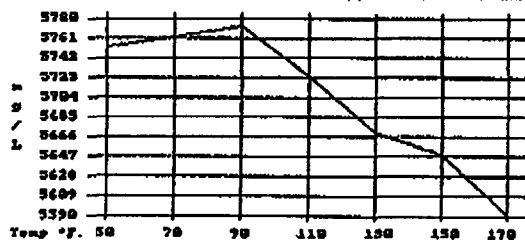
Anions

11. Hydroxyl (OH ⁻)	0	/ 17.0 =	0.00
12. Carbonate (CO ₃ ⁼)	0	/ 30.0 =	0.00
13. Bicarbonate (HCO ₃ ⁻)	1,206	/ 61.1 =	19.74
14. Sulfate (SO ₄ ⁼)	1,150	/ 48.8 =	23.57
15. Chloride (Cl ⁻)	84,981	/ 35.5 =	2,393.83
16. Total Dissolved Solids	143,293		
17. Total Iron (Fe)	20	/ 18.2 =	1.10
18. Total Hardness As CaCO ₃	2,642		
19. Resistivity @ 75 F. (Calculated)	0.045 /cm.		

LOGARITHEMIC WATER PATTERN



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X	*meq/L = mg/L.
Ca (HCO ₃) ₂	81.04	19.74	1,600
CaSO ₄	68.07	23.57	1,604
CaCl ₂	55.50	9.33	518
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	0.00	0
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	2,384.50	139,398

*Milli Equivalents per Liter

This water is slightly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts, and the presence of, CO₂ in solution.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : BTA Oil Producers
 Lease : Gem
 Well No. : # 4
 Lab No. : G:\ANALYSES\May1900.001

Sample Loc. :
 Date Analyzed: 19-May-2000
 Date Sampled : 17-May-2000

ANALYSIS

1. pH 5.970
2. Specific Gravity 60/60 F. 1.188
3. CaCO₃ Saturation Index @ 80 F. +1.804
 @ 140 F. +3.184

Dissolved Gasses	MG/L	EQ. WT.	*MEQ/L
4. Hydrogen Sulfide	0		
5. Carbon Dioxide	165		
6. Dissolved Oxygen	Not Determined		

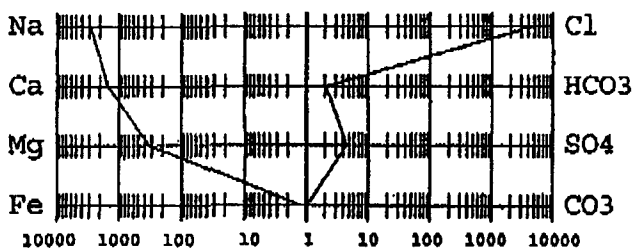
Cations

7. Calcium (Ca++)	29,098	/ 20.1 =	1,447.66
8. Magnesium (Mg++)	3,851	/ 12.2 =	315.66
9. Sodium (Na+) (Calculated)	63,210	/ 23.0 =	2,748.26
10. Barium (Ba++)	Below 10		

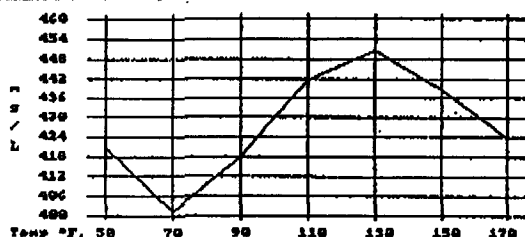
Anions

11. Hydroxyl (OH-)	0	/ 17.0 =	0.00
12. Carbonate (CO ₃ =)	0	/ 30.0 =	0.00
13. Bicarbonate (HCO ₃ -)	122	/ 61.1 =	2.00
14. Sulfate (SO ₄ =)	205	/ 48.8 =	4.20
15. Chloride (Cl-)	159,964	/ 35.5 =	4,506.03
16. Total Dissolved Solids	256,450		
17. Total Iron (Fe)	21	/ 18.2 =	1.15
18. Total Hardness As CaCO ₃	88,519		
19. Resistivity @ 75 F. (Calculated)	0.001 /cm.		

