

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

MAY 27 2004

FORM APPROVED
OMB NO. 1004-0135
Expires January 31, 2004

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry ☐ Other			5. Lease Serial No. NM90947		
b. Type of Completion: ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr., Other			6. If Indian, Allottee or Tribe Name		
2. Name of Operator Perenco LLC			7. Unit or CA Agreement Name and No. 93196-23342		
3. Address 6 Desta Drive, Suite 6800 Midland, TX 79705			8. Lease Name and Well No. Thames 31 Federal #1		
3a. Phone No. (include area code) 432 682-8553			9. API Well No. 30-015-33139		
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface 760' FSL and 760' FEL (UL P) At top prod. interval reported below 972' FSL and 760' FEL At total depth 985' FNL and 804' FEL (UL A)			10. Field and Pool, or Exploratory Wildcat		
Cottonwood Creek; Abo 97333			11. Sec., T., R., M., or Block and Survey or Area Sec. 31, T16S, R25E		
			12. County or Parish Eddy 13. State NM		
14. Date Spudded 01/26/04		15. Date T.D. Reached 2/24/04		16. Date Completed ☐ D & A ☒ Ready to Prod. 3/07/04	
17. Elevations (DF, RKB, RT, GL)* 3600' GL		18. Total Depth: MD 8345 TVD 5090			
19. Plug Back T.D.: MD 8345 TVD 5090		20. Depth Bridge Plug Set: MD 4656 TVD 4656			
21. Type Electric & Other Mechanical Logs Run (Submit copy of each) Mudlog, Platform Express, Microlog/HNGS			22. Was well cored? ☐ No ☒ Yes (Submit analysis) Was DST run ☒ No ☐ Yes (Submit report) Directional Survey? ☐ No ☒ Yes (Submit copy)		

Hole Size	Size/Grade	Wt.(#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17-1/2"	13-3/8"	48#	0	359'		448 Class C	108	Surface	Circ. 212 sx
12-1/4"	9-5/8"	40#	0	1103'		475 Class C	164	Surface	Circ. 26 sx
8-3/4"	7"	26#	0	5090'		487 Class C	175	2010'	CBL

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2-3/8"	4488'	4488'						

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) Abo	4904	4950	5091-8257' MD			Perforated liner
B)						
C)						
D)						

Depth Interval	Amount and Type of Material
5091-8257' MD	65000 gals 15% NEFE HCl acid

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity	Gas Gravity	Production Method
03/07/04	03/10/04	4	→	0	350	2	N/A	.681	Flowing
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	
16/64	1650			0	2100	0	0	SI Waiting on Pipeline	

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

OPERATOR: PERENCO LLC
WELL/LEASE: THAMES 31 FED. 1
COUNTY: EDDY

495-5067

STATE OF NEW MEXICO
DEVIATION REPORT

142	1	3,948	1/4
217	3/4	4,137	1/2
318	3/4	4,321	1
512	1 1/4	4,505	1 1/4
717	3/4		
1,166	1		
1,411	2 3/4		
1,505	2 3/4		
1,596	2 3/4		
1,689	2 1/4		
1,782	2 1/4		
1,876	2		
1,969	2		
2,062	2 1/4		
2,156	2		
2,248	2 3/4		
2,341	2 1/2		
2,435	2		
2,619	2 1/2		
2,713	2 1/2		
2,803	2		
2,897	2 3/4		
2,990	2 1/4		
3,084	2 3/4		
3,178	2 1/2		
3,301	1/2		
3,393	1/2		
3,487	1/2		
3,579	1/2		
3,765	1/4		

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MAY 27 2004
OCD-ARTESIA

By: Steve Moore

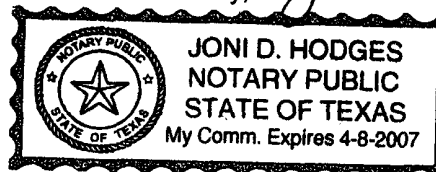
STATE OF TEXAS

COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on this 26th day of February, 2004, by Steve Moore on behalf of Patterson-UTI Drilling Company LP, LLLP.

