

DHC 2/28/00

**devon**  
ENERGY CORPORATION

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

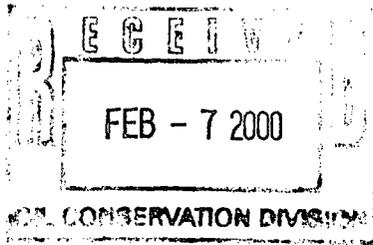
Telephone 405/235-3611  
FAX 405/552-4550

February 4, 2000

**Certified Mail No. Z 068 589 775**

2658

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 8 P Federal #11  
Section P-8-18S-27E  
API #30-015-29027  
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 Ernie Buttross at (405)-235-3611, Ext. 4509.

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

Form C-107-A  
Revised August 1999

OIL CONSERVATION DIVISION

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

APPROVAL PROCESS:

Administrative  Hearing

EXISTING WELLBORE

YES  NO

APPLICATION FOR DOWNHOLE COMMINGLING

Operator Devon Energy Corporation (Nevada) Address 20 N. Broadway, Suite 1500, Oklahoma City OK 73102-8260  
Well No. 11 Unit Ltr. - Sec - Twp - Rge P - 8-18S-27E County Eddy  
Lease 6137 Well No. 19132 Unit Ltr. - Sec - Twp - Rge 30-015-29027 Spacing Unit Lease Types: (check 1 or more)  
OGRID NO. 6137 Property Code 19132 API NO. 30-015-29027 Federal  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)	1293'-2140'		To be perforated 2850'-3150'
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°		38.3°
7. Producing or Shut-In?	Producing		Awaiting perms
Production Marginal? (yes or no)	Yes		Expected to be marginal
<ul style="list-style-type: none"> <li>If Shut-In, give date and oil/gas/water rates of last production</li> </ul> Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data	Date: N/A Rates:	Date: Rates:	Date: N/A Rates:
	Date: 12/6/99 Rates: 8 BOPD, 27 MCFGPD, 19 BWPD	Date: Rates:	Date: N/A Rates: N/A
8. Fixed Percentage Allocation Formula -% for each zone (total of %'s to equal 100%)	Oil: 41 % Gas: 41 %	Oil: % Gas: %	Oil: 59 % Gas: 59 %

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  No  
If not, have all working, overriding, and royalty interests been notified by certified mail?  Yes  No
11. Will cross-flow occur?  Yes  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?  Yes  No
13. Will the value of production be decreased by commingling?  Yes  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.  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 Tonja Rutelonis TITLE Engineering Technician DATE 2/4/00

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**

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

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

AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number <b>30-015-29027</b>	Pool Code <b>51300</b>	Pool Name <b>Red Lake (O-GB-SA) 1/2 Red Lake; Glorieta-Veso</b>
Property Code <b>19132</b>	Property Name <b>Crane Federal Hawk "8P" Federal</b>	Well Number <b>-2- 11</b>
OGRID No. <b>6137</b>	Operator Name <b>Devon Energy Corporation (Nevada)</b>	Elevation <b>3454'</b>

**Surface Location**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>P</b>	<b>B</b>	<b>18 S</b>	<b>27 E</b>		<b>890</b>	<b>South</b>	<b>940</b>	<b>East</b>	<b>Eddy</b>

**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 <b>40</b>	Joint or Infill	Consolidation Code	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**

	<p><b>OPERATOR CERTIFICATION</b></p> <p><i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i></p> <p><i>E.L. Buttross, Jr.</i> Signature <b>E.L. Buttross, Jr.</b> Printed Name <b>District Engineer</b> Title <b>May 23, 1996</b> Date</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p><i>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.</i></p> <p><b>March 20, 1996</b> Date Surveyed</p> <p>Signature &amp; Seal of Professional Surveyor <i>Garr L. Jones</i></p> <p><b>W.O. No. 6093</b></p> <p>Certificate No. <b>Garr L. Jones 7977</b></p> <p><b>BASIN SURVEYS</b></p>

