

devon
ENERGY CORPORATION

20 North Broadway, Suite 1500
Oklahoma City, Oklahoma 73102-8260

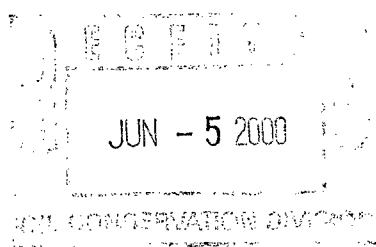
Telephone 405/235-3611
FAX 405/552-4550

June 1, 2000

Certified Mail No. Z 068 589 891

STATE OF NEW MEXICO
Energy, Minerals and Natural Resources Dept.
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505-6429

RE: Downhole Commingling
Hawk 9 P Federal #19
Section P-9-18S-27E
API #30-015-29517
Red Lake (Q-GB-SA) and
Red Lake (Glorieta-Yeso) Fields
Eddy County, NM




Gentlemen:

Concerning the referenced, enclosed please find the Form C-107A Application for Downhole Commingling and attachments (and three copies).

Please direct inquiries concerning this application to me at (405) 552-4515.

Yours truly,

DEVON ENERGY CORPORATION (NEVADA)


Tonja Rutelonis
Engineering Tech.

/trr
Enclosures

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980
DISTRICT II
811 South First St., Artesia, NM 88210-2835
DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410-1693
DISTRICT IV
2040 S. Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429

Form C-107-A
Revised August 1999

APPROVAL PROCESS:

Administrative Hearing

EXISTING WELLBORE

YES NO

APPLICATION FOR DOWNHOLE COMMINGLING

Devon Energy Production Company, L.P. 20 N. Broadway, Suite 1500, Oklahoma City OK 73102-8260

Operator Address

Hawk 9 P Federal 19 P - 9-18S-27E Eddy

Lease Well No. Unit Ltr. - Sec - Twp - Rge Spacing Unit Lease Types: (check 1 or more) County

OGRID NO. 6137 Property Code 20719 API NO. 30-015-29517 Federal X State (and/or) Fee

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Red Lake (Q-GB-SA)		Red Lake (Glor-Yeso)
2. Top and Bottom of Pay Section (Perforations)	1663'-2519'		To be perforated 3100'-3400'
3. Type of production (Oil or Gas)	Oil		Oil
4. Method of Production (Flowing or Artificial Lift)	Artificial Lift		Artificial Lift
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Original	a. (Current) 50 psi producing BHP	a.	a. 100 psi producing BHP
	b. (Original)	b.	b.
6. Oil Gravity (°API) or Gas BTU Content	39.5°		42.6°
7. Producing or Shut-In?	Producing		Awaiting perfs
Production Marginal? (yes or no)	Yes		Expected to be marginal
• If Shut-In, give 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 • If Producing, give date and oil/gas/ water rates of recent test (within 60 days)	Date: N/A Rates:	Date: Rates:	Date: N/A Rates:
	Date: 4/9/00 Rates: 1 BOPD, 5 MCFGPD, 326 BWPD	Date: Rates:	Date: N/A Rates:
8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)	Oil: 15 % Gas: 15 %	Oil: % Gas: %	Oil: 85 % Gas: 85 %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? Yes X No
If not, have all working, overriding, and royalty interests been notified by certified mail? X Yes No

11. Will cross-flow occur? Yes X No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. Yes No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? X Yes No

13. Will the value of production be decreased by commingling? Yes X No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. X Yes No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S).

16. 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, overriding, and royalty interests for uncommon interest cases.
- * Any additional statements, data, or documents required to support commingling.

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

SIGNATURE TITLE Engineering Technician DATE 6/1/00

TYPE OR PRINT NAME Tonja Rutelonis TELEPHONE NO. (405) 552-4515

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Instruction on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

OIL CONSERVATION DIVISION

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-29517	Pool Code 51300	Pool Name Red Lake (Q-GB-SA) / Red Lake, Glorieta - Yeso
Property Code 20719	Property Name Hawk 9 P Federal	Well Number 19
OGRID No. 6137	Operator Name Devon Energy Production Company, L.P.	Elevation 3492'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	9	18 S	27 E		770'	SOUTH	990'	EAST	EDDY

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

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

	OPERATOR CERTIFICATION I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief. <u>E. L. Buttross, Jr.</u> Signature <u>E. L. Buttross, Jr.</u> Printed Name <u>District Engineer</u> Title <u>March 10, 1997</u> Date
	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. <u>February 18, 1997</u> Date Surveyed <u>[Signature]</u> Signature & Seal of Professional Surveyor <u>W.D. Num. 7022c</u> Certificate No. Gary L. Jones, 7977 BASIN SURVEYS