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	2.00	162
CaSO ₄	68.07	4.20	286
CaCl ₂	55.50	1,441.46	80,001
Mg (HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	315.66	15,032
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	2,748.91	160,701

*Milli Equivalents per Liter

This water is somewhat corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts, and the presence of, CO₂ in solution.

Comparison Between Two Waters

19-May-2000

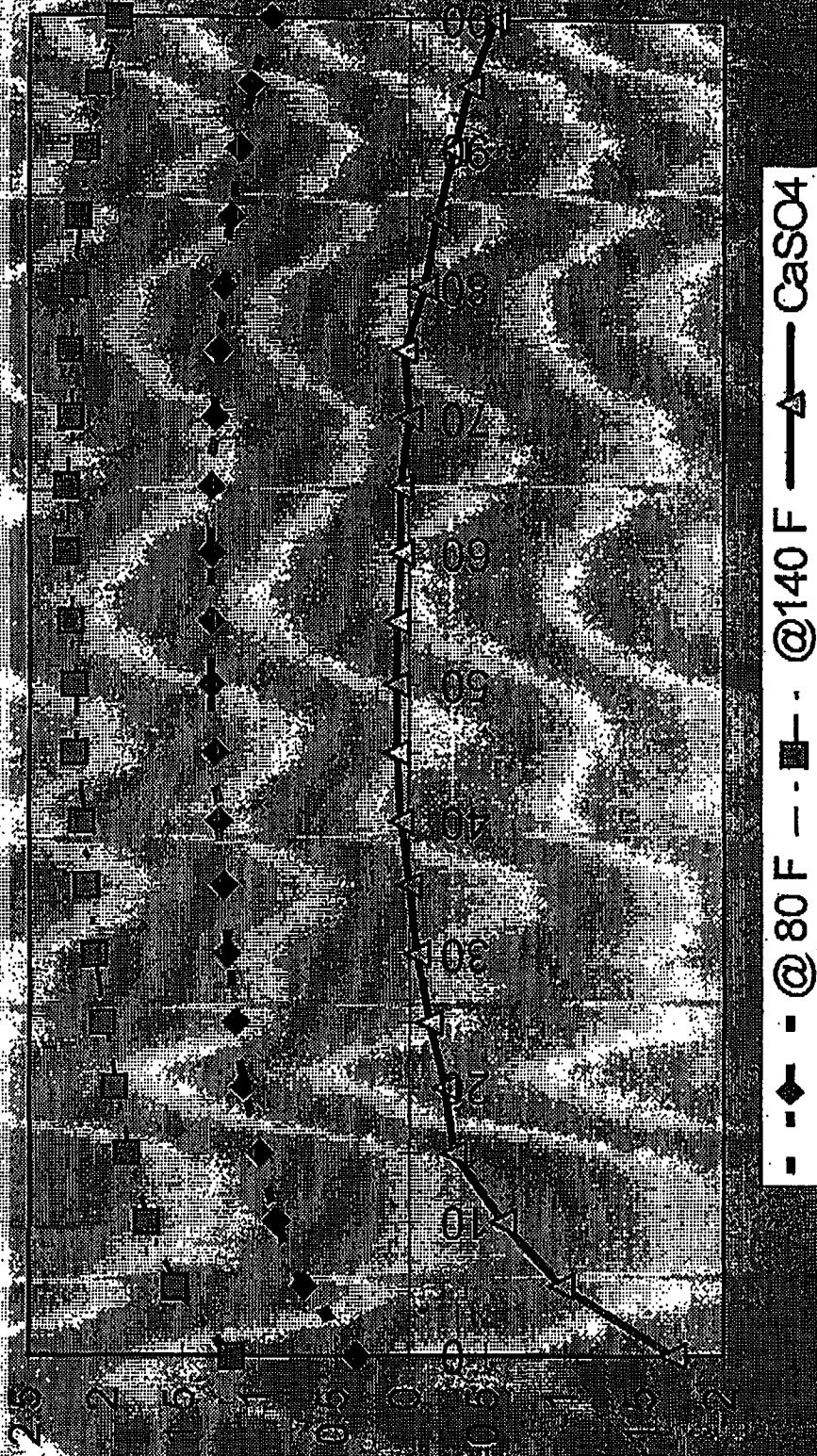
TO: Pro-Kem, Inc.