# Hawk 8 P Federal #11

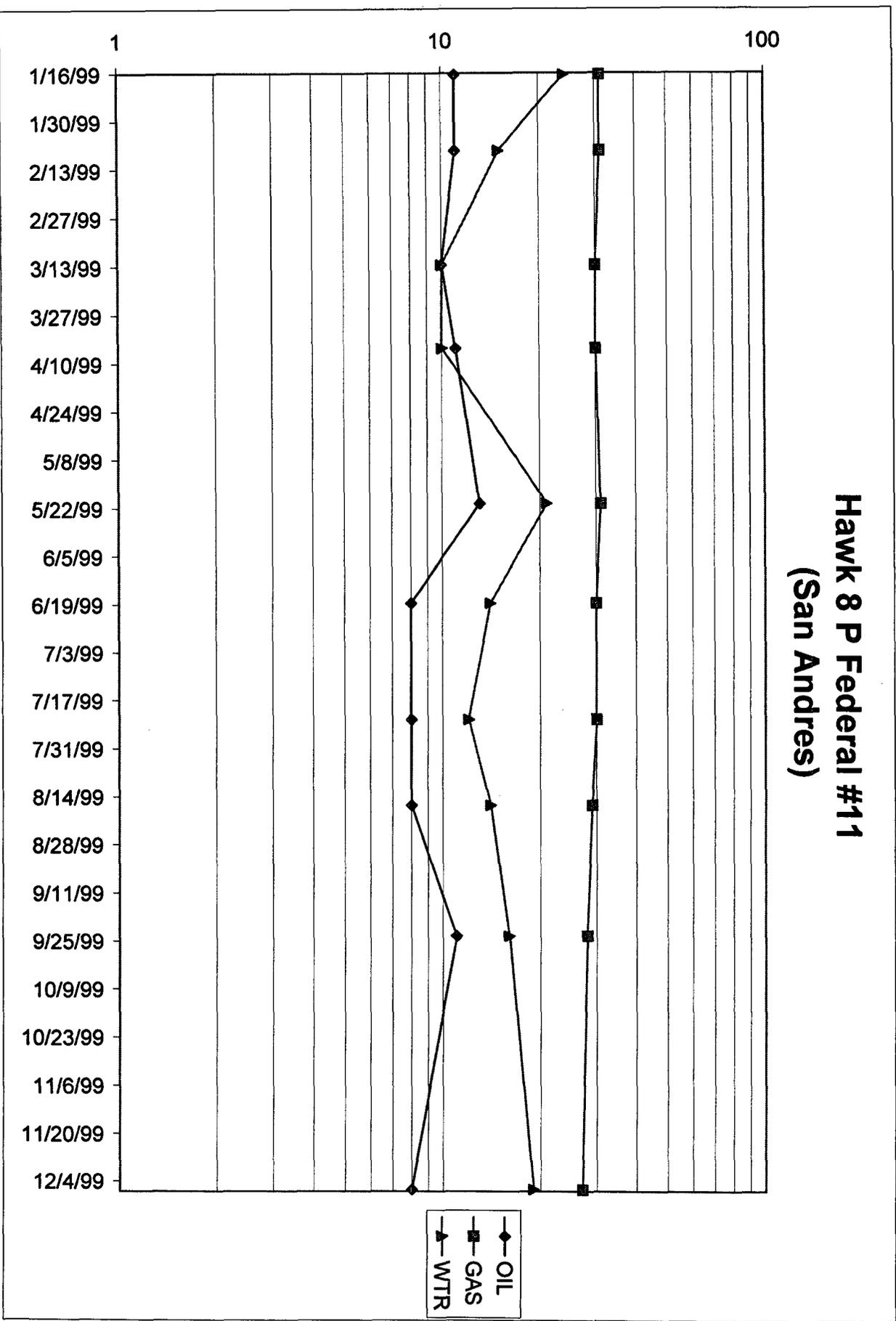
## Allocation Formula

<u>Well Name</u>	<u>Producing Formation</u>	<u>*Daily Production Test 3-month Average</u>	<u>% of Total</u>
Kaiser B #6	Red Lake (Glor-Yeso)	13 BO/52 MCF/78 BW	59 %
Hawk 8 P Federal #11	Red Lake (Q-GB-SA)	9 BO/28 MCF/16 BW	41 %

