STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Mike Stogner
OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE 1-27-83

RE: Proposed MC _____
Proposed DHC X
Proposed NSL _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated Oct. 1, 1982

for the Petroleum Energy Inc. Navajo 20 #1 O-20-27-19
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve. Note, NSL is required for Miss. gas.

Yours truly,

Fred Kleinz

Frank -
Would you look this over for us.
Ben Jay

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF PETROLEUM ENERGY, INC.
FOR APPROVAL OF DOWN-HOLE COMMINGLING

(a) OPERATOR:
PETROLEUM ENERGY, INC.
P. O. BOX 2121
DURANGO, COLORADO 81301

CONTACT PARTY:
Jay D. Magness Telephone 303-259-3232

(b) LEASE NAME, WELL NUMBER, WELL LOCATION:
Operating Agreement - Navajo
Navajo 1-20
SW¼SE¼ Section 20, T27N, R19W
San Juan County, New Mexico

NAME OF POOLS TO BE COMMINGLED:
Big Gap Barker Creek 5589'-5594'; 5600'-5606'
Beautiful Mountain Mississippian 5815'-5890'

(c) PLAT OF AREA SHOWING DEDICATED ACREAGE:
A plat of the area showing the acreage dedicated to the well is attached hereto as Exhibit "A" and incorporated herein by reference.

OWNERSHIP OF OFFSETTING LEASES:
There are no offset leases or operators. The entire area affected is Navajo Tribal Land. Petroleum Energy, Inc., is the operator of the Service Area Lands shown on Exhibit "A" under the Operating Agreement with the Navajo Tribe.

(d) PRODUCTIVITY TEST:
A current twenty four (24) hour productivity test is not available. Bass Enterprises discontinued production in 1979, the Barker Creek formation was capable of producing five (5) barrels of oil per day. The Mississippian formation has just been open-hole completed, therefore no production.

(e) PRODUCTION DECLINE CURVE:
No production decline curve is available.

HISTORY:
Well 1-20 was originally completed by Bass Enterprises on 1-11-79 in the Barker Creek formation at 5589'-5594',

as described in Exhibit "B", attached hereto and incorporated herein by reference. Petroleum Energy, Inc., unsuccessfully re-worked the well in 1980, in an attempt to make an Organ Rock helium producer from 3711' to 3748'. Petroleum Energy, Inc., has now squeezed off all the Organ Rock perforations and re-opened it in both sections of the Barker Creek and the Mississippian, as indicated in (b) above.

It is anticipated that the Barker Creek formation will produce both oil and methane gas and that the Mississippian formation will produce oil and helium gas.

(f) ESTIMATED BOTTOM-HOLE PRESSURE:

The estimated bottom-hole pressures are as follows:

Barker Creek	#2800
Mississippian	#2900

The estimated bottom-hole pressures are based upon the data attached hereto as Exhibit "C", obtained from Well 1-5, Big Gap Barker Creek and Beautiful Mountain Mississippian formations.

(g) FLUID CHARACTERISTICS:

The fluids will be compatible in the well bore. There are no sour gases or contaminants in the area.

(h) VALUE OF COMMINGLED PRODUCTION:

No production will be lost by commingling the individual streams.

(i) ALLOCATION OF PRODUCTION:

As indicated in Paragraph (c) above, Petroleum Energy, Inc., is the Operator of the Navajo Tribal Lands on which Well 1-20 is located. The Navajo Tribe has established an Operating Committee to manage, monitor and oversee the activities of the Operator. The Committee consists of the Executive Director of the Division of Economic Development of the Navajo Nation, and two (2) other members knowledgable in oil and gas development and monitoring of such operations. The Operating Committee has the right of review and approval of Petroleum Energy, Inc., operations.

The Operating Agreement provides that there shall be no commingling of production from different zones without approval of the Operating Committee. See letter dated September 15, 1982, attached hereto as Exhibit "D", wherein the Operating Committee directs Petroleum Energy, Inc., to proceed with recompleting Well 1-20 as a Barker Creek oil well and as a Mississippian gas and oil well. The Operating Committee also directs Petroleum Energy, Inc., to test the production rates from the formations to

determine a reasonable basis for allocating the commingled production.

It is anticipated that a formula for allocation of production to the zones will be approved by the Operating Committee after Well 1-20 and other wells in the area have produced for a period of time and production data is gathered. The immediate goal of the Operating Committee and the Operator is to secure adequate helium production from the Operating Agreement Service Area Lands and from Petroleum Energy's leased lands to supply approximately 3.5 M.M.C.F. of helium bearing gas per day to the Navajo Helium Plant. Commingling the production from the Barker Creek and Mississippian formations will allow immediate production of helium gas at minimum drilling and completion costs. At the same time, there will be production of oil and methane gas from the Barker Creek zone. The end result of the commingling will be to satisfy the helium plant requirements and maximize revenues to the Navajo Nation and Petroleum Energy, Inc., from the sale of oil and gas.