Joni D. Hodges
Notary Public for Midland County, Texas

My Commission Expires: 4/08/2007



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

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

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

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

State of New Mexico

Energy, Minerals, and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102

Revised August 15, 2000

Submit to Appropriate District Office

State Lease - 4 copies

Fee Lease - 3 copies

MAY 27 2004

OFF-ARTESIA

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-33139	² Pool Code	³ Pool Name Wildcat Abo
⁴ Property Code 33196	⁵ Property Name THAMES "31" FEDERAL	⁶ Well Number 1
⁷ OGRID No. 218885	⁸ Operator Name EOG RESOURCES, INC.	⁹ Elevation 3600'

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
P	31	16 SOUTH	25 EAST, N.M.P.M.		760'	SOUTH	760'	EAST	EDDY

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
A	31	16 SOUTH	25 EAST, N.M.P.M.		985'	NORTH	804'	EAST	EDDY
¹² Dedicated Acres 320		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

NO ALLOWABLE WELL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁶ AS-DRILLED INFORMATION PROVIDED BY PERENCO LLC.	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <i>Robin S. McCarley</i> Signature Robin S. McCarley Printed Name Eng. Tech. Title 05/25/04 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. FEBRUARY 27, 2003 Date of Survey Signature and Seal of Professional Surveyor <i>V. L. Bezner</i> Certificate Number V. L. BEZNER R.P.S. #7920 JOB #86372-2 / 101 NE / J.C.P.
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30-015-33139

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Submit in duplicate to
appropriate district office.
See Rule 401 & Rule 1122