Hawk 9 P Federal #19

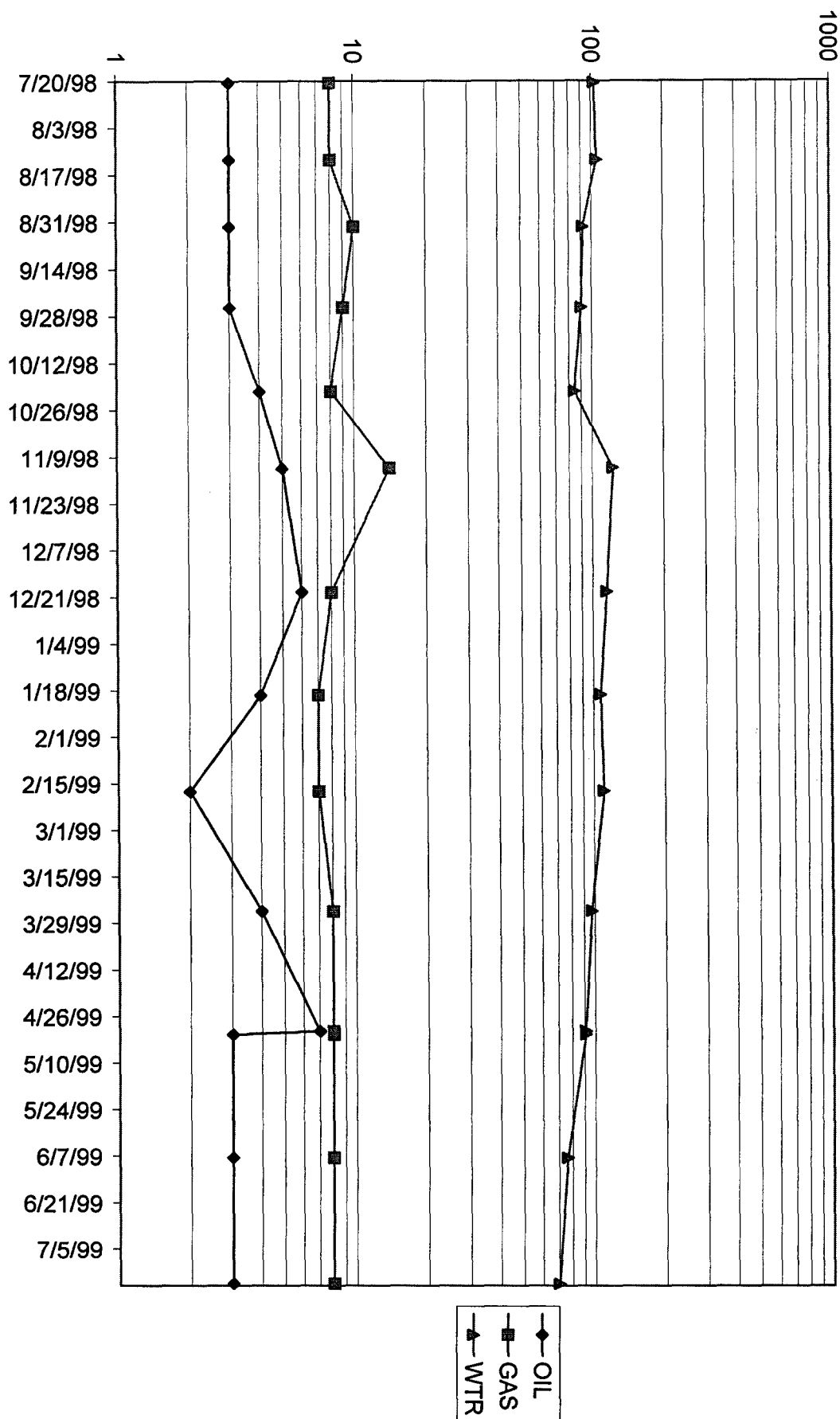
Allocation Formula

Well Name	Producing Formation	*Daily Production Test	% of Total
		Average	
Hawk 9 O Federal #17	Red Lake (Q-GB-SA)	3 BO/8 MCF/73 BW	15 %
ARCO-Lago Rosa 4 Federal #5 (offset Yeso producer)	Red Lake (Glor-Yeso)	17 BO/27 MCF/83 BW	85 %

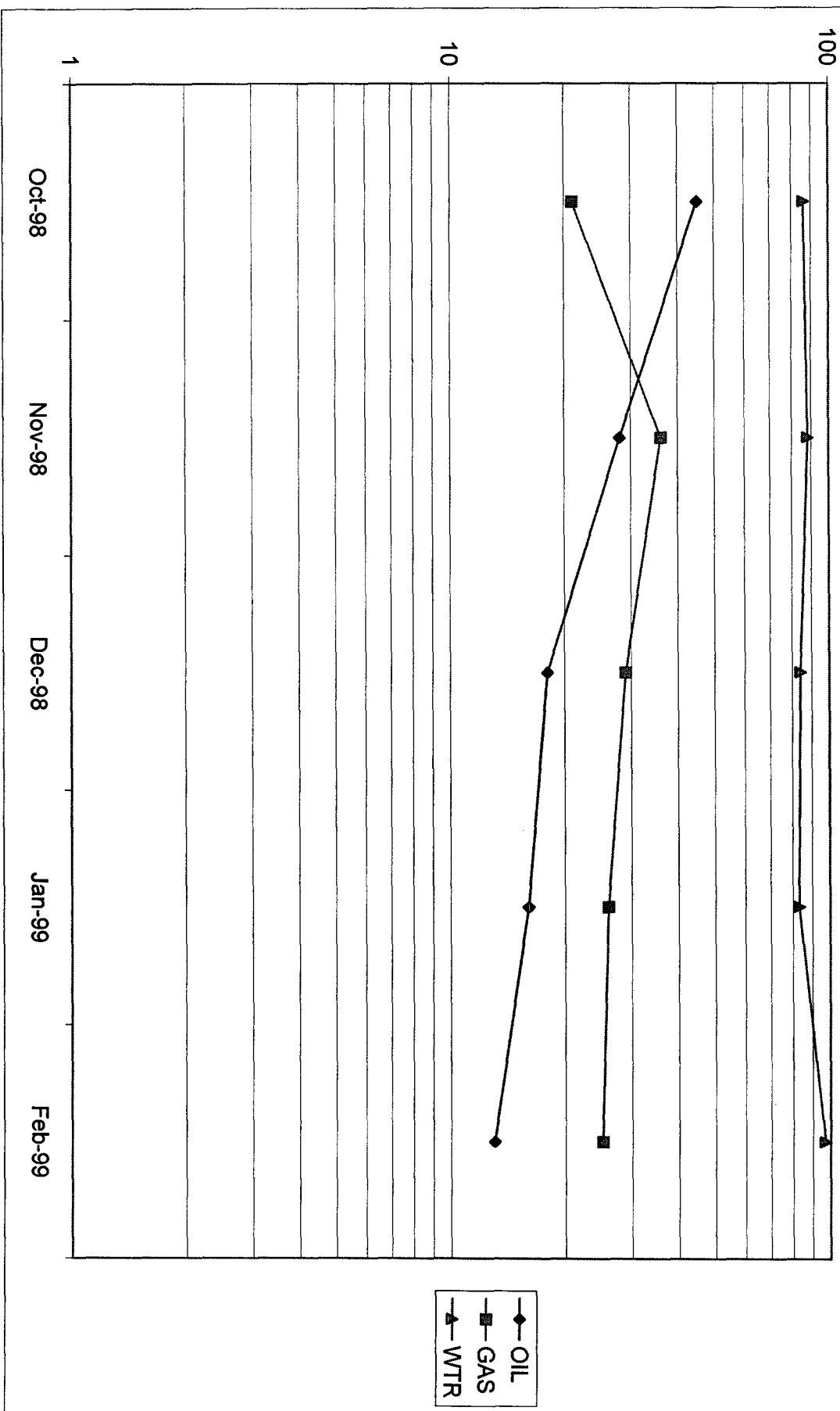
* From attached production plots

The above production test represents stable production from a San Andres producer (Hawk 9 O Federal #17) and a Yeso producer (ARCO-Lago Rosa 4 Federal #5). The Hawk 9 O Federal #17 was used for the allocation rather than the Hawk 9 P Federal #19 due to the high water production from the Upper San Andres perfs in the #19 well. These perfs will be squeezed. The offsetting #17 well represents a more accurate average oil and water production for the San Andres.