(j) NOTIFICATION:

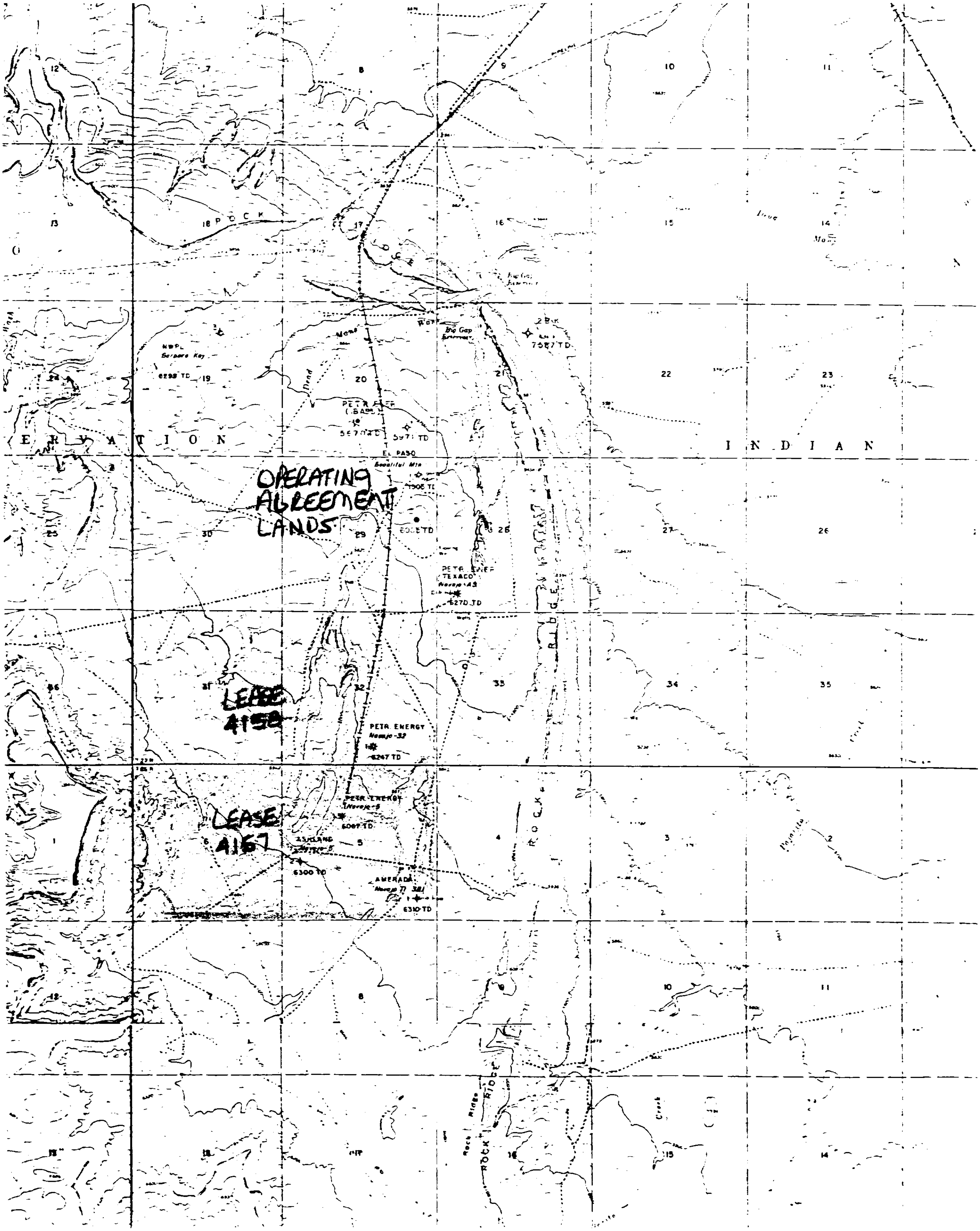
Attached hereto is an Affidavit of Mailing showing service of a copy of this Application For Approval of Down-Hole Commingling on the Minerals Management Service and on the Navajo Nation.

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

NAME: Jay D. Magness

TITLE: PETROLEUM ENERGY, INC.

DATE: September 29, 1982



OPERATING
AGREEMENT
LANDS
LEASE
4158
LEASE
4167
E R V A T I O N
I N D I A N
NWPL
6298 TD
7587 TD
PETR. CHIEF
5670 TD
5971 TD
EL PASO
Beautiful Mtn
6002 TD
PETR. CHIEF
TEXACO
Navajo-A3
6270 TD
PETR. ENERGY
Navajo-32
6247 TD
PETR. ENERGY
Navajo-5
5087 TD
ASHLAND
6300 TD
AMERADA
6310 TD
ROCK
RIDGE
Rock Ridge

NEW MEXICO-N
SAN JUAN CO.
UNNAMED (WFD)

Petroleum Information.
Corporation
A Subsidiary of A. C. Nielsen Company

Twp 27n-1 w
Section 20
sw se
1190 fsl 2510 fel

OPR Bass Enterprises Prod WELL 1 Navajo-20

El: 5720 KB

Log Tops:

Todilto	1286
Entrada	1300
Chinle	1800
DeChelly	2954
Organ Rock	3578
Supai	4044
Hermosa	4998
Akah	5390
Barker Creek	5570

DSTS & CORES

Crd 5570-5622, rec 52, no details released. DST 5570-5622, op 15, SI 120, op 120, SI 240, GTS in 17 min @ 260 MCFGPD, rec 427 O&G, 183 HO&GCM, 109 mdy swtr, 153 swtr, FP 178-260, 191-519, SIP 2291-1821, HP 3101-3074.

Spud 10-11-78 Comp 1-11-79

5670 TD

Csg: 13 3/8 @ 202 w/108
8 5/8 @ 1202 w/530
5 1/2 @ 5670 w/400

Perf 5589-94 w/2 pf. Acidized w/3500 gals. P 17 BO, 19 BW.

Prod Zone: Barker Creek 5589-94

Init Prod: IPP 22 BO, 46 BWPD, 60 MCFGPD

(RE-ISSUED CARD). Replaces temp card NM-N6-972220.