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-122
Revised October, 1999

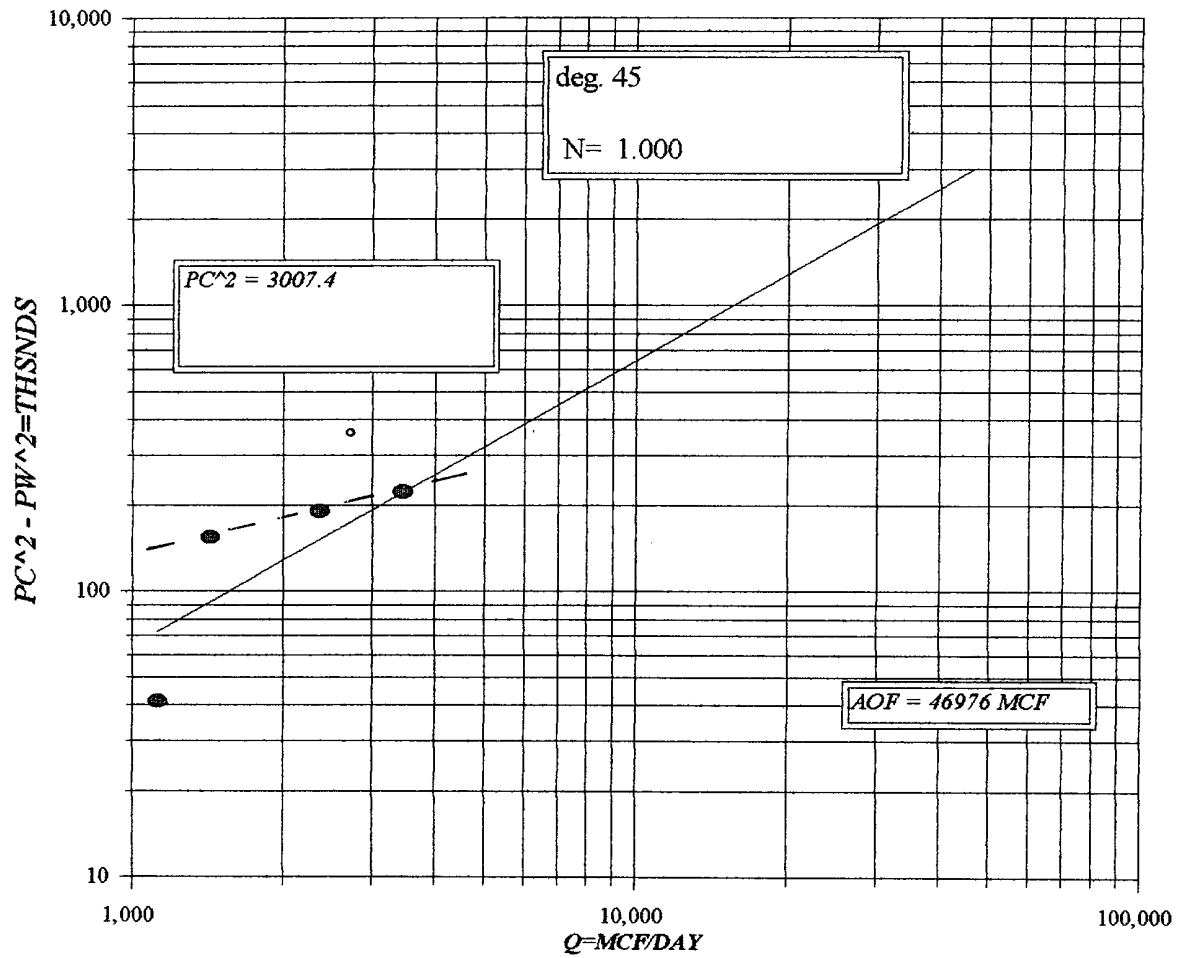
000-ARTESIA

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

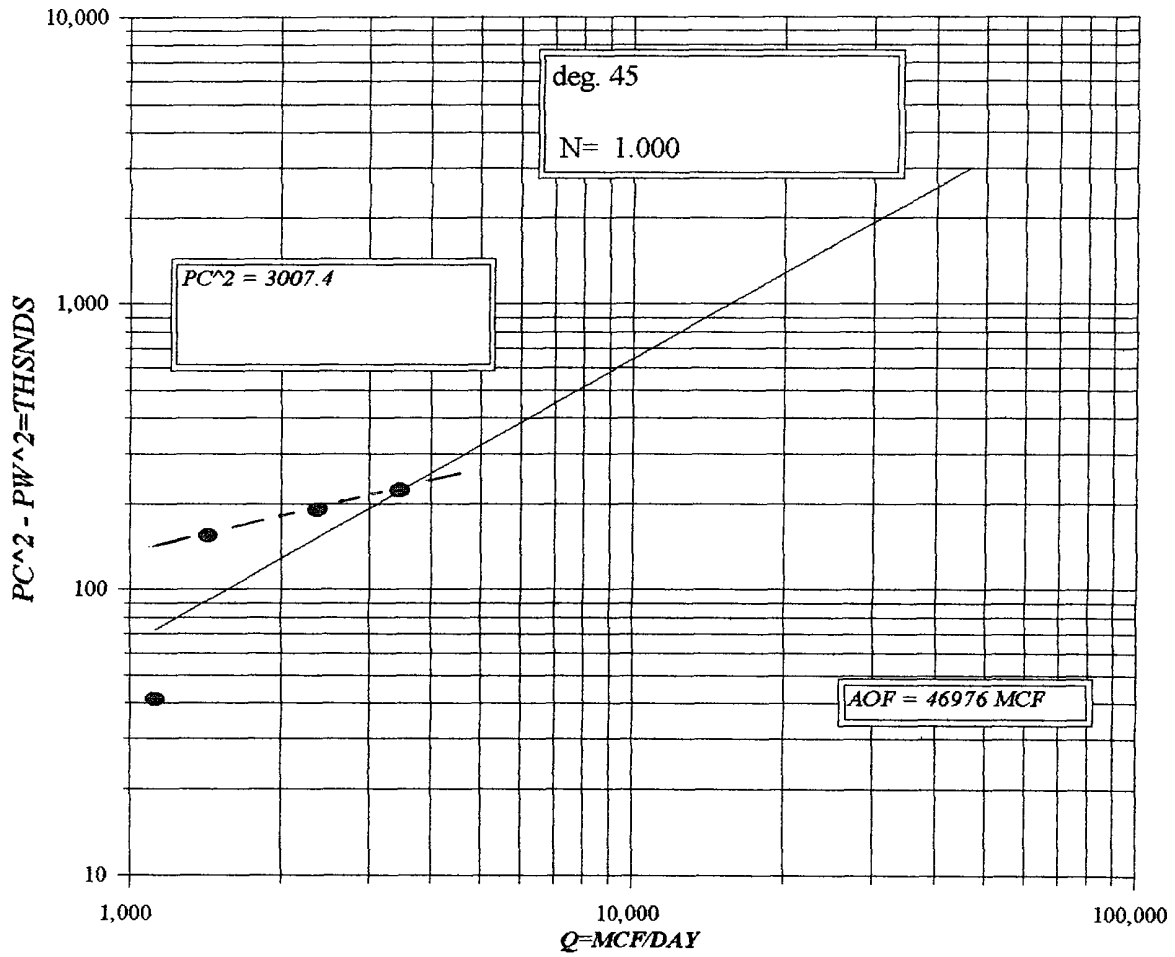
Operator Perenco LLC				PERENCO				Lease or Unit Name				THAMES FED. 31			
Type Test ☒ Initial ☐ Annual ☐ Special								Test Date 3-10-04		Well No. 1					
Completion Date 03/08/04		Total Depth 8345' MD		Plug Back TD 8343' MD		Elevation 3600'		Unit Ltr - Sec - TWP - Rge P Sec. 31, T16S R25E							
Csg. Size 7"	Wt. 26#	d	Set At 5090'	Perforations: Perforated liner From: 5091' MD To: 8297' MD				County EDDY							
Tbg. Size 2 3/8	Wt. 4.7	d	Set At 1.995	Perforations: From: To: Cottonwood Creek; N. 1/4 Sec. 31, T16S R25E				Abo							
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 4488				Formation Abo							
Producing Thru TBG		Reservoir Temp. °F 123.2 @ 4991		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		Connection Vented							
L 8032	H 4919	Gg 0.681	%CO ₂ 4.009	%N ₂ 0.65	%H ₂ S N/A	Prover N/A	Meter Run 4.026	Taps FLG							
FLOW DATA				TUBING DATA				CASING DATA							
No.	Prover Line Size	Orifice x Size	Press p.s.i.g.	Diff. h _w	Temp. °F	Press p.s.i.g.	Temp. °F	Press p.s.i.g.	Temp. °F	Duration of Flow					
SI						1721		PKR		48 HRS					
1	4 X	2.250	141	8.41	70	1700		"		1 HR					
2	4 X	2.250	141	13.69	73	1661		"		1 HR					
3	4 X	2.250	160	33.6	74	1623		"		1 HR					
4	4 X	2.250	181	64	73	1563		"		1 HR					
5															
RATE OF FLOW CALCULATIONS															
No.	COEFFICIENT (24 Hour)		$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress Factor F _{pv}	Rate of Flow Q, Mcfd							
1	25.64		36.01	154.2	0.9905	1.212	1.015	1,125							
2	25.64		45.95	154.2	0.9877	1.212	1.014	1,430							
3	25.64		76.29	173.2	0.9868	1.212	1.014	2,370							
4	25.64		111.48	194.2	0.9877	1.212	1.014	3,470							
5															
No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio				DRY GAS Mcf bbl.						
1	0.22	530	1.4	0.971	A.P. I. Gravity of Liquid Hydrocarbons				DRY Deg.						
2	0.22	533	1.41	0.972	Specific Gravity Separator Gas				0.681 XXXXXXXX						
3	0.25	534	1.41	0.972	Specific Gravity Flowing Fluid				XXXXXX						
4	0.28	533	1.41	0.972	Critical Pressure				* 686 P.S.I.A. P.S.I.A.						
5					Critical Temperature				* 378 R. R.						
P _c 1734.2 P _{c2} 3007.4															
No.	P _t ²	P _w	P _w ²	P _c ² - P _w ²	(1) $P_c^2 = \frac{13.538}{P_c^2 - P_w^2}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 13.538$										
1		1722.3	2966.4	41	$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 46.976$										
2		1689.3	2853.8	153.7											
3		1678.5	2817.3	190.2											
4		1668.9	2785.3	222.2											
5															
Absolute Open Flow 46,976 Mcfd @ 15.025					Angle of Slope (°): 45			Slope n: 1							
Remarks: Produced 12 bbl H2O - * Corrected to 4 % CO2															
Approved By Division:			Conducted By: Metering & Testing Serv., Inc.			Calculated By: BM			Checked By: BM						