Hawk 9 O Federal #17 (San Andres)



Lago Rosa "4" Fed #5 (Yeso)



3
10
3
10

Lease: LAGO ROSA 4 FEDERAL (5)

Dwights

Retrieval Code: 150,015,0153023451120

07/29/99

3
10

2
10
2
10

2
10

10
10

10

1
1

1

1998

2000

Oil (bbl/day)

County: EDDY, NM

F.P. Date: 07/98

Gas (mcf/day)

Water (bbl/day)

Field: RED LAKE (GLORIETA Y Oil Cum: 6125 bbl

Reservoir: GLORIETA YESA

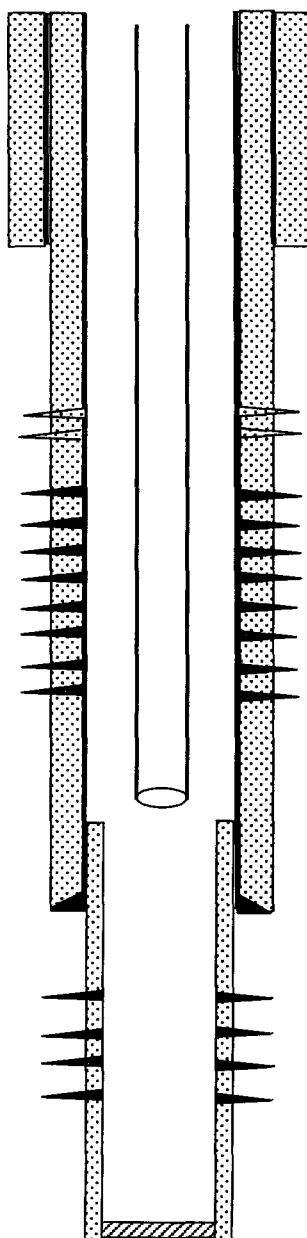
Gas Cum: 8248 mcf

Operator: ARCO PERMIAN

Location: 4L 18S 27E

DEVON ENERGY CORPORATION - WELLBORE SCHEMATIC

WELL NAME: Hawk 9 P Federal #19			FIELD: Red Lake			
LOCATION: 770' FSL & 990' FEL, Section 9-18S-27E			COUNTY: Eddy			STATE: NM
ELEVATION: GL = 3492'			SPUD DATE: 7/24/97		COMP DATE: 8/8/97	
API#: 30-015-29517		PREPARED BY: T. Rutelonis				DATE: 2/10/00
	DEPTH	SIZE	WEIGHT	GRADE	THREAD	HOLE SIZE
CASING:	0' - 1187'	8-5/8"	24#	J-55		12-1/4"
CASING:	0' - 2749'	5 1/2"	15.5#	J-55		7-7/8"
LINER:	2650' - 4300'	4"	10.46#	J-55	FL4S	4-3/4"
TUBING:	0' - 2620'	2-7/8"				
TUBING:						



☐ CURRENT

☒ PROPOSED

OPERATOR: DEVON ENERGY PRODUCTION COMPANY, L.P.

8-5/8" Casing, Set @ 1187' w/ 550 sxs cmt. TOC @ surface

SAN ANDRES PERFORATIONS:

1663'-2084' Upper San Andres and Alpha (SQUEEZED)

2160'-2519' San Andres "A", "B", "C", & "D"

2-7/8" tbg w/ SN @ 2620'

TOL @ 2650'

5 1/2" 15.5# J-55 Casing Set @ 2749' w/ 500 sxs cmt. TOC @ surf.

YESO PERFORATIONS:

+3100'- +3400' (20 HOLES, .38")

TD @ 4300'

174WK 9P FEB 19

ESTATE OF HELEN HENSON
1742 CATLIN DRIVE
FAIRFIELD, CA 94533

CONRAD G. & ADA J. KEYES,
LIVING TRUST
CONRAD G. & ADA J. KEYES, TRUSTEES
P. O. BOX 156
RUIDOSO, NM 88345

LARUE M WHITE
LLANFAIR-BELWOOD
1776 LARCH AVENUE #303
CINCINNATI, OH 45224

JANICE GETTYS
803 S STRATTON ST
DECATUR, TX 76234

MARJORIE MEYER, LIFE ESTATE
ROBERT K MEYER, REMAINDERMAN
C/O WORLD SAVINGS & LOAN, FSLA
ACCT #8-324718-9
390 S DAYTON ST, STE 211

DENVER, CO 80231

ROBERT GRANT & ALERTA N KEYES,
JTWROS, LIFE ESTATE
C/O NORWEST BANK NEW MEXICO OF
ROSWELL ACCT #2213451
P O BOX 1977

ROSWELL, NM 88201

MINERALS MANAGEMENT SERVICE
ROYALTY PROGRAM
BOX 5810, T.A.
DENVER, CO 80217

RICHARD K DAVIDSON
P O BOX 387
LA JARA, CO 81140

BARBARA A KURZ
8727 POINT PARK DR #414
HOUSTON, TX 77095

THE FAMILY TRUST
OF JOHN OALF LARSGAARD AND
SHARON LARUE LARSGAARD
TD 9/18/92
7627 146TH AVE E

SUMNER, WA 98390

ZANAIDA RUTH GRIFFIN
2808 ABINGDON PARKWAY
BIRMINGHAM, AL 35243

FREDRIC CHARLES GRIFFIN
P O BOX 44941
PHOENIX, AZ 86064

VICKI L OWENS
P O BOX 696
EUNICE, NM 88231

SCOTT C HENSON
7143 PALADIN WAY
RIO LINDA, CA 95673

DEVON ENERGY CORP. (NEVADA)
20 N. BROADWAY, STE 1500
OKLAHOMA CITY, OK 73102

OCCIDENTAL PERMIAN LTD.

OKY USA INC.

580 WESTLAKE PARK BLVD.

HOUSTON, TX 77079

MR. SCOTT E. WILSON

ATTEN: JERRY D. WEST

MR. RICHARD K. BARR

500 WEST TEXAS AVENUE

SUITE 1220

MIDLAND, TX 79701

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE*

FORM APPROVED

FILE
COPY(See owner's
instructions on
reverse side)OPERATOR'S COPY
TMM-025604

NM LC - 065478 B

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Otherb. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF RESVR ☐ Other

2. NAME OF OPERATOR

DEVON ENERGY CORPORATION (NEVADA)

3. ADDRESS AND TELEPHONE NO.

20 N. BROADWAY, SUITE 1500, OKC, OK 73102-8260 (405) 235-3611

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*

At surface 770' FSL & 990' FEL; Unit "P"

At top prod. interval reported below (SAME)

At total depth (SAME)

14. PERMIT NO.

DATE ISSUED

4/9/97

12. COUNTY OR PARISH

Eddy County

13. STATE

NM

15. DATE SPUDDED

7/24/97

16. DATE T.D. REACHED

7/29/97

17. DATE COMPL. (Ready to prod.)

8/8/97

18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*

K.B. 3511', D.F. 3510', G.L. 3492'

19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD

2750'

21. PLUG, BACK T.D., MD & TVD

2704'

22. IF MULTIPLE COMPL., HOW MANY*

NA

23. INTERVALS

DRILLED BY

ROTARY TOOLS

X

CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*

San Andres 1663'-2519'

25. WAS DIRECTIONAL SURVEY

MADE

No

26. TYPE ELECTRIC AND OTHER LOGS RUN

LDT/CNL/DLL/MSFL/GR; CBL

27. WAS WELL CORED

No

28.

CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
8-5/8" J-55	24#	1187'	12-1/4"	surf; 350 sxs lite & 200 sxs "C"	NA
5-1/2" J-55	15.5#	2749'	7-7/8"	surf; 250 sxs lite C & 250 sxs "C"	NA

29.

LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2-7/8"	2160'	(OET)

30.

TUBING RECORD

31. PERFORATION RECORD (Interval, size and number)

1663'-1801' USA (4.40" EHD holes)

1984'-2084' ALPHA (3.40" EHD holes)

2160'-2218" "A" (5.40" EHD holes)

2244'-2340" "B" (10.40" EHD holes)

2344'-2401" "C" (3.40" EHD holes)

2432'-2519" "D" (5.40" EHD holes)

32. ACID SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
1663'-2519'	2500 gals of 15% NeFe acid
1663'-2519'	180,000 gals gel water + 6000# 100 mesh
	Sand + 86,000# 20/40 Brady sand + 157,000#
	16/30 Brady Sand.

33.*

PRODUCTION

DATE FIRST PRODUCTION 8/24/97		PRODUCTIONS METHOD 1(Flowing, gas lift, pumping—size and type of pump) Pumping (2-1/2" x 2" x 12' RWTC Pump)					WELL STATUS (Producing or shut-in) Producing	
DATE OF TEST 9/22/97	HOURS TESTED 24	CHOKE SIZE	PROD'N FOR TEST PERIOD →	OIL-BBL. 25	GAS-MCF. 10	WATER-BBL. 830		GAS-OIL RATIO 1000/1
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL-BBL. 25	GAS-MCF. 10	WATER-BBL. 830		OIL GRAVITY-API (CORR.) 38°	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

Vented (To be connected)

TEST WITNESSED BY

Danny Hokett

35. LIST OF ATTACHMENTS

Logs, Deviation Surveys

36. I hereby certify that the foregoing and attached information is complete and correct as determined from

Crystal Thornton

SIGNED

Crystal Thornton

TITLE ENGINEERING TECHNICIAN

DATE October 2, 1997

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

DLM

DISTRIBUTED

11-597

Analysis: 24190

Water Analysis Report from Baker Petrolite

Summary of Mixing Waters		
Sample Number	133534	112098
Company	DEVON ENERGY	DEVON ENERGY
Lease	HAWK 8	HAWK "8"
Well	WELL # 3 <i>yeso</i>	BATTERY <i>SAN ANDRES</i>
Sample Location	WELLHEAD	FWKO
Anions (mg/L)		
Chloride	106,253	99,569
Bicarbonate	573	497
Carbonate	0.00	0.00
Sulfate	3,912	4,489
Phosphate	0.00	0.00
Borate	0.00	0.00
Silicate	0.00	0.00
Cations (mg/L)		
Sodium	67,918	63,725
Magnesium	369	509
Calcium	1,749	1,770
Strontium	36.0	49.0
Barium	0.06	0.10
Iron	48.0	0.40
Potassium	523	269
Aluminum	0.00	0.00
Chromium	0.00	0.00
Copper	0.00	0.00
Lead	0.00	0.00
Manganese	0.00	0.00
Nickel	0.00	0.00
Anion/Cation Ratio	1.00	1.00
TDS (mg/L)	181,381	170,877
Density (g/cm)	1.12	1.11
Sampling Date	10/26/99	7/28/99
Account Manager	CURRY PRUIT	CURRY PRUIT
Analyst	JOANNA RAGAN	JOANNA RAGAN
Analysis Date		8/4/99
pH at time of sampling	5.90	7.90
pH at time of analysis		
pH used in Calculations	5.90	7.90

Analysis: 24190

Water Analysis Report from Baker Petrolite

Mixes at 80°F and 0 psi

Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl												
Mix Waters		CO ₂	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
133534	112098	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
100%	0%	5.52	-0.31		-0.20		-0.18		-0.21		0.13	0.01
90%	10%	4.90	-0.27		-0.19		-0.17		-0.18		0.17	0.01
80%	20%	4.30	-0.22		-0.18		-0.16		-0.16		0.20	0.01
70%	30%	3.70	-0.17		-0.17		-0.16		-0.14		0.23	0.02
60%	40%	3.10	-0.10		-0.17		-0.15		-0.12		0.26	0.02
50%	50%	2.51	-0.01		-0.16		-0.14		-0.10		0.29	0.02
40%	60%	1.92	0.09	7.5	-0.15		-0.14		-0.08		0.32	0.02
30%	70%	1.34	0.24	16.9	-0.15		-0.13		-0.06		0.35	0.03
20%	80%	0.78	0.46	26.8	-0.14		-0.13		-0.04		0.38	0.03
10%	90%	0.27	0.89	37.5	-0.14		-0.12		-0.02		0.40	0.03
0%	100%	0.05	1.51	48.8	-0.13		-0.12		0.00	0.18	0.43	0.03