PI Base Map NMB-1A Contr: Brinkerhoff (BARKER CREEK DISCOVERY-NEW FIELD)

API 30-045-23004 NM-N16-R3-0840 FORM NO. 327

NEW MEXICO-N
SAN JUAN CO.
BIG GAP-
PENNSYLVANIAN (WSD)

Petroleum Information.
Corporation
A Subsidiary of A. C. Nielsen Company

Twp 27n-10w
Section 20
sw se
1190 fsl 2510 fel

OPR: Pet Energy WELL 1 Navajo-20

El: 5711 Gr

DSTS & CORES

OWWO. OTD 5670. (Csg: 13 3/8 @ 202 w/108; 8 5/8 @ 1202 w/530; 5 1/2 @ 5670 w/400. Log Tops: Organ Rock 3578, Akah 5390, Barker Crk 5570. Comp 1-11-79, IPP 22 BO, 46 BWPD, 60 MCFGPD. Prod Zone: Barker Creek 5589-94. Formerly Bass Enterprises Prod 1 Navajo-20)

No cores or tests.

Re-entered 8-6-80 Comp 8-16-80

5670 TD PB 3900

Csg

Perf 3757 w/2 pf & sqzd w/300. Perf 3622-25, 3690-91, 3711-19, 3724-30, 3738-48 w/2 pf. Acidized w/500 gals. Perf 3560 w/2 pf & sqzd w/100.

Prod Zone: Organ Rock 3622-3748 (gross)

Init Prod: IPF 200 MCFGPD, 45/64" ck, FTP 650.

POMCO Map NM-21
PI Base Map NMB-1A

(ORGAN ROCK SHALLOWER POOL DISCOVERY)
Big Gap-Pennsylvanian Field

Contr: not reported
API 30-045-23004 NM-N16-0890001-A FORM NO 327

EXHIBIT "B"

DRILL-STEM TESTS:

1-5 Barker Creek

DST No. 1 (Straddle Packer Test - PD - 5884')
5640' to 5719' (79') Barker Creek Zone.
Open 30 minutes fair blow, slid approximately 16'. Had to close tool and put on another joint, opened tool with a good blow, slid additional 5' to bottom. Had a good blow throughout. Shut-in 60 minutes, opened 60 minutes. Gas to surface (flammable) in 90 minutes TSTM. Shut-in 90 minutes.

Recovered 1050' GCM, 950' GCSW (20 bbls total)
Partial plugging during flow periods
Bottom packers were not holding.

Top Recorder @ 5616'. Temperature 140°F

Initial hydrostatic pressure. . . .	2761 psig
Final hydrostatic pressure.	2743 psig
Initial flow pressure (1)	613 psig
Final flow pressure (1)	706 psig
Initial flow pressure (2)	777 psig
Final flow pressure (2)	914 psig
Initial shut-in pressure.	2722 psig
Final shut-in pressure.	2716 psig

Middle Recorder @ 5713'. Temperature 140°F

Initial hydrostatic pressure. . . .	2818 psig
Final hydrostatic pressure.	2796 psig
Initial flow pressure (1)	656 psig
Final flow pressure (1)	753 psig
Initial flow pressure (2)	825 psig
Final flow pressure (2)	955 psig
Initial shut-in pressure.	2768 psig
Final shut-in pressure (2).	2764 psig

EXHIBIT "C"

Bottom Recorder @ 5880'. Temperature 140°F

Note: Packers did not hold

Initial hydrostatic pressure. . . .	2921 psig
Final hydrostatic pressure.	2896 psig
Initial flow pressure (1)	925 psig
Final flow pressure (1).	1200 psig
Initial flow pressure (2).	1009 psig
Final flow pressure (2).	1070 psig
Initial shut-in pressure	2830 psig
Final shut-in pressure	2809 psig

Sampler Data: Depth: 5612'

Pressure at surface: 630 psig

Recovery: 2/10 cubic ft. gas, 1950 cc. GC Muddy water

Res..059 ohms @ 70°F (water)

Res..039 ohms @ 70°F (mud)

Res..184 ohms @ 70°F (mud pit sample)

Note: Above data from corrected computed data.

Surface and bottom choke: 3/4"

FLUID SAMPLE DATA

Sampler Pressure 630 P.S.I.G. at Surface
Recovery: Cu. Ft. Gas 2/10
cc. Oil
cc. Water 1950 Gas cut muddy water
cc. Mud
Tot. Liquid cc. 1950
Gravity ° API @ °F.
Gas/Oil Ratio cu. ft./bbl.

	RESISTIVITY			CHLORIDE CONTENT
Recovery Water	.059	@	°F.	ppm
Recovery Mud	.039	@	°F.	ppm
Recovery Mud Filtrate		@	°F.	ppm
Mud Pit Sample	.184	@	°F.	ppm
Mud Pit Sample Filtrate		@	°F.	ppm

Mud Weight 9.3 vis 45 cp

Date 5-18-75 Ticket Number 876646
Kind of Job OPEN HOLE Halliburton District FARMINGTON
Tester MR. DAVIS Witness ???
Drilling Contractor LOFFLAND BROTHERS #12 BC S

EQUIPMENT & HOLE DATA

Formation Tested Barker Creek
Elevation 59' out Ft.
Net Productive Interval 5640' - 5719' Ft.
All Depths Measured From Rotary Kelly Bushing
Total Depth 5884' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 434' I.D. 2¼"
Drill Pipe Length 5171' I.D. 3.340"
Packer Depth(s) 5635' - 5640' - 5719' - 5724' Ft.
Depth Tester Valve 5612' Ft.