Company : BTA Oil Producers

Sample # 1
Gem # 3Sample # 2
Gem # 4

Percent of #1 & #2		pH	TDS mg/L	SpGr	Saturation Index @80°F. @140°F.		Calcium Sulfate Scaling Potential
100	- 0	6.690	143203	1.100	+0.352	+1.176	Nil
95	- 5	6.654	148865	1.104	+0.704	+1.537	Nil
90	- 10	6.618	154528	1.109	+0.884	+1.727	Nil
85	- 15	6.582	160190	1.113	+1.002	+1.855	Nil
80	- 20	6.546	165852	1.118	+1.087	+1.949	Nil
75	- 25	6.510	171515	1.122	+1.151	+2.023	Nil
70	- 30	6.474	177177	1.126	+1.200	+2.082	Nil
65	- 35	6.438	182839	1.131	+1.237	+2.129	Marginal
60	- 40	6.402	188502	1.135	+1.266	+2.168	Marginal
55	- 45	6.366	194164	1.140	+1.287	+2.198	Marginal
50	- 50	6.330	199827	1.144	+1.300	+2.222	Marginal
45	- 55	6.294	205489	1.148	+1.308	+2.239	Marginal
40	- 60	6.258	211151	1.153	+1.308	+2.249	Marginal
35	- 65	6.222	216814	1.157	+1.302	+2.252	Marginal
30	- 70	6.186	222476	1.162	+1.288	+2.248	Marginal
25	- 75	6.150	228138	1.166	+1.266	+2.236	Nil
20	- 80	6.114	233801	1.170	+1.234	+2.214	Nil
15	- 85	6.078	239463	1.175	+1.189	+2.178	Nil
10	- 90	6.042	245125	1.179	+1.126	+2.126	Nil
5	- 95	6.006	250788	1.184	+1.038	+2.048	Nil
0	- 100	5.970	256450	1.188	+0.907	+1.926	Nil

Comparison Between Two Waters



Duke Energy Field Services, Inc.

370 17th Street, #900 Denver CO 80202

Gas Analysis Certificate Report10/12/2001
08:15:09
DCCHAPMAN

011911

Analysis ID: 45260-00

Alternate ID:

#2 SMITH RANCH Fed #2

Company Name: SAMSON RESOURCES CO

Effective Date: 09/01/2001 00:00

Saturated BTU:

1405.5

Sample Date:

08/13/2001

Valid Thru Date: 01/18/2038 00:00

Sample ID:

1095001

Last Update: 08/16/2001 14:37

Dry BTU:

1429.6

Sample Type:

Spot

Analysis Origin: Portable Chromatogr

Gravity:

0.9390

Sample Pressure Base:

14.650

Analysis Type: Lab analysis

Source:

Import

Sample Temperature:

89.0

Sample Pressure:

17.0

<u>Component</u>	<u>% Mol</u>	<u>GPM</u>		
Methane	57.940		C4 lighter STCond	0.000
Ethane	12.200	3.2432	C5 heavier STCond	0.000
Propane	10.690	2.9274	26 # Gasoline @14.65	2.503
I Butane	1.510	0.4912	26 Lbs. excess	0.000
N Butane	3.680	1.1538	Stock Tank Bbl/mm	0.00
I Pentane	1.150	0.4185	H2O GPMs	0.000
Pentane	0.960	0.3458	FWS Factor	0.0000
Hexanes+	2.000	0.8678	FWS C6+or C7+ GPM	0.000
			GC Unnormalized Mol%	0
			Reject Override Code	0
			TestCar GPM Permian	1.593
			TestCar GPM Panhandle	1.778
			Run Number	1095000
			H2S Test Type	0
			H2S Units	0
			H2S PPM	0.00
			TestCar GPM MidCon	1.481
Nitrogen	8.440			
CO2	1.440			
Oxygen	0.000			
H2O	0.000			
CO	0.000			
H2S	0.000			
Hydrogen	0.000			
Helium	0.000			
Argon	0.000			
Total	100.010	9.4477		

WELL FILE - TEST

Comments:

GPM-0680

BTU @	15.025
1.441	SAT
1.466	DRY

① Smith Ranch #3

GPM Field Certificate of Analysis

Meter Number - Sub:	45260-00	Flowing Temp:	70
Run/Secured Date:	11/19/99	Flowing Pressure:	14
Run Number:	1095004	Run/Secured By:	GW