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

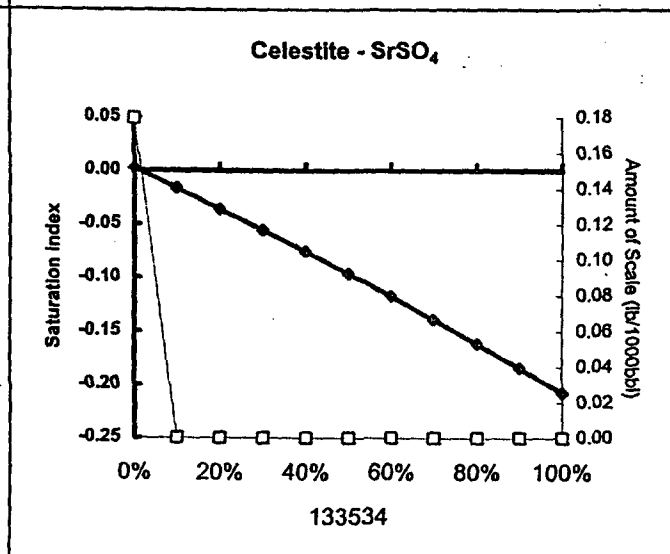
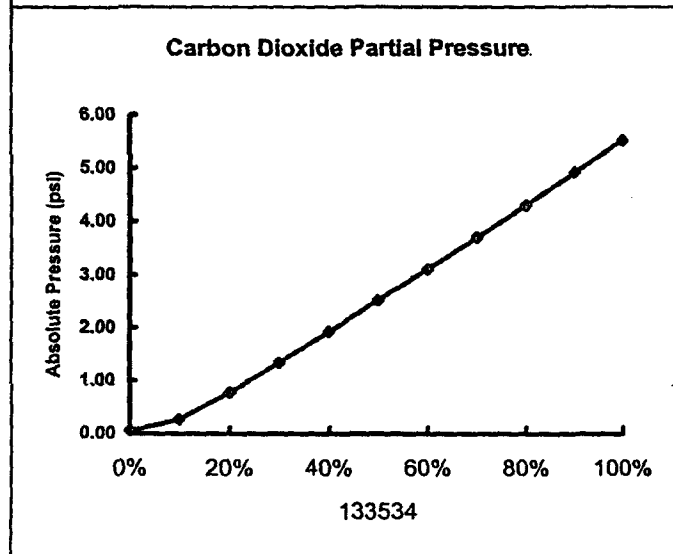
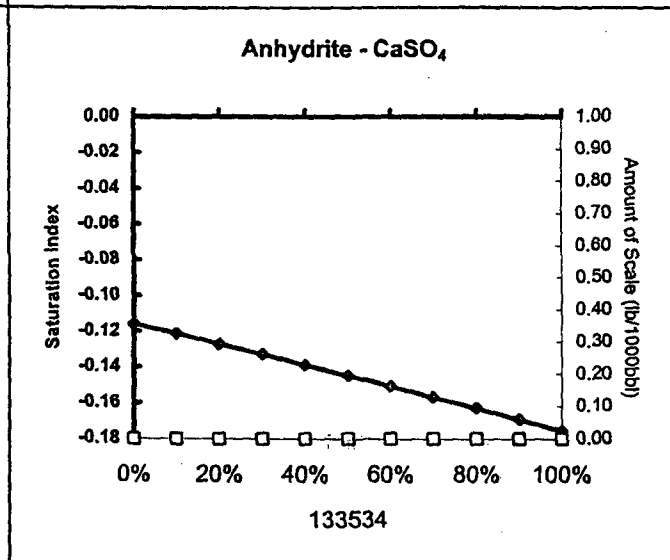
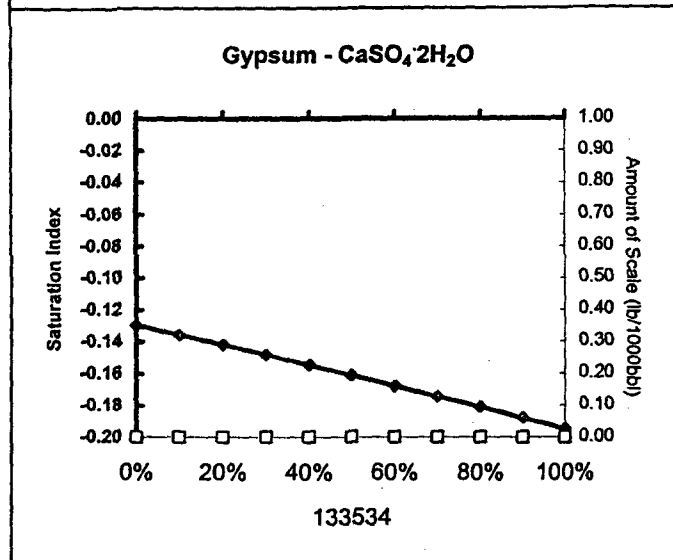
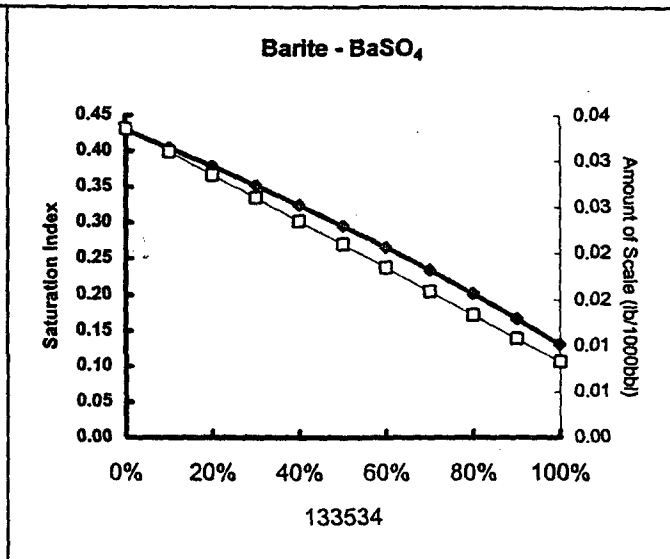
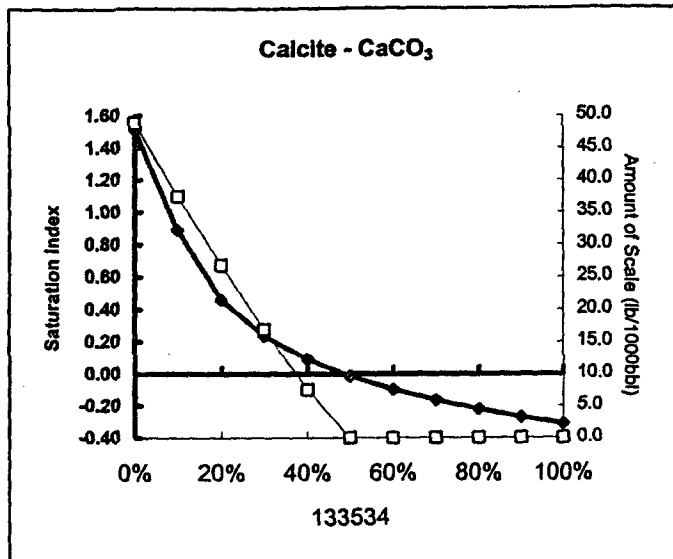
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Mixture Predictions from Baker-Petrolite

133534 with 112098 at 80°F and 0 psi

Analysis: 24190



Analysis: 24190

Water Analysis Report from Baker Petrolite

Mixes at 100°F and 0 psi

Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl

Mix Waters		CO ₂	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
133534	112098	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
100%	0%	6.73	-0.22		-0.27		-0.19		-0.24		-0.08	
90%	10%	5.99	-0.18		-0.27		-0.18		-0.22		-0.04	
80%	20%	5.25	-0.13		-0.26		-0.18		-0.19		-0.01	
70%	30%	4.52	-0.07		-0.25		-0.17		-0.17		0.03	0.00
60%	40%	3.80	-0.00		-0.25		-0.16		-0.15		0.06	0.01
50%	50%	3.08	0.08	7.2	-0.24		-0.16		-0.13		0.09	0.01
40%	60%	2.37	0.18	15.2	-0.23		-0.15		-0.11		0.12	0.01
30%	70%	1.67	0.32	23.8	-0.22		-0.14		-0.09		0.15	0.01
20%	80%	0.99	0.53	32.8	-0.22		-0.14		-0.07		0.17	0.02
10%	90%	0.40	0.89	42.5	-0.21		-0.13		-0.05		0.20	0.02
0%	100%	0.11	1.37	53.0	-0.20		-0.12		-0.03		0.22	0.02