Cushion TYPE AMOUNT Depth Back Pres. Valve Ft. Surface Choke 3/4" ADJ. Bottom Choke 3/4"

Recovered 1050 Feet of Gas cut mud
Recovered 950 Feet of Gas cut salt water
Recovered Feet of
Recovered Feet of
Recovered Feet of

Mea. From Tester Valve

Remarks See production test data sheet.....

CHARTS INDICATE PARTIAL PLUGGING DURING FLOW PERIODS, BOTTOM PARKERS NOT HOLDING.....

TEMPERATURE	Gauge No. 2033 Depth: 5616' Ft.	Gauge No. 2032 Depth: 5713' Ft.	Gauge No. 5160 Depth: 5880' Ft.	TIME
	12 Hour Clock	24 Hour Clock	24 Hour Clock	Tool Opened 1450 A.M. P.M.
Est. °F.	Blanked Off -	Blanked Off -	Blanked Off -	Opened Bypass 1850 A.M. P.M.
Actual 140 °F.	Pressures	Pressures	Pressures	Reported Minutes / Computed Minutes

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		2746	2761	2818	2818		2921		
First Period Flow	Initial	239	613	318	656		925	———	———
	Final	729	706	766	753		1200	30	30
	Closed in	2709	2722	2778	2768		2830	60	59
Second Period Flow	Initial	742	777	792	825		1009	———	———
	Final	901	914	1002	955		1070	60	61
	Closed in	2709	2716	2778	2764		2809	90	90
Third Period Flow	Initial							———	———
	Final								
	Closed in								
Final Hydrostatic		2746	2743	2818	2796		2896	———	———

Legal Location Sec. - Twp. - Rng. 5 - 26N - 19W
Lease Name NAVAJO
Well No. 1-5
Test No. 1
Tested Interval 5640' - 5884'
Field Area WILDCAT
County SAN JUAN
State NEW MEXICO
Lease Owner/Company Name PETROLEUM ENERGY, INCORPORATED

FORM 181-RI—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 96671 10M 8/74

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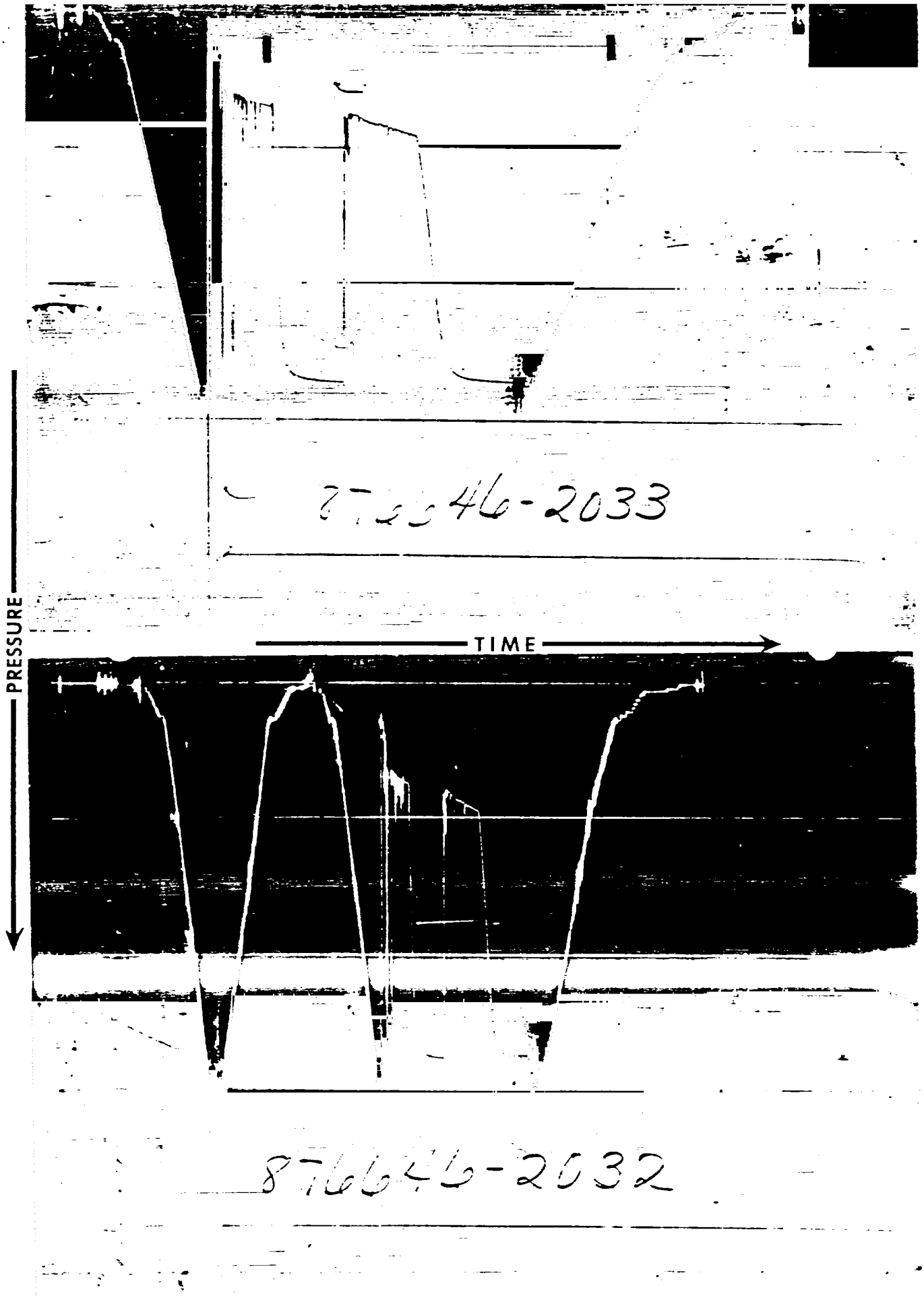
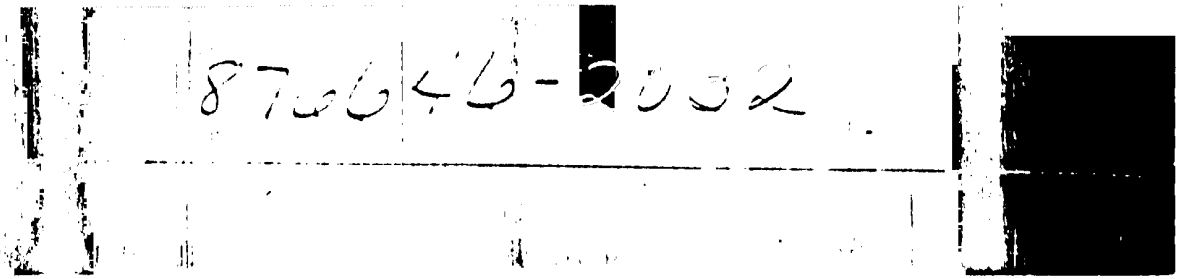