Component	Normalized Mole%
Helium	0.000
H2S	0.056
Nitrogen	3.039
Oxygen	0.000
Carbon Dioxide	8.847
Methane	69.251
Ethane	10.730
Propane	4.917
Isobutane	0.436
Normal Butane	1.288
Isopentane	0.335
Normal Pentane	0.370
C6 Plus	0.731
Total:	100.000

WELL FILE - TEST

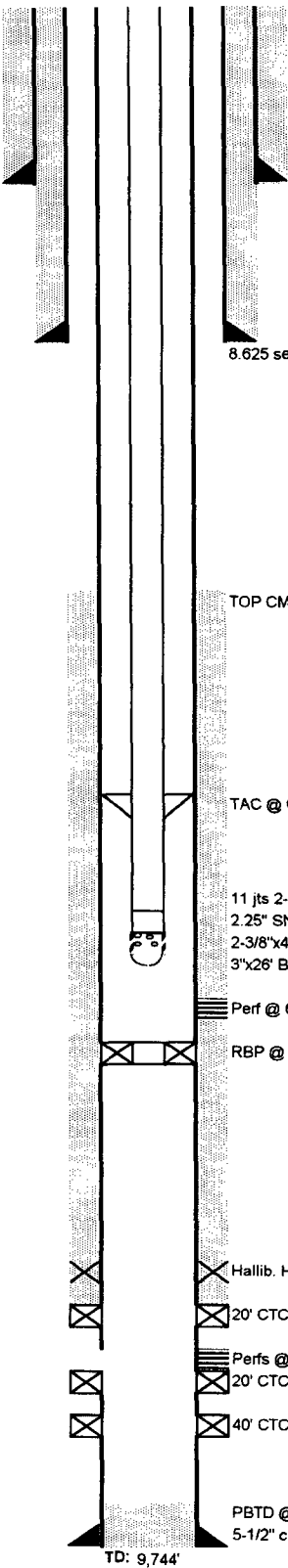
H2S PPM:	561	Calculated Gravity:	0.812
H2S Test Type:	C		

BTU-DRY:	1.135	at 14.65 PSIA and 60 Deg. F.
BTU-SAT:	1.116	

15.025

1.164 Dry
1.145 Sat

Smith Ranch Fed #2
01/19/11



WELL:	Smith Ranch 2-11	SPUD DATE:	1/27/91	FIELD:	Teas Penn
COUNTY:	Lea	RR DATE:		LOCATION:	Sec. 11-20S-33E
STATE:	NM	COMP DATE:		FORMATION:	Bone Springs
API #:	30-025-31138	BLM #:	NMNM17238	LSE #:	011911
TD:	9,744'	PBTD:	9,670'	ELEVATION:	3582.5' GL; 3601.5' KB

CASING RECORD									
SURFACE CASING									
O.D.	WT./FT.	GRADE	THD	TOP	BTM	NO. JTS.	BIT SZ.	SX CMT.	TOP CMT.
8.625"	32.00#	S-80		Surf	1,065'	24		800	Surf
	28.00#	S-80		1,065'	5,279'	96			

O.D.	WT./FT.	GRADE	THD	TOP	BTM	NO. JTS.	BIT SZ.	SX CMT.	TOP CMT.
5.500"	20.00#	N-80	LT&C	Surf	---	41		1200	3506'
	17.00#	N-80	LT&C	---	9,744'	172			CBL

TUBING							
O.D.	WT./FT.	GRADE	THD	TOP	BTM	NO. JTS.	
2.875"	6.50#	N-80	EUE	Surf	6,536'	207	
	yellow band						

PERFORATION RECORD					
DATE	TOP	BOTTOM	SPF	ZONE	STATUS
03/14/95	9,386'	9,442'	2	BS 2sd	Open
07/20/00	6,582'	6,590'	4	Delaware	