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

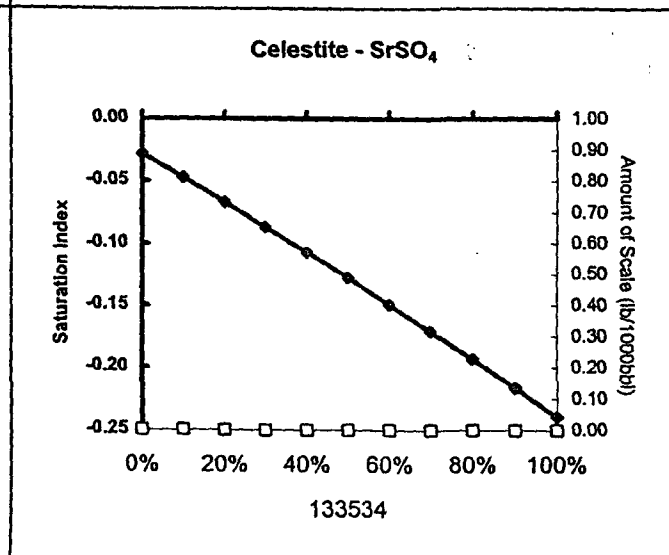
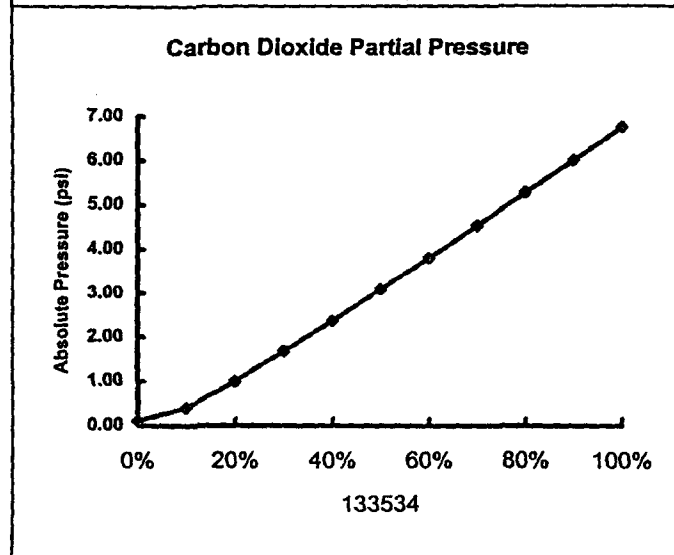
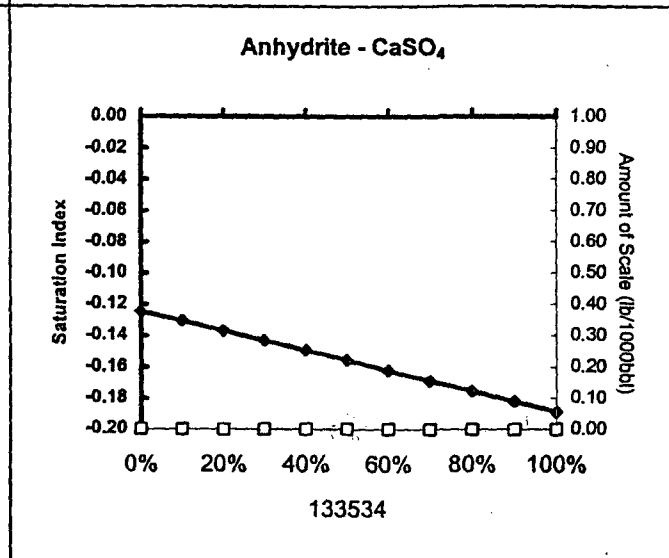
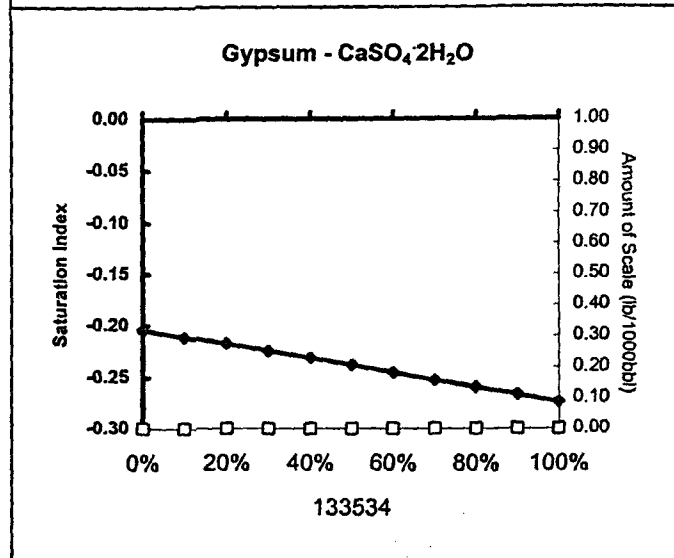
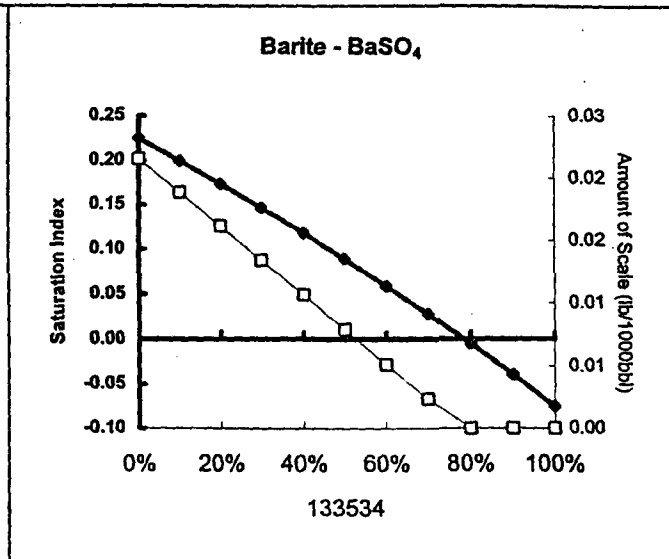
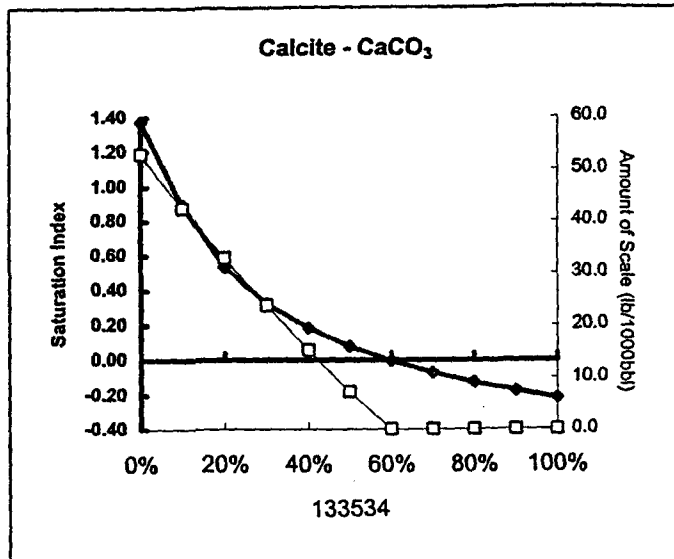
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Mixture Predictions from Baker-Petrolite