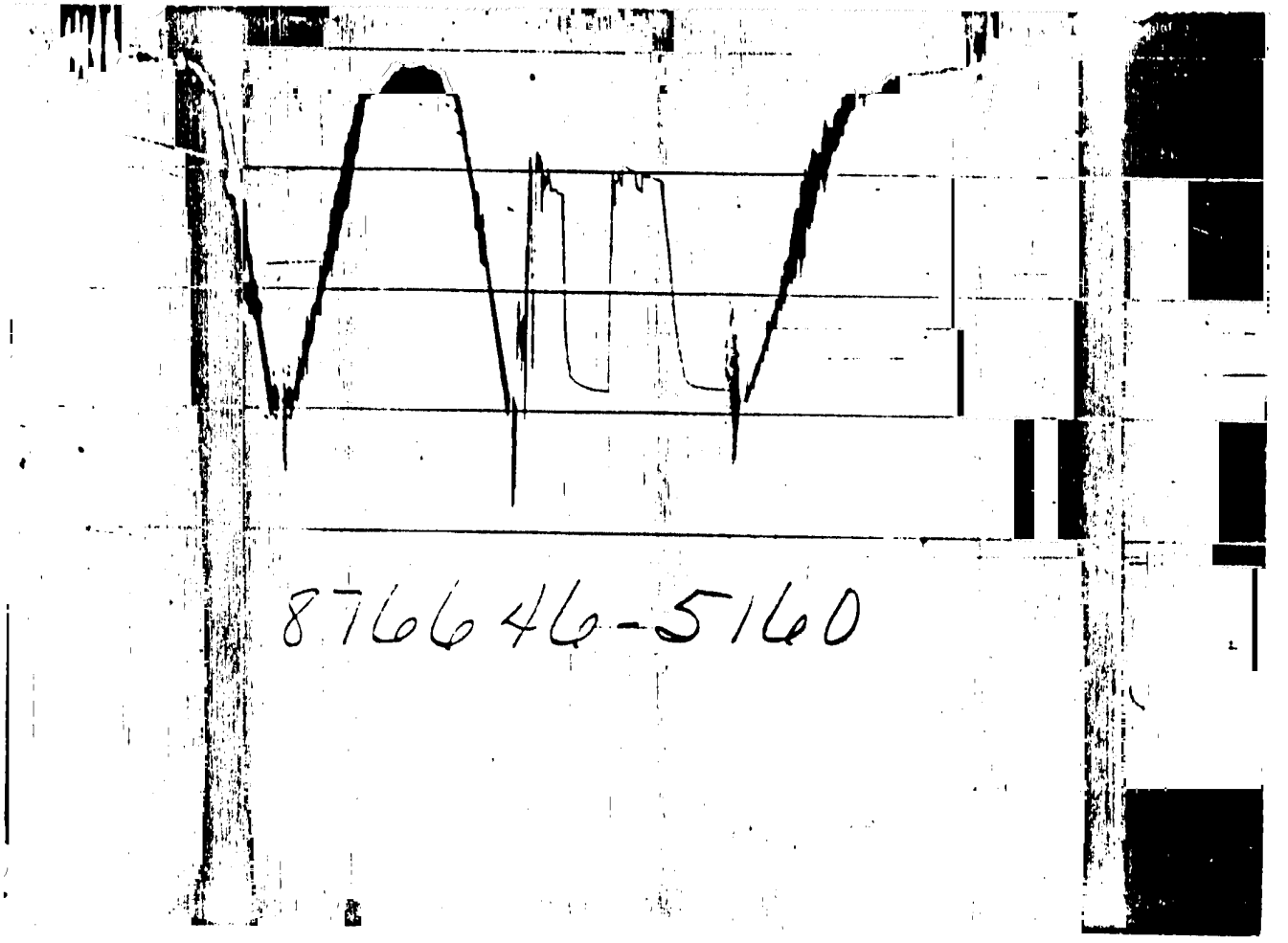
Each Horizontal Line Equal to 1000 p.s.i.



Each Horizontal Line Equal to 1000 p.s.i.