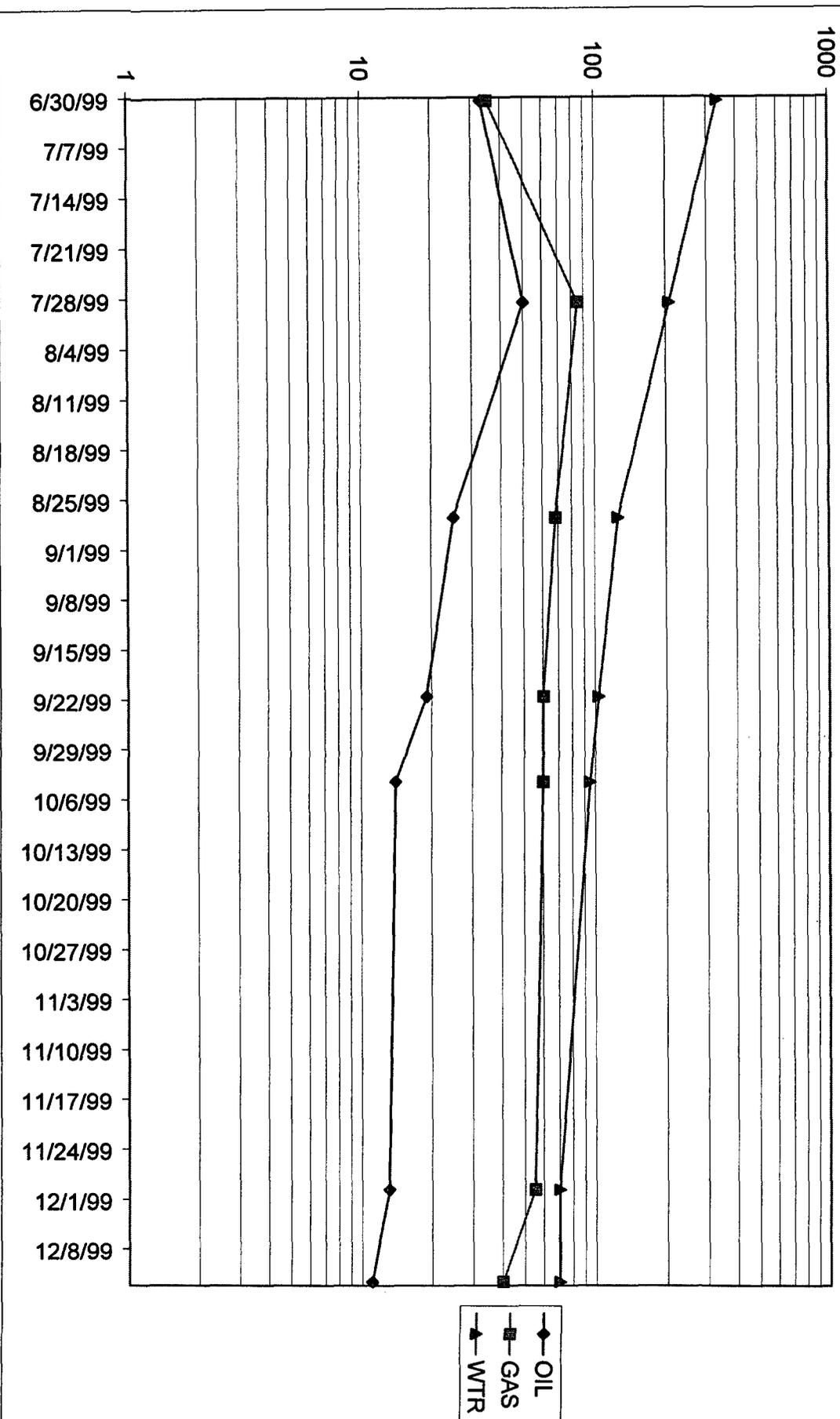
\* From attached production plots

The above production test represents stable production from a San Andres producer (Hawk 8 P Federal #11) and a Yeso producer (Kaiser B #6). We believe these rates of production represent an acceptable means to allocate production. **We have previously received approval for downhole commingling in these fields utilizing a similar allocation method.**

# Hawk 8 P Federal #11 (San Andres)



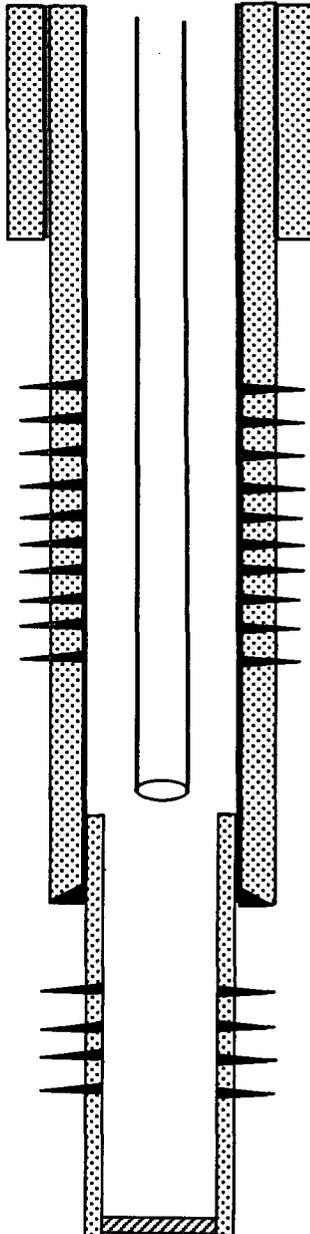
# Kaiser B #6 (Yeso)



# DEVON ENERGY CORPORATION - WELLBORE SCHEMATIC

WELL NAME: Hawk 8 P Federal #11		FIELD: Red Lake	
LOCATION: 890' FSL & 940' FEL, Sec. 8-18S-27E		COUNTY: Eddy	STATE: NM
ELEVATION: GL = 3454"		SPUD DATE: 8/8/96	COMP DATE: 9/7/96
API#: 30-015-29027	PREPARED BY: T. Rutelonis		DATE: 9/21/99

	DEPTH	SIZE	WEIGHT	GRADE	THREAD	HOLE SIZE
CASING:	0' - 1096'	8-5/8"	24#	J-55		12-1/4"
CASING:	0' - 2346'	5 1/2"	15.5#	J-55		7-7/8"
LINER:	2250' - 4500'	4"	10.46#	J-55	FL4S	4-3/4"
TUBING:	0' - 2220'	2-7/8"				
TUBING:						