WELL HISTORY	
3/11/91	Spot 20 Bbls of 2% KCL H2O mixed w/ Howco ClaSta & Surfactant IP : 380 BOP
12/20/95	RU BJ services & frac BSPG with 100,000 lbs 20/40 econoprop & 40,000 gals 50Q CO2/35# medallion crosslinked foam.
12/22/95	Cleaned out wellbore with hydrostatic bailer to 9670'.
2/09/99:	Load & test csg to 440#. Acidize BSPG w/2250 gal 15% HCL.
10/1/99:	Installed pumping unit. Pumping from 9335.6'
	HOS Tool @ 9313' (Hydraulically Opening Stage Cementer) External casing packers run as depicted to isolate payzone from cement invasion and to isolate payzone from water sand at 9550'
7/19/00:	Set RBP & set @ 6760'. Perf Delaware f/6582'-90 & acidize w/1000 gals 7-1/2% NEFE DX BX CC-1 acid. Form broke dn @ 2300#. Trtd at 5 BPM @ 2250# - 2450#. Frac dn 2-7/8" tbg w/10M gal Ambor 1030 pad and 32M gal Ambor 1030 get + 48M# 16/30 mesh Ottawa sd. Well screened out to 7400# w/1000 gals of 6#/gal sd in form. RIH w/tbg & BHA, RIH w/rods & pump. TAC @ 6159'.
Rod Detail: 7/27/00	