133534 with 112098 at 100°F and 0 psi

Analysis: 24190



Analysis: 24190

Water Analysis Report from Baker Petrolite

Mixes at 120°F and 0 psi

Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl

Mix Waters		CO ₂	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
133534	112098	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
100%	0%	7.93	-0.12		-0.34		-0.18		-0.26		-0.26	
90%	10%	7.06	-0.08		-0.33		-0.17		-0.24		-0.22	
80%	20%	6.20	-0.03		-0.33		-0.16		-0.21		-0.19	
70%	30%	5.34	0.02	2.7	-0.32		-0.16		-0.19		-0.15	
60%	40%	4.49	0.09	9.2	-0.31		-0.15		-0.17		-0.12	
50%	50%	3.65	0.17	16.1	-0.30		-0.14		-0.15		-0.09	
40%	60%	2.83	0.27	23.3	-0.30		-0.13		-0.13		-0.06	
30%	70%	2.01	0.41	31.0	-0.29		-0.13		-0.11		-0.03	
20%	80%	1.24	0.60	39.2	-0.28		-0.12		-0.09		-0.01	
10%	90%	0.58	0.90	47.9	-0.27		-0.11		-0.07		0.02	0.00
0%	100%	0.20	1.26	57.4	-0.27		-0.11		-0.05		0.04	0.01

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

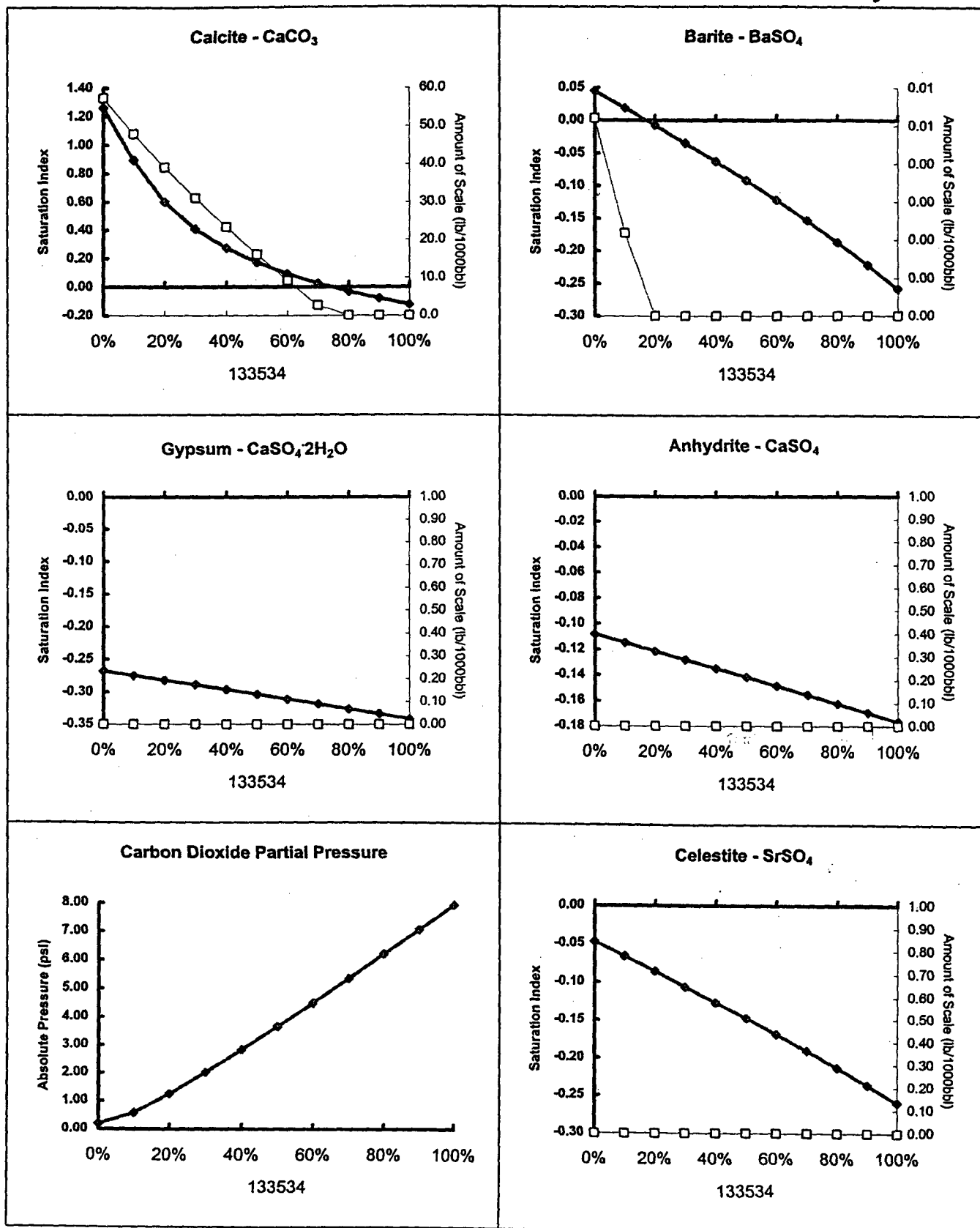
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Mixture Predictions from Baker-Petrolite

133534 with 112098 at 120°F and 0 psi

Analysis: 24190



Analysis: 24190

Water Analysis Report from Baker Petrolite

Mixes at 140°F and 0 psi

Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl

Mix Waters		CO ₂	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
133534	112098	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
100%	0%	9.05	-0.02		-0.40		-0.14		-0.27		-0.42	
90%	10%	8.07	0.02	2.7	-0.39		-0.13		-0.25		-0.38	
80%	20%	7.09	0.07	8.0	-0.38		-0.13		-0.22		-0.35	
70%	30%	6.13	0.13	13.5	-0.38		-0.12		-0.20		-0.31	
60%	40%	5.17	0.19	19.3	-0.37		-0.11		-0.18		-0.28	
50%	50%	4.22	0.27	25.4	-0.36		-0.11		-0.16		-0.25	
40%	60%	3.29	0.37	31.9	-0.35		-0.10		-0.14		-0.22	
30%	70%	2.38	0.49	38.7	-0.34		-0.09		-0.12		-0.19	
20%	80%	1.53	0.66	46.0	-0.34		-0.08		-0.10		-0.17	
10%	90%	0.80	0.90	53.8	-0.33		-0.08		-0.08		-0.14	
0%	100%	0.34	1.18	62.3	-0.32		-0.07		-0.06		-0.11	