		Closed
Second Period	Flow	Initial
		Final
		Closed
Third Period	Flow	Initial
		Final
		Closed
Final Hydrostatic		

FORM 181-R1—PRINTED



	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	6"	2.50"	1.10'	
Water Cushion Valve				
Drill Pipe	4"	3.340"	5171'	
Drill Collars	6¼"	2.15"	434'	
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler	5"	2.75"	7'	
Hydro-Spring Tester	5"	.75"	4'	5512'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3"	4'	5516'
Hydraulic Jar	5"	1.75"	4'	
VR Safety Joint	5"	1"	2'	
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1.53"	5'	5535'
Distributor				
Packer Assembly	6 3/4"	1.53"	5'	5540'
Flush Joint Anchor	5 3/4"	2½"	43.68'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	5"	-	4'	5713'
Drill Collars	-	-	30'	
Anchor Pipe Safety Joint	5"	1"	2'	
Packer Assembly	6 3/4"	-	5'	5719'
Distributor				
Packer Assembly	6 3/4"	1.53"	5'	5724'
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	6¼"	2.25"	149'	
Flush Joint Anchor	5 3/4"	2½"	7'	
Blanked-Off B.T. Running Case	5 3/4"	3"	4'	5880'
Total Depth				5884'

EQUIPMENT DATA

Gauge No. 5160			Depth 5880'			Clock No. 9766			24 hour	Ticket No. 876646	
	First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.0000	925	.0000		1200	.0000	1009	.0000		1070					
1	.0172	916	.0100		1740*	.0370	1070**	.0200		1443					
2	.0343	1043	.0233		2423	.0706	972	.0401		1772					
3	.0515	1074	.0365		2628	.1042	1111	.0602		2200					
4	.0687	1166	.0498		2730	.1378	1032	.0803		2443					
5	.0858	1187	.0631		2755	.1714	1047	.1003		2649					
6	.1030	1200	.0764		2774	.2050	1070	.1204		2753					
7			.0897		2787			.1405		2777					
8			.1030		2800			.1605		2787					
9			.1163		2809			.1806		2794					
10			.1296		2815			.2007		2800					
11			.1428		2819			.2207		2802					
12			.1561		2823			.2408		2804					
13			.1694		2826			.2609		2806					
14			.1827		2828			.2809		2809					
15			.1960		2830			.3010		2809					
Reading Interval		5		4			10		6						Minute

Gauge No.			Depth			Clock No.			hour						
0															
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
Reading Interval															Minute

REMARKS: *Interval = 3 minutes **Interval = 11 minutes

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FORM 182-81—PRINTED IN U.S.A.

SPECIAL PRESSURE DATA

LITTLE'S 86673 75C 6/74

Gauge No.	2033	Depth	5616'	Clock No.	10445	12 hour	Ticket No.	876646

	First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.0000	613	.0000		706	.0000	777	.0000		914					
1	.0357	627	.0207		1496*	.0743	770**	.0403		1255					
2	.0713	660	.0484		2252	.1418	817	.0805		1725					
3	.1070	669	.0761		2564	.2094	836	.1208		2172					
4	.1427	681	.1037		2647	.2769	875	.1611		2486					
5	.1783	695	.1314		2672	.3445	888	.2013		2621					
6	.2140	706	.1591		2687	.4120	914	.2416		2667					
7			.1867		2696			.2819		2686					
8			.2144		2703			.3221		2696					
9			.2420		2707			.3624		2701					
10			.2697		2711			.4027		2707					
11			.2974		2713			.4429		2709					
12			.3250		2716			.4832		2712					
13			.3527		2718			.5235		2714					
14			.3803		2721			.5637		2716					
15			.4080		2722			.6040		2716					

Gauge No.	2032	Depth	5713'	Clock No.	7276	24 hour

0	.0000	656	.0000		753	.0000	825	.0000		955					
1	.0168	677	.0100		1642*	.0366	815**	.0200		1286					
2	.0337	706	.0233		2328	.0699	858	.0400		1793					
3	.0505	714	.0365		2609	.1032	882	.0600		2276					
4	.0673	728	.0498		2689	.1364	903	.0800		2568					
5	.0842	741	.0631		2718	.1697	930	.1000		2676					
6	.1010	753	.0764		2732	.2030	955	.1200		2717					
7			.0897		2741			.1400		2734					
8			.1030		2749			.1600		2743					
9			.1163		2754			.1800		2750					
10			.1296		2758			.2000		2754					
11			.1428		2761			.2200		2758					
12			.1561		2763			.2400		2761					
13			.1694		2766			.2600		2762					
14			.1827		2767			.2800		2763					
15			.1960		2768			.3000		2764					
Reading Interval	5		4			10		6							Minutes

REMARKS: *Interval = 3 minutes **Interval = 11 minutes

FORM 183-RI—PRINTED IN U.S.A.

SPECIAL PRESSURE DATA

LITTLE'S 86673 75C 6/74

Casing perfs. _____ Bottom chok _____ Surf. temp _____ °F Ticket No. 876646

Gas gravity _____ Oil gravity _____ GOR _____

Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

Date 5-18-75 Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
1450					Opened tool with a fair blow, slid
					approxiamtely 16'. Had to closed tool
					and put on another joint.
					Opened tool with a good blow, slid
					approximately 5' to bottom. Had a
					good blow throughout.
1520					Closed tool
1620					Opened tool with a good blow. Gas to
					surface in 90 minutes.
1720					Closed tool

FORM 102-R1—PRINTED IN U.S.A.