CURRENT       PROPOSED

OPERATOR: DEVON ENERGY CORPORATION

8-5/8" Casing, Set @ 1055' w/ 550 sxs cmt. TOC @ surface

**PREMIER PERFORATIONS:**

1293'-1300' (2 HOLES, .40")

(PERFS SQZ'D & TA'D)

**UPPER SAN ANDRES PERFORATIONS:**

1387'-1509' (3 HOLES, .40")

(PERFS SQZ'D & TA'D)

**SAN ANDRES PERFORATIONS:**

1646'-2140' (18 holes, .40", ALPHA, "A", "B", "C", & "D")

2-7/8" tbg w/ SN @ 2220'

TOL @ 2250'

5 1/2" 15.5# J-55 Casing Set @ 2346' w/ 450 sxs cmt. TOC @ surf.

**YESO PERFORATIONS:**

+2850'- +3150' (20 HOLES, .38")

TD @ 4500'

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

FORM APPROVED

(See other instructions on reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG\*

1a. TYPE OF WELL: OIL WELL  GAS WELL  DRY  Other

b. TYPE OF COMPLETION: NEW WELL  WORK OVER  DEEP EN  PLUG BACK  DIFF RESERV  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 890' FSL & 940' FEL Unit "P"  
At top prod. interval reported below (SAME)  
At total depth (SAME)

5. LEASE DESIGNATION AND SERIAL NO.  
NM-29273

6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
NA

7. UNIT AGREEMENT NAME  
NA

8. FARM OR LEASE NAME, WELL NO.  
Hawk "8P" Federal #11

9. API WELL NO.  
30-015-29027

10. FIELD AND POOL, OR WILDCAT  
Red Lake (Q-GB-SA)

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA  
"P" 8-T18S-R27E

14. PERMIT NO. DATE ISSUED 6/28/96

12. COUNTY OR PARISH Eddy County

13. STATE NM

15. DATE SPUNDED 8/8/96

16. DATE T.D. REACHED 8/12/96

17. DATE COMPL. (Ready to prod.) 9/7/96

18. ELEVATIONS (DF, RKB, RT, GR, ETC.)\*  
KB 3463'; GL 3454'; DF 3462'

19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD 2350'

21. PLUG. BACK T.D., MD & TVD 2302'

22. IF MULTIPLE COMPL., HOW MANY\* NA

23. INTERVALS DRILLED BY

ROTARY TOOLS I

CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\*  
Grayburg - San Andres 1293-2140'

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 FULLED
8-5/8" J-55	24#	1096'	12-1/4"	surf; 300 sbs 35/65 & 250 sbs "C"	NA
5-1/2" J-55	15.5#	2346'	7-7/8"	surf; 150 sbs 35/65 & 300 sbs "C"	NA

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	2167'	(OET)

31. PERFORATION RECORD (Interval, size and number)

1293-1300' PREMIER (2 .40" EHD holes)

1387-1509' U. SAN ANDRES (3 .40" EHD hole)

1646' ALPHA (1 .40" EHD holes)

1882-1891' "A" (3 .40" EHD holes)

1937-1938' "B" (3 .40" EHD holes)

2032-2058' "C" (5 .40" EHD holes)

2112-2140' "D" (6 .40" EHD holes)

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

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
1293-2140'	2500 gals of 15% NeFe acid
1293-2140'	1,000 gals PrePad + 2 drum Pro-Kem scale inhibitor + 180,000 gals gelled water + 6000# 100 mesh sand + 237,000# 20/40 Brady Sand

33.\* PRODUCTION

DATE FIRST PRODUCTION 9/14/96

PRODUCTIONS METHOD (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	HOURS TESTED	CHOKE SIZE	PROD'N FOR TEST PERIOD	OIL-BBL.	GAS-MCF.	WATER-BBL.	GAS-OIL RATIO
9/22/96	24			172	344	278	2000/1

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL-BBL.	GAS-MCF.	WATER-BBL.	OIL GRAVITY-API (CORR.)
			172	344	278	35

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

TEST WITNESSED BY  
Danny Hockett

35. LIST OF ATTACHMENTS  
Logs, Deviation Surveys

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

SIGNED *Diana M. Keys* DIANA KEYS  
TITLE ENGINEERING TECHNICIAN

DATE September 23, 1996

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

10-2-96 OK

## Water Analysis Report from Baker Petrolite

### Summary of Mixing Waters

Sample Number	133534	112098
Company	DEVON ENERGY	
Lease Well Sample Location	HAWK 8 WELL # 3 WELLHEAD  <i>yeso</i>	HAWK "8" BATTERY FWKO  <i>SAN ANDRES</i>
<b>Anions (mg/L)</b>		
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
<b>Cations (mg/L)</b>		
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	<b>1.00</b>	<b>1.00</b>
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

## 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 <sub>2</sub>	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> ·2H <sub>2</sub> O		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>	
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.