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

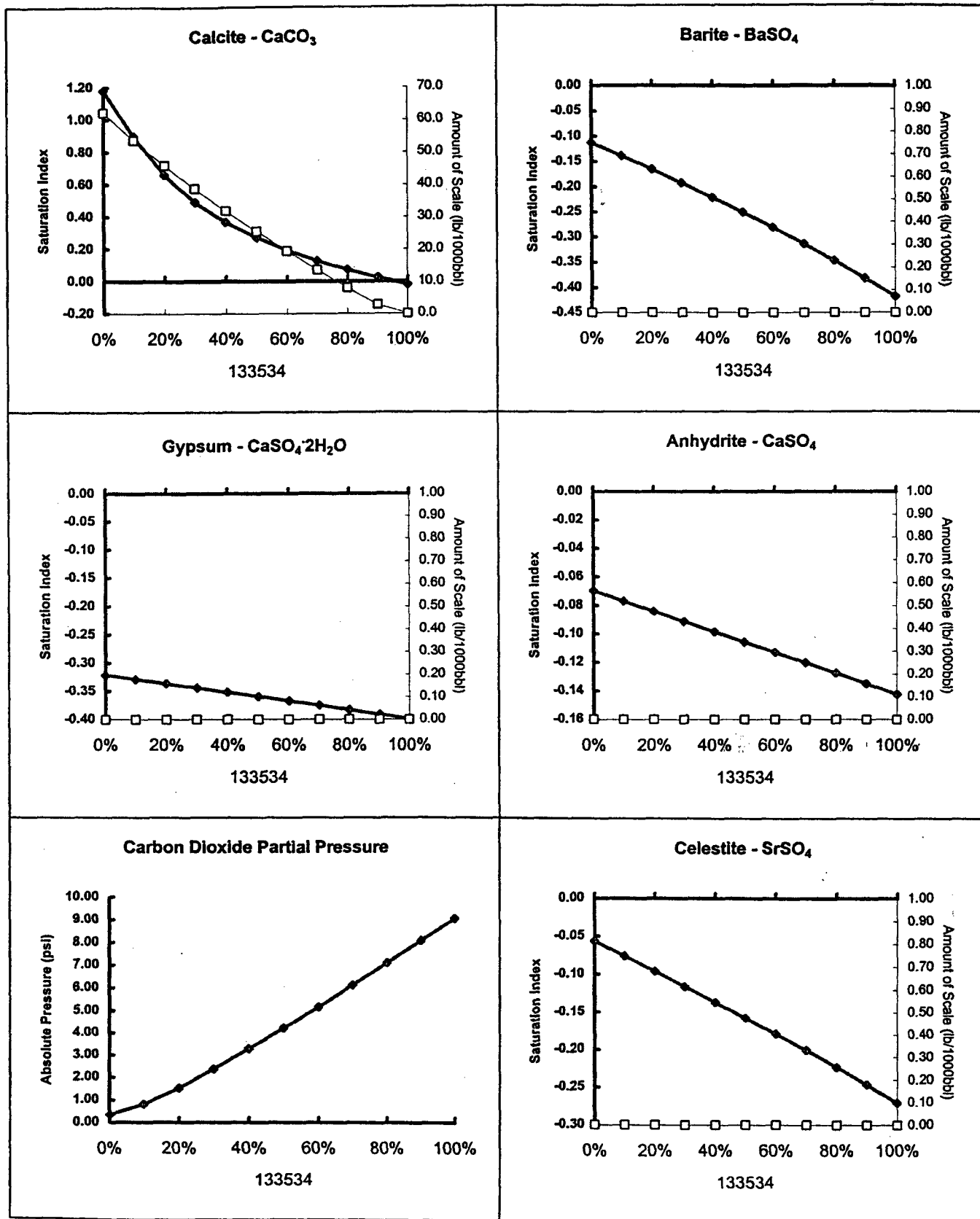
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Mixture Predictions from Baker-Petrolite

133534 with 112098 at 140°F and 0 psi

Analysis: 24190



SEP-17-96 TUE 12 03 Laboratory Services

P. 02

*Mobile Analytical Laboratories*LABORATORIES IN ODESSA, GIDDINGS & STACY DAM
WEST UNIVERSITY AND WESTOVER STREET

P.O. BOX 89210

ODESSA, TEXAS 79769-0210

PHONE 337-4744

FAX 337-4781

SEPTEMBER 16, 1996

MR. ROLLAND W. PERRY
LABORATORY SERVICES
1331 TASKER DR.
HOBBS, NEW MEXICO 88240

DEAR MR. PERRY:


THE FOLLOWING ARE THE RESULTS OF THE SEVEN OIL SAMPLES FOR SULFUR
CONTENT AND GRAVITY, SAMPLED 09/14/96, RECEIVED 09/15/96,
LAB NOS. 1483-1489:

	SULFUR	API GRAVITY @ 60 °F	SPECIFIC GRAVITY @ 60 °F
LAB NO. 1483: DEVON HAWK #8-1	1.347 %wt	31.3	0.8691
LAB NO. 1484: DEVON HAWK #8-3	0.684 %wt	41.3	0.8188
LAB NO. 1485: DEVON HAWK #8-11	0.700 %wt	35.1	0.8492
LAB NO. 1486: DEVON HAWK #8-4	0.643 %wt	37.4	0.8380
SAN ANDRES			
LAB NO. 1487: DEVON HAWK #8-5	0.609 %wt	39.5	0.8275
LAB NO. 1488: DEVON WEST RED LAKE	0.690 %wt	39.0	0.8299
LAB NO. 1489: DEVON HONDO FED	0.522 %wt	38.2	0.8338

TEST METHOD: SULFUR ASTM D-4294

WE APPRECIATE THE OPPORTUNITY TO WORK WITH YOU ON THESE TESTS. IF YOU
HAVE ANY QUESTIONS OR REQUIRE ANY FURTHER INFORMATION, PLEASE FEEL
FREE TO CONTACT ME AT ANY TIME.

SINCERELY,


STEPHEN REID
SR/dt

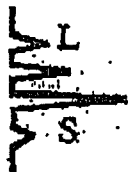
DEC-15-99 WED

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Laboratory Ser

ices

P. 02

**Laboratory Services, Inc.**

4016 Fiesta Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

SULFUR IN CRUDE OIL

Devon Energy
P. O. Box 240
Artesia, New Mexico 88211-0250

Dec 15, 1999

YESO OIL Samples

Total Sulfur	API Gravity @ 60° F	Specific Gravity @ 60° F
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Hawk 8-3	0.4118 wt. %	42.6	0.8128
Eagle 83.9	0.4382 wt. %	37.3	0.8383
Logan 35-9	0.4752 wt. %	41.8	0.8165
Logan 35-14	0.4430 wt. %	41.8	0.8165

Thank You,
Rolland Perry