0	COMPANY :PERENCO		LEASE : THAMES FED. 31		WELL NO. : 1		Pc = 1734.2		Pc2 = 3007.4 *	
	UNIT :		SECTION : 0		TOWNSHIP : 0				*	
	L :	8032	H :	4919	L/H :	2	G/GMIX :	0.681	Pt2 = 2935.1	Pw = 1722.3 *
	%CO2 :	4.009	%N2 :	0.65	H2S :		DATE :	3-10-04	2802.9	1689.3 *
	d :	1.995	Fr :	0.018231	GH :	3349.8	RANGE :	37	2677.2	1678.5 *
=====									2484.4	1668.9 *
									*	
	VOL 1 :	1125	PSIA 1 :	1713.2	RESV.TEMP		123.2	Pc2-Pw2=	41.0	Pw2 = 2966.4 *
	VOL 2 :	1430	PSIA 2 :	1674.2					153.7	2853.8 *
	VOL 3 :	2372	PSIA 3 :	1636.2	SHUT-IN PR=		1734.2		190.2	2817.3 *
	VOL 4 :	3470	PSIA 4 :	1576.2					222.2	2785.3 *
									*	
									n =	1.000 ✓
									*	
									Pc2/(Pc2-Pw2) =	73.280
										19.569
										15.815
										13.538 ✓
									*	
									*	
LINE	RATE 1		RATE 2		RATE 3		RATE 4			
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND		
1	QM	1.125	1.125	1.430	1.430	2.372	2.372	3.470	3.470	
2	TW	534	534	534	534	534	534	534	534	[Pc2/Pc2-Pw2]n = 73.280
3	Ts	583.2	583.2	583.2	583.2	583.2	583.2	583.2	583.2	19.569
4	T	558.6	558.6	558.6	558.6	558.6	558.6	558.6	558.6	15.815
	PR (est)	2.50		2.44		2.39		2.30		13.538 ✓
5	Z(est)	0.761	0.753	0.764	0.755	0.766	0.756	0.771	0.758	
6	TZ	425.1	420.4	426.6	421.5	428.1	422.4	430.8	423.6	AOF= Q 82.440
7	GH/TZ	7.881	7.969	7.853	7.947	7.824	7.931	7.776	7.909	27.984
8	eS	1.344	1.348	1.342	1.347	1.341	1.346	1.339	1.345	37.514
9	l-e-S	0.256	0.258	0.255	0.258	0.254	0.257	0.253	0.257	46.976 ✓
10	Pt	1713.2	1713.2	1674.2	1674.2	1636.2	1636.2	1576.2	1576.2	
11	Pt2 /1000	2935.1	2935.1	2802.9	2802.9	2677.2	2677.2	2484.4	2484.4	
12	Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	
13	Fc=FrTZ	7.750	7.664	7.777	7.685	7.805	7.700	7.853	7.722	
14	FcQm	8.72	8.62	11.12	10.99	18.51	18.26	27.25	26.80	
15	L/H(FcQm)	124.1	121.4	202.0	197.2	559.7	544.7	1212.6	1172.4	
16	Fw	31.75446	31.35473	51.51396	50.82158	142.3264	140.1404	306.7241	300.89198	
17	Pw2	2966.8	2966.4	2854.5	2853.8	2819.5	2817.3	2791.1	2785.3	
18	Ps2	3986.9	3999.5	3831.9	3844.5	3780.9	3793.1	3736.2	3746.9	
19	Ps	1996.7	1999.9	1957.5	1960.7	1944.5	1947.6	1932.9	1935.7	
20	P	1855.0	1856.5	1815.9	1817.5	1790.3	1791.9	1754.6	1755.9	
21	Pr	2.70	2.71	2.65	2.65	2.61	2.61	2.56	2.56	
22	Tr	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	
23	Z	0.753	0.752	0.755	0.755	0.756	0.756	0.758	0.758	FORM C122-D
=====										