2-1/2"x1-1/2"x20' RWBC insert pump w/60 composition rings	
170 - 3/4" D rods	
88 - 7/8" D rods	
4'x4'x6'x7/8" subs	
1/2"x26' polish rod w/14' liner	

MISCELLANEOUS		
SRC WTY:	75%	BHT:
ZONE PENALTY:		BHP:
COMPETITIVE:		EST SITP:
FERC CLASS:		EST WHSIP:
FORCE POOL:		COMPRESSOR DETAIL:
SRC OFFSET/ZONE:		
LOGS:		PUMPING UNIT DETAIL:

CAPACITIES		
Tubular Cap.	(bbl/ft)	(cf/ft)
Tubing	0.00579	0.03250
Casing	0.02320	0.13050
Liner		
Annular Cap.	(bbl/ft)	(cf/ft)
Tubing x Casing	0.01520	0.08540
Liner x Casing		
Casing x Hole	0.03090	0.17330
Liner x Hole		

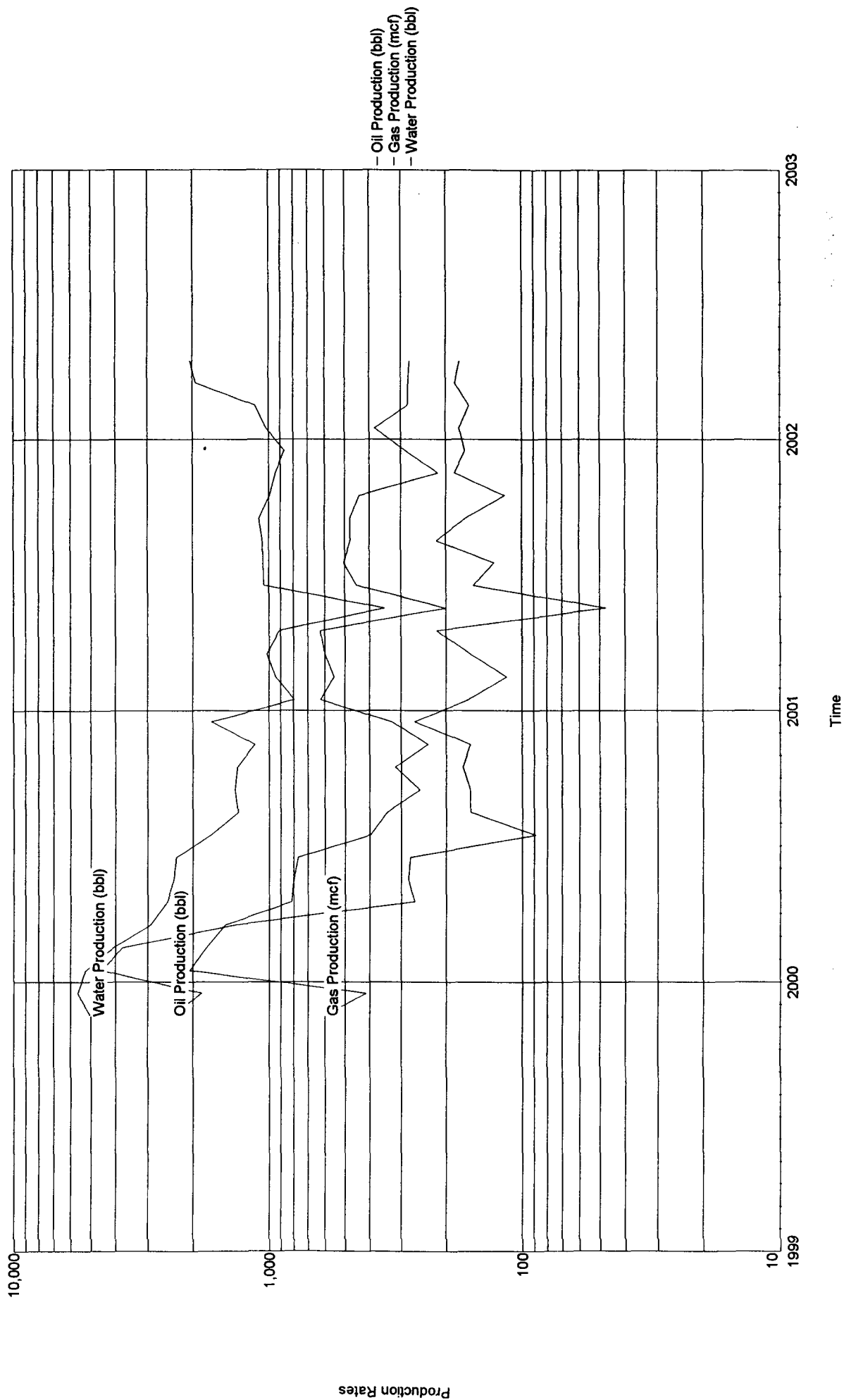
TUBULAR GOODS PERFORMANCE					
Material	ID (in)	Drift (in)	Collapse (psi)	Burst (psi)	Tensile (lbs)
8-5/8" 32# S-80	7.921	7.796	2,210	2,860	279,000
8-5/8" 28# S-80	8.017	7.892	1,640	2,470	233,000
5-1/2" 20# LT&C N-80	4.778	4.653	8,830	9,190	428,000
5-1/2" 17# LT&C N-80	4.892	4.767	6,280	7,740	348,000
2-7/8" 6.5# N-80	2.441	2.347	11,160	10,570	144,960
** Safety factor not included.					