PRODUCTION TEST DATA

LITTLE'S 86672 9M 8/74

THE NAVAJO NATION

WINDOW ROCK, NAVAJO NATION (ARIZONA) 86515

PETER MACDONALD
CHAIRMAN, NAVAJO TRIBAL COUNCIL

FRANK E. PAUL
VICE CHAIRMAN, NAVAJO TRIBAL COUNCIL

15 September 1982

Mr. Jay D. Magness
Petroleum Energy, Inc.
P. O. Box 2121
Durango, CO 81301

SUBJECT: Operating Committee Meeting W/Petroleum Energy, Inc.

Dear Mr. Magness:

A meeting of the Operating Committee was held in the office of the Minerals Department at Window Rock, Arizona on September 15, 1982. The Operating Committee reviewed recommendations and proposals of Petroleum Energy, Inc. and by this letter directs the Petroleum Energy, Inc. to proceed in an expeditious manner to do the following:

1) Recomplete Well 1-20 as a Barker Creek oil well and as a Mississippian gas and oil well. The Committee approves an exception to the well location requirements and of non-standard locations for the Mississippian gas wells 1-20 and Barbara Kay-1.

2) Subject to any other necessary approvals, approval is granted for 320 acre spacing for the S/2 of Section 20, T27N, R19W, N.M.P.M., San Juan County, New Mexico, with the Barker Creek and Mississippian productions from Well 1-20 and Barbara Kay-1 well allocated to the S/2 of Section 20.

3) Petroleum Energy, Inc. shall test oil and gas production rates from the Barker Creek and Mississippian formations to determine a reasonable basis for allocating the commingled production to the respective formations.

4) A ninety (90) day extension of time to dispose of salt water produced from existing Petroleum Energy, Inc. wells into the existing surface pits is granted, subject to the approval of Minerals Management Services.

5) Petroleum Energy, Inc. shall file an application for conversion of the Barbara Kay-3 well into a salt water disposal well with all appropriate agencies for their consideration and approval.

6) Petroleum Energy, Inc. will file an application for pipeline rights-of-way and gathering system from Well 1-20 to the

EXHIBIT "D"

Barbara Kay-3 well and from Section 6, as shown on the attached plat and shall secure all necessary approvals of rights-of-way across the Operating Agreement Service Area Lands for the water disposal pressure maintenance and low pressure gas collection pipeline system. Petroleum Energy, Inc. shall follow all normal and usual rights-of-way acquisition procedures.

If you have any questions, please advise.

Sincerely,

OPERATING COMMITTEE

Al Henderson, Chairman

Khaled Ferfera, Member

Ram Das, Member

PETROLEUM ENERGY, INC.

By _____
Jay D. Magness, Agent

1-5 Mississippian

DST No. 2 5960 to 6087' (Mississippian) (127')
Open 20 minutes good blow immediately Gas (flammable) to surface in 30 seconds. Mud to surface in 90 seconds Oil (41 Gravity) to surface in 3 minutes. Shut-in 60 minutes. Open 15 minutes-flowing oil. Total recovery estimated 70 BBLS in 35 minutes, 41° Gravity, No water. Shut-in 90 minutes.

Recovered 2245 feet 41 gravity oil with a slight trace of mud at bottom.

Top Recorder @ 5926' Temperature 138°F

Initial hydrostatic pressure. . . .	2922 psig
Final hydrostatic pressure.	2922 psig
Initial flow pressure (1)	1446 psig
Final flow pressure (1)	1736 psig
Initial flow pressure (2)	1551 psig
Final flow pressure (2)	2025 psig
Initial shut-in pressure (1). . . .	2896 psig
Final shut-in pressure (2).	2896 psig

Bottom Recorder @ 6074' Temperature 138°F

Initial hydrostatic pressure. . . .	3030 psig
Final hydrostatic pressure.	2977 psig
Initial flow pressure (1)	1747 psig
Final flow pressure (1)	2106 psig
Initial flow pressure (2)	1895 psig
Final flow pressure (2)	2185 psig
Initial shut-in pressure (1). . . .	2951 psig
Final shut-in pressure (2).	2951 psig

EXHIBIT "C"

TIGHT HOLE

FLUID SAMPLE DATA

Sampler Pressure 2180 P.S.I.G. at Surface
Recovery: Cu. Ft. Gas 2.80
cc. Oil 1300
cc. Water -
cc. Mud -
Tot. Liquid cc. 1300
Gravity ____ ° API @ ____ °F.
Gas/Oil Ratio ____ cu. ft./bbl.

		RESISTIVITY		CHLORIDE CONTENT
Recovery Water	@	°F.		ppm
Recovery Mud	@	°F.		ppm
Recovery Mud Filtrate	@	°F.		ppm
Mud Pit Sample	@	°F.		ppm
Mud Pit Sample Filtrate	@	°F.		ppm

Mud Weight 9.5 vis 54 cp

Date 5-21-75 Ticket Number 702392
Kind of Job OPEN HOLE Halliburton District FARMINGTON
Tester MR. SMITH Witness MR. LAUGHT
Drilling Contractor LOFFLAND BROTHERS DR S

EQUIPMENT & HOLE DATA

Formation Tested Mississippian
Elevation 5948' Ft.
Net Productive Interval - Ft.
All Depths Measured From Rotary Kelly Bushing
Total Depth 6087' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 524' I.D. 2½"
Drill Pipe Length 5399' I.D. 3.476"
Packer Depth(s) 5954-5960' Ft.
Depth Tester Valve 5939' Ft.