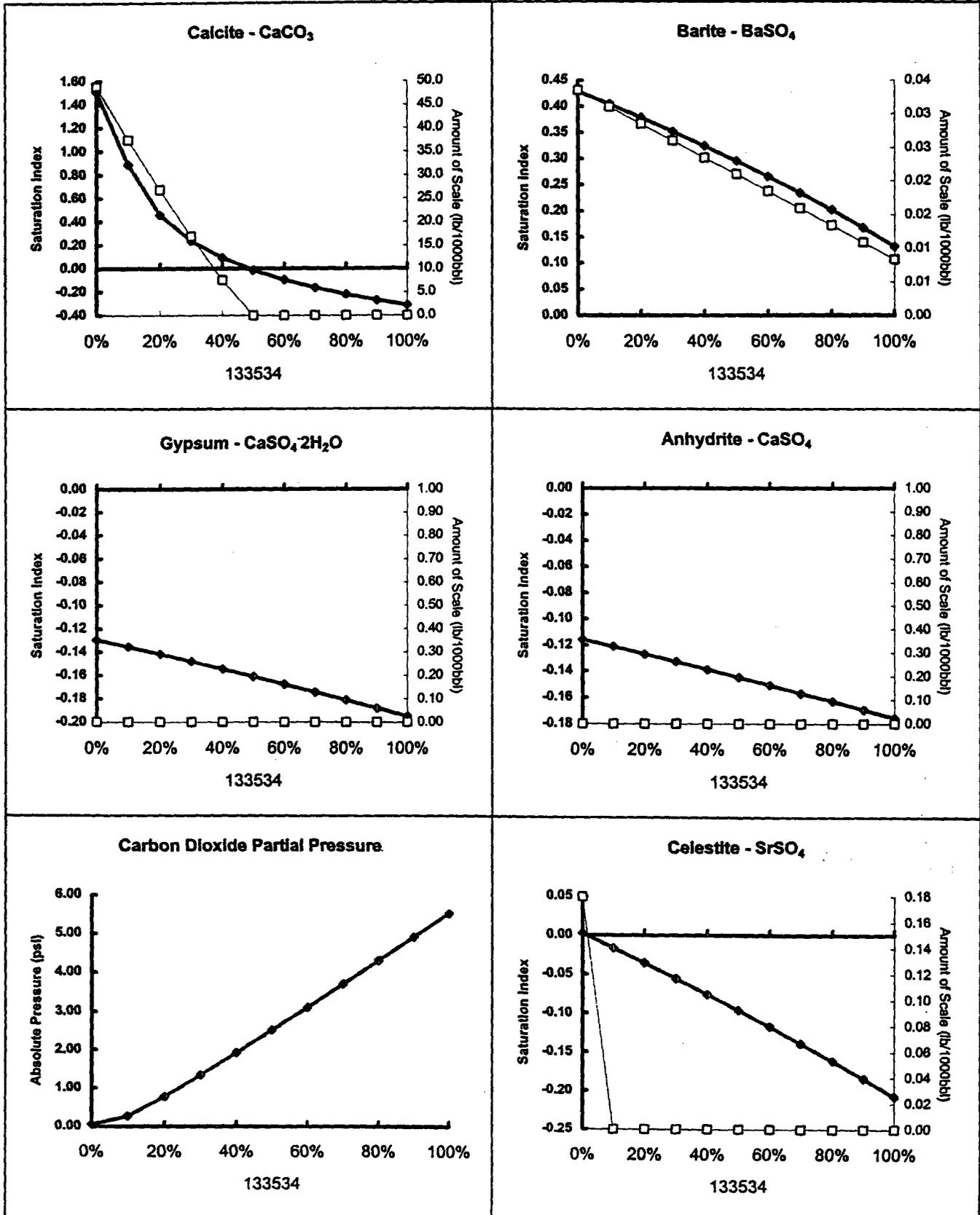
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO<sub>2</sub> 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



## Water Analysis Report from Baker Petrolite

Mixes at 100°F and 0 psi

<b>Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl</b>												
Mix Waters		CO <sub>2</sub>	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> ·2H <sub>2</sub> O		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>	
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.

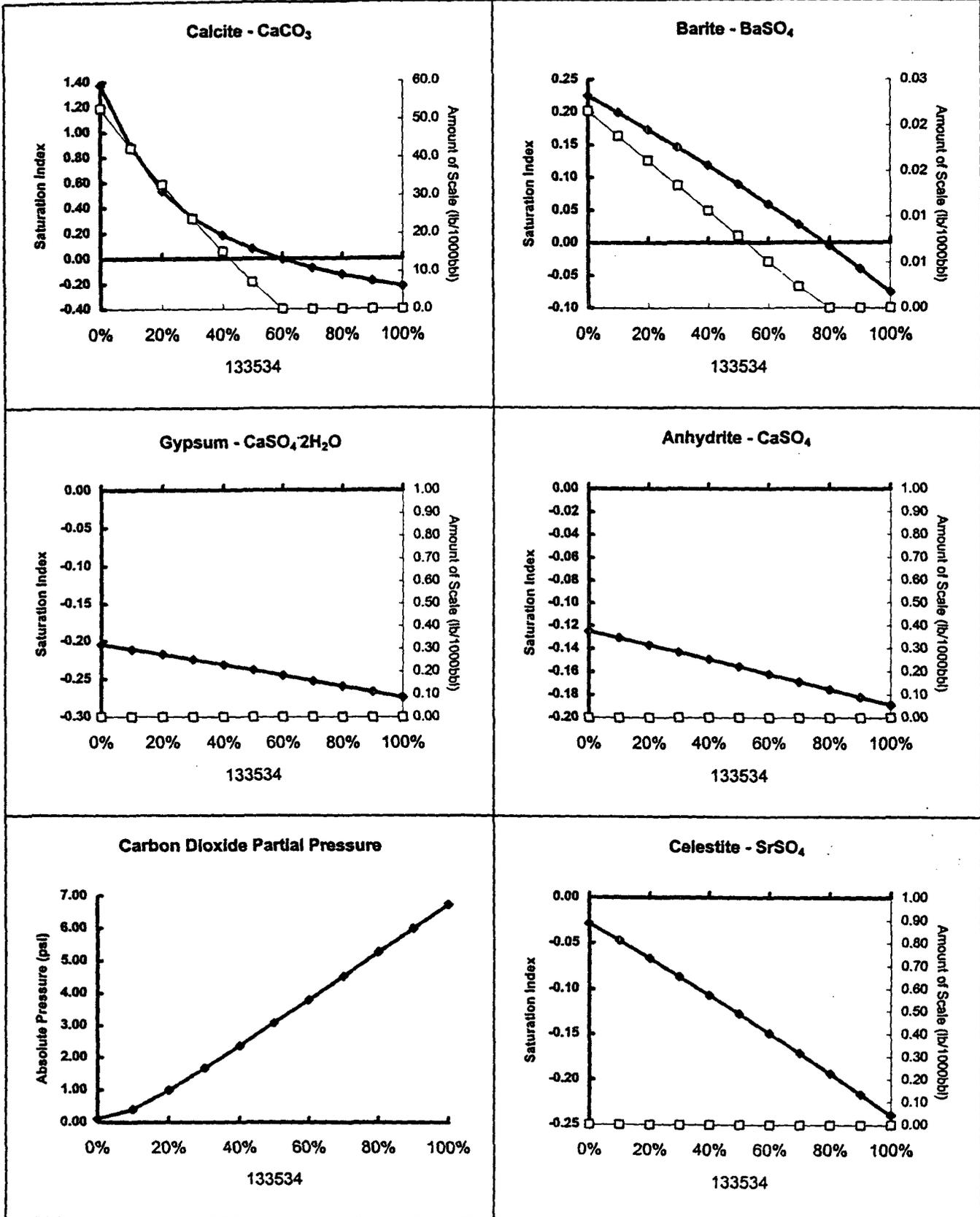
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO<sub>2</sub> 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



## Water Analysis Report from Baker Petrolite

Mixes at 120°F and 0 psi

<b>Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl</b>												
Mix Waters		CO <sub>2</sub>	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> ·2H <sub>2</sub> O		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>	
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.