Engineer: Hari Narayana
Office#: 918-591-1873
Fax#: 918-591-7873

repared By: Sherri Rainwater
Date: 3/23/94
Updated: 8/1/00 jdb

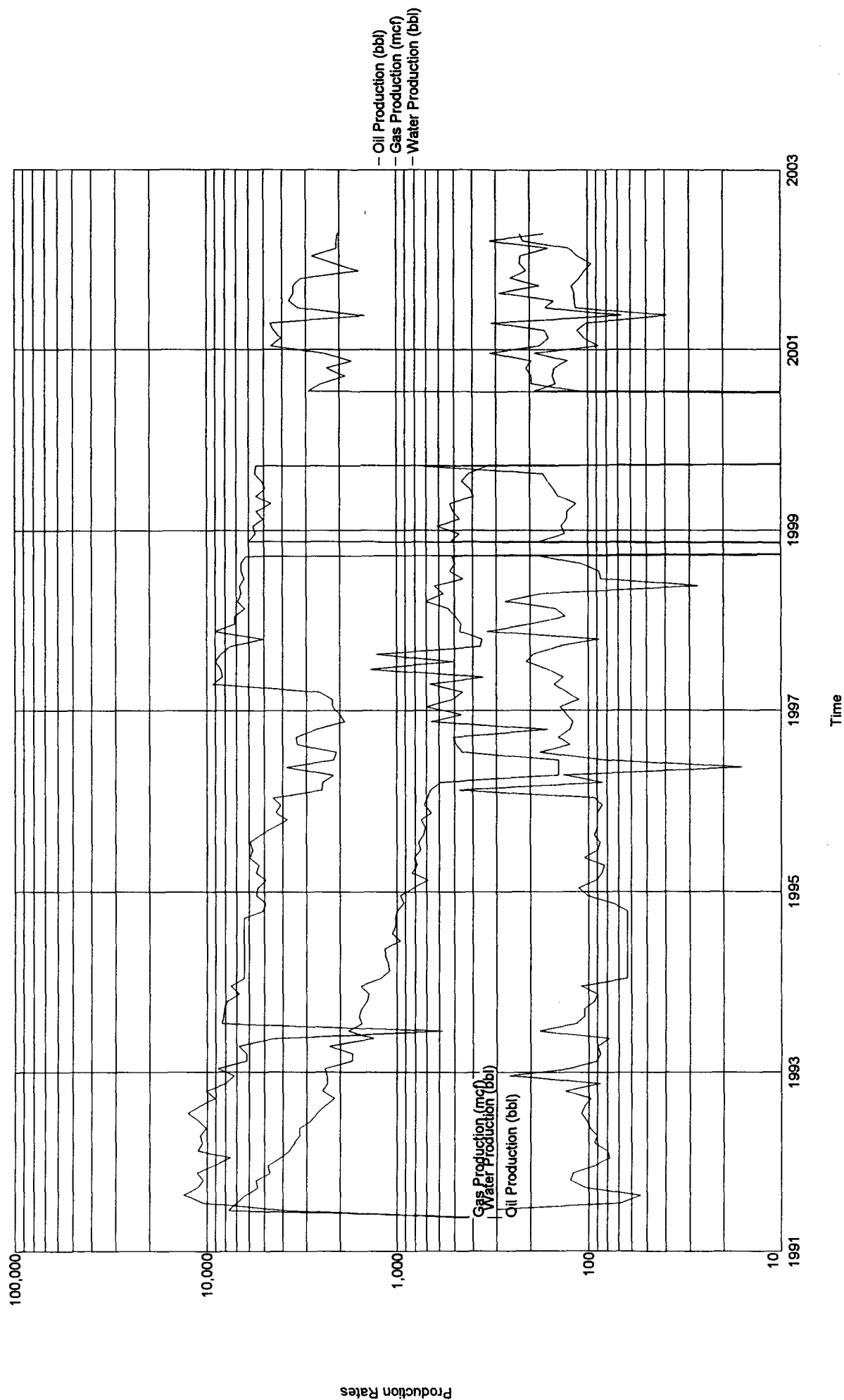
Lease Name: GEM 8705 JV-P #4
County, State: LEA, NM
Operator: BTA OIL PRODUCERS
Field: TEAS
Reservoir: DELAWARE
Location: 2 20S 33E SE SW

GEM 8705 JV-P - TEAS



Lease Name: GEM 8705 JV-P #4
County, State: LEA, NM
Operator: BTA OIL PRODUCERS
Field: TEAS
Reservoir: BONE SPRING
Location: 2 20S 33E SE SW

GEM 8705 JV-P - TEAS



SAMSON RESOURCES COMPANY

Smith Ranch Federal #2-11
660' FNL & 1,980' FWL
Section 11-T20S-R33E
Lea County, New Mexico

APPLICATION FOR DOWNHOLE COMMINGLING

NOTIFICATION LISTING

Breck Operating Corporation
P. O. Box 911
Breckenridge, Texas 76424-0911

BTA Oil Producers
104 South Pecos
Midland, Texas 79701

Devon Energy Production Company
20 North Broadway
Suite 500
Oklahoma City, Oklahoma 73102-8260

Dominion Oklahoma Texas Exploration & Production
14000 Quail Springs Parkway
Suite 600
Oklahoma City, Oklahoma 73134-2600

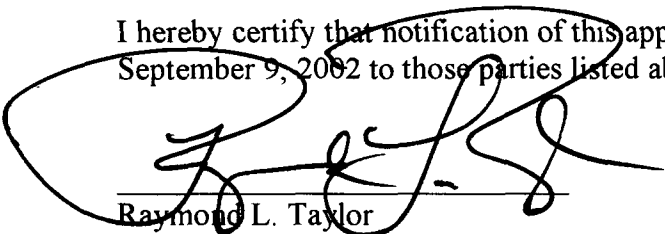
Nearburg Production Company
P. O. Box 823085
Dallas, Texas 75382

Shackelford Oil Company
P. O. Box 10665
Midland, Texas 79702

United States Department of the Interior
Bureau of Land Management
2909 West 2nd Street
Roswell, New Mexico 88201

Ray Westall
P. O. Box 4
Loco Hills, New Mexico 88255

I hereby certify that notification of this application was mailed via certified US mail on September 9, 2002 to those parties listed above.



Raymond L. Taylor