Cushion TYPE AMOUNT Ft. Depth Back Pres. Valve
Surface Choke 3/4" Adj. Bottom Choke 3/4"

Recovered 2245 Feet of very slight mud cut oil
Recovered Feet of CHARTS INDICATE PARTIAL PLUGGING OF ANCHOR PERFORATIONS DURING INITIAL FLOW PERIOD.
Recovered Feet of
Recovered Feet of
Recovered Feet of

Meas. From Tester Valve

Remarks SEE PRODUCTION TEST DATA SHEET

Q = Questionable

TEMPERATURE	Gauge No. 6040 Depth: 5943 Ft.	Gauge No. 6039 Depth: 6083 Ft.	Gauge No. Depth: Ft.	TIME
	12 Hour Clock	12 Hour Clock	Hour Clock	Tool Opened 1:10 A.M. P.M.
Est °F.	Blanked Off No	Blanked Off Yes	Blanked Off	Opened A.M.
Actual 138°F.	Pressures	Pressures	Pressures	Bypass 4:15 P.M.

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		2922.1	2964	3030.2	3044				
First Period	Flow Initial	1446.4	14330	1947.4	2087			—	—
	Flow Final	1735.5	1757	2105.5	2136			20	19
	Closed in	2895.7	2910	2951.0	2962			60	58
Second Period	Flow Initial	1551.3	17880	1894.7	22740			—	—
	Flow Final	2025.0	2063	2184.7	2193			15	15
	Closed in	2895.7	2906	2951.0	2974			90	93
Third Period	Flow Initial							—	—
	Flow Final								
	Closed in								
Final Hydrostatic		2922.1	2927	2977.4	2993			—	—

Legal Location Sec. - Twp. - Rng. 5-36N-19W
Lease Name NAVAJO TRIBE
Well No. 1-5
Test No. 2
Tested Interval 5960-6087'
Field Area WILDCAT
County SAN JUAN
State NEW MEXICO
Lease Owner/Company Name PETROLEUM ENERGY INCORPORATED

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FORMATION TEST DATA

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	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	6"	3"	1'	
Reversing Sub				
Water Cushion Valve				
Drill Pipe	4"	3.476"	5399'	
Drill Collars	6"	2 1/2"	524'	
Handling Sub & Choke Assembly				
Dual CIP Valve	5"		7'	5934'
Dual CIP Sampler	5"		5'	5939'
Hydro-Spring Tester				
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"		4'	5943'
Hydraulic Jar	5"	1"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1 1/2"	6'	5954'
Distributor				
Packer Assembly	6 3/4"	1 1/2"	7'	5960'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	6"	2 1/2"	89'	
Flush Joint Anchor	5 3/4"	2 1/2"	30'	
Blanked-Off B.T. Running Case	5 3/4"		5'	6083'
Total Depth				6087'

EQUIPMENT DATA

Gauge No. 6040			Depth 5943'			Clock No. 14121			12 hour	Ticket No. 702392				
	First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.000	14330	.000		1757	.000	17880	.000		2063					
1	.132	1757	.0138		2470*	.0212	1562	.0636		2801**					
2			.0484		2756	.0424	1584	.1060		2852					
3	Plugging		.0761		2829	.0636	1750	.1484		2872					
4			.1037		2854	.0848	1872	.1908		2883					
5			.1314		2872	.1060	2063	.2331		2889					
6			.1590		2883			.2755		2893					
7			.1867		2891			.3179		2896					
8			.2144		2897			.3603		2900					
9			.2420		2900			.4027		2901					
10			.2697		2904			.4451		2902					
11			.2973		2905			.4875		2904					
12			.3250		2906			.5299		2905					
13			.3527		2908			.5723		2906					
14			.3803		2909			.6147		2906					
15			.4010		2910			.6570		2906					

Gauge No. 6039			Depth 6083'			Clock No. 10444			12 hour 702392					
0	.000	2087	.000		2136	.000	22740	.000		2193					
1	.133	2136	.0137		2525*	.0208	1901	.0626		2860**					
2			.0414		2770	.0416	1929	.1044		2907					
3			.0690		2869	.0624	2003	.1461		2927					
4	Plugging		.0966		2904	.0832	2094	.1878		2937					
5			.1242		2920	.1040	2193	.2296		2949					
6			.1517		2932			.2713		2948					
7			.1793		2940			.3131		2950					
8			.2069		2946			.3548		2952					
9			.2345		2950			.3965		2954					
10			.2621		2953			.4383		2956					
11			.2897		2956			.4800		2957					
12			.3173		2957			.5218		2958					
13			.3448		2958			.5635		2960					
14			.3725		2961			.6052		2961					
15			.4000		2962			.6470		2974					
Reading Interval			4			3		6							Minutes

REMARKS: * First interval equal to 2 minutes **-9 minutes Q-Questionable

Casing perfs. _____ Bottom hoke _____ Surf. temp. ____ ____ °F Ticket No. 702392

Gas gravity _____ Oil gravity _____ GOR _____

Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

Date Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
20:30					Picked up tools and went in hole
01:10					Opened tool with a fair blow
01:11					Increased to a good blow
01:13					Increased to a strong blow and gas
					to surface.Opened flow line on 3/8" choke
01:17					Fluid to surface-oil cut mud
01:20					Oil to surface
01:30					Closed tool
02:30					Opened tool to flow line on 3/4" choke
02:35					Closed to 1/2" choke
02:40					Closed to 1/4" choke.
02:45					Closed tool
04:15					Pulled tool loose and pulled 3 stands
					of pipe and waited on daylight
06:00					Trip out with tool

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PRODUCTION TEST DATA

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