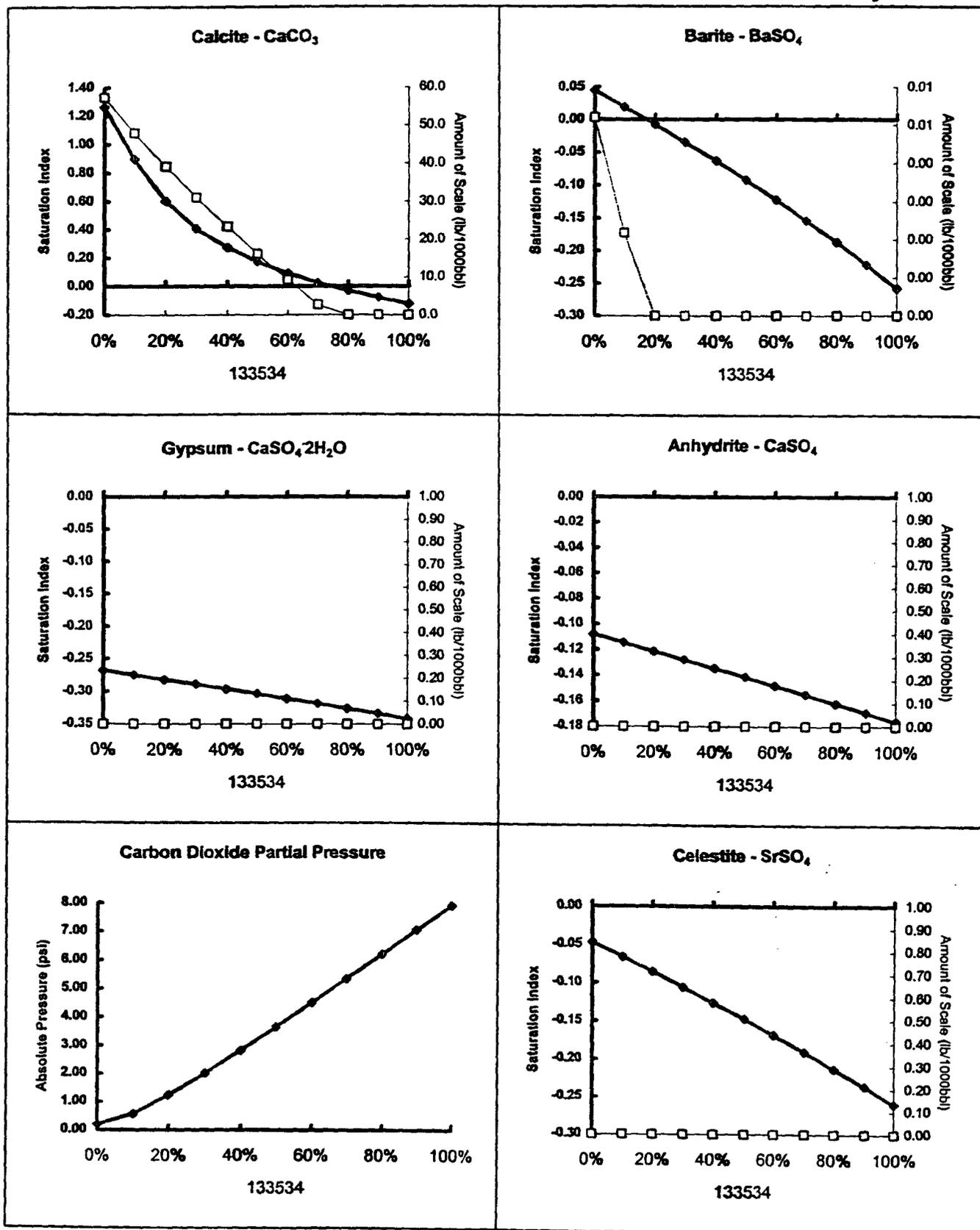
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO<sub>2</sub> 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



## 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 <sub>2</sub>	Calcite		Gypsum		Anhydrite		Celestite		Barite	
			CaCO <sub>3</sub>		CaSO <sub>4</sub> ·2H <sub>2</sub> O		CaSO <sub>4</sub>		SrSO <sub>4</sub>		BaSO <sub>4</sub>	
		psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
133534	112098											
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.

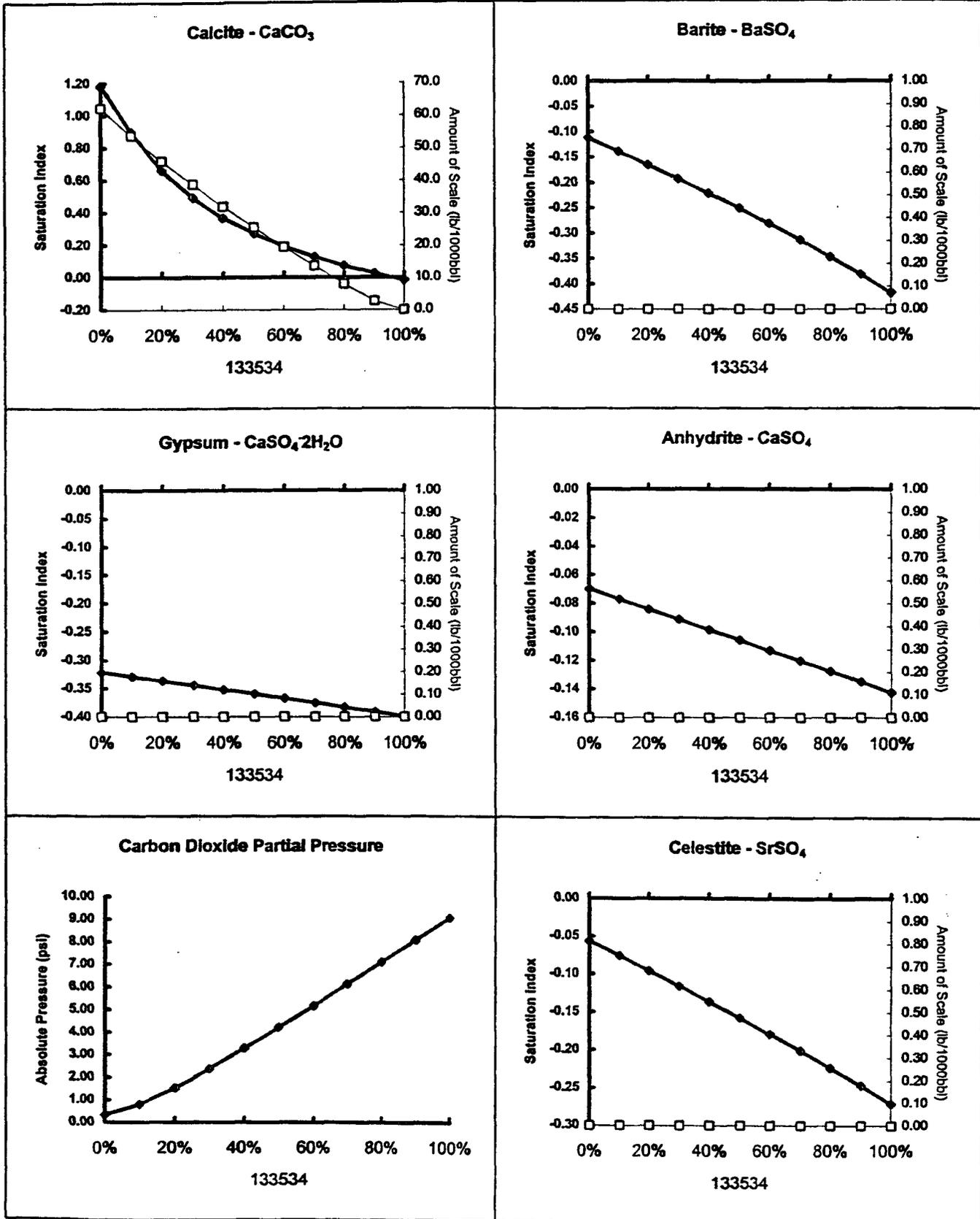
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO<sub>2</sub> 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





# Mobile Analytical Laboratories

LABORATORIES IN ODESSA, GIDDINGS & STACY DAM  
WEST UNIVERSITY AND WESTOVER STREET

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

P.O. BOX 69210  
ODESSA, TEXAS 79769-0210  
PHONE 337-4744  
FAX 337-4781

SEPTEMBER 16, 1996

DEAR MR. PERRY:

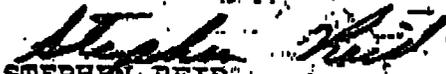
THE FOLLOWING ARE THE RESULTS OF THE SEVEN OIL SAMPLES FOR SULFUR  
CONTENT AND GRAVITY, SAMPLED 09/14/96, RECEIVED 09/15/96,  
LAB NOS. 1483-1489:

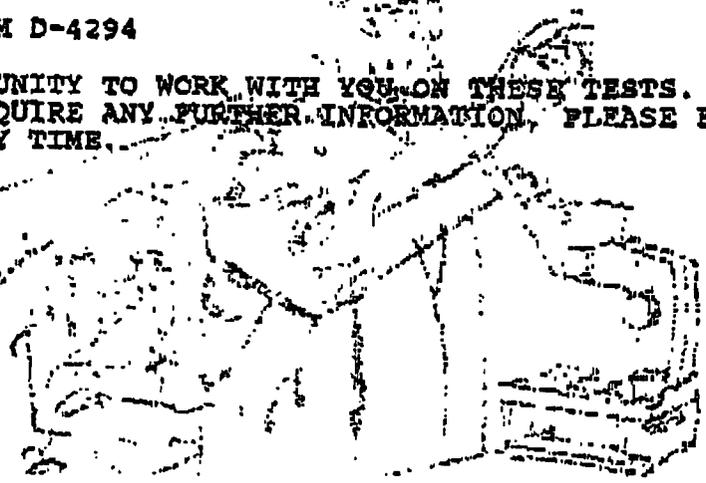
	SULFUR	API GRAVITY @ 60 °F	SPECIFIC GRAVITY @ 60 °F
LAB NO. 1483: DEVON HAWK #8-1	1.347 %wt	31.3	0.8691
LAB NO. 1484: DEVON HAWK #8-3	0.624 %wt	41.3	0.8188
LAB NO. 1485: DEVON HAWK #8-11	0.700 %wt	35.1	0.8492
LAB NO. 1486: DEVON HAWK #8-4	0.643 %wt	37.4	0.8380
<b>SAN ANDRES</b>			
LAB NO. 1487: DEVON 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-1-99 12:36 Laboratory Services P-02

ML  
S

Laboratory Services, Inc.

4018 Fiesta Drive  
Hobbs, New Mexico 88240  
Telephone: (505) 397-3713

SULFUR IN CRUDE OIL

Devon Energy  
P. O. Box 250  
Artesia, New Mexico 88211-0250

Dec 1, 1999

	Total Sulfur	API Gravity @ 60° F	Specific Gravity @ 60° F
Kaiser #1 Well (yeso)	0.4040 wt. %	38.3	0.8333
<del>Kaiser Main field</del>	<del>0.1895 wt. %</del>	<del>49.6</del>	<del>0.8241</del>

Thank You,  
Rolland Perry