5



PERENCO
THAMES FED. 31 # 1



**Laboratory Services, Inc.**

4016 Fiesta Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Metering & Testing Services Inc.
Attention: Mr. Tom Duncan
2807 West County Road
Hobbs, New Mexico 88240

SAMPLE:
IDENTIFICATION: Thames Federal 31 #1
COMPANY: Perenco LLC
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 3/10/04 12:00 pm
ANALYSIS DATE: 3/11/04
PRESSURE - PSIG 100
SAMPLE TEMP. °F 70
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: Al Lewis
ANALYSIS BY: Vickie Biggs

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)	0.000	
Nitrogen (N2)	0.650	
Carbon Dioxide (CO2)	4.009	
Methane (C1)	85.676	
Ethane (C2)	5.563	1.484
Propane (C3)	2.084	0.578
I-Butane (IC4)	0.306	0.100
N-Butane (NC4)	0.582	0.183
I-Pentane (IC5)	0.185	0.068
N-Pentane (NC5)	0.164	0.059
Hexane Plus (C6+)	0.781	0.339
	100.000	2.806
BTU/CU.FT. - DRY	1096	MOLECULAR WT. 19.7710
AT 14.650 DRY	1093	
AT 14.650 WET	1074	
AT 14.73 DRY	1099	
AT 14.73 WET	1080	
SPECIFIC GRAVITY -		
CALCULATED	0.681	
MEASURED		

Metering & Testing Data Sheet:

Company: Perenco
Well No: Thames Fed 31 #1
Test Date: March 10, 2004
Formation: _____
County: Eddy
State: New Mexico
Test Type: 4 Point

Meter Run Size: 4.026
Orifice Meter Range: 1500# x 100"
Tbg Size:
Csg Size:
Perfs:
Packer Depth:
TD / PBTD:

Phone No: (505) - 397 - 1631
Fax No: (505) - 397 - 0990

Running Totals:
Oil: _____
Water: _____

Laff. Hovi - 5110 - 8032

Csq 7" - 26 #

$T_{bg} : 2\frac{3}{8} - 0$

packed: @ 4488'

TB. 8345 - Vert H = 49/9'

$L = 8052$
 $H = 4919$

2.25 plate/coef 128.20

[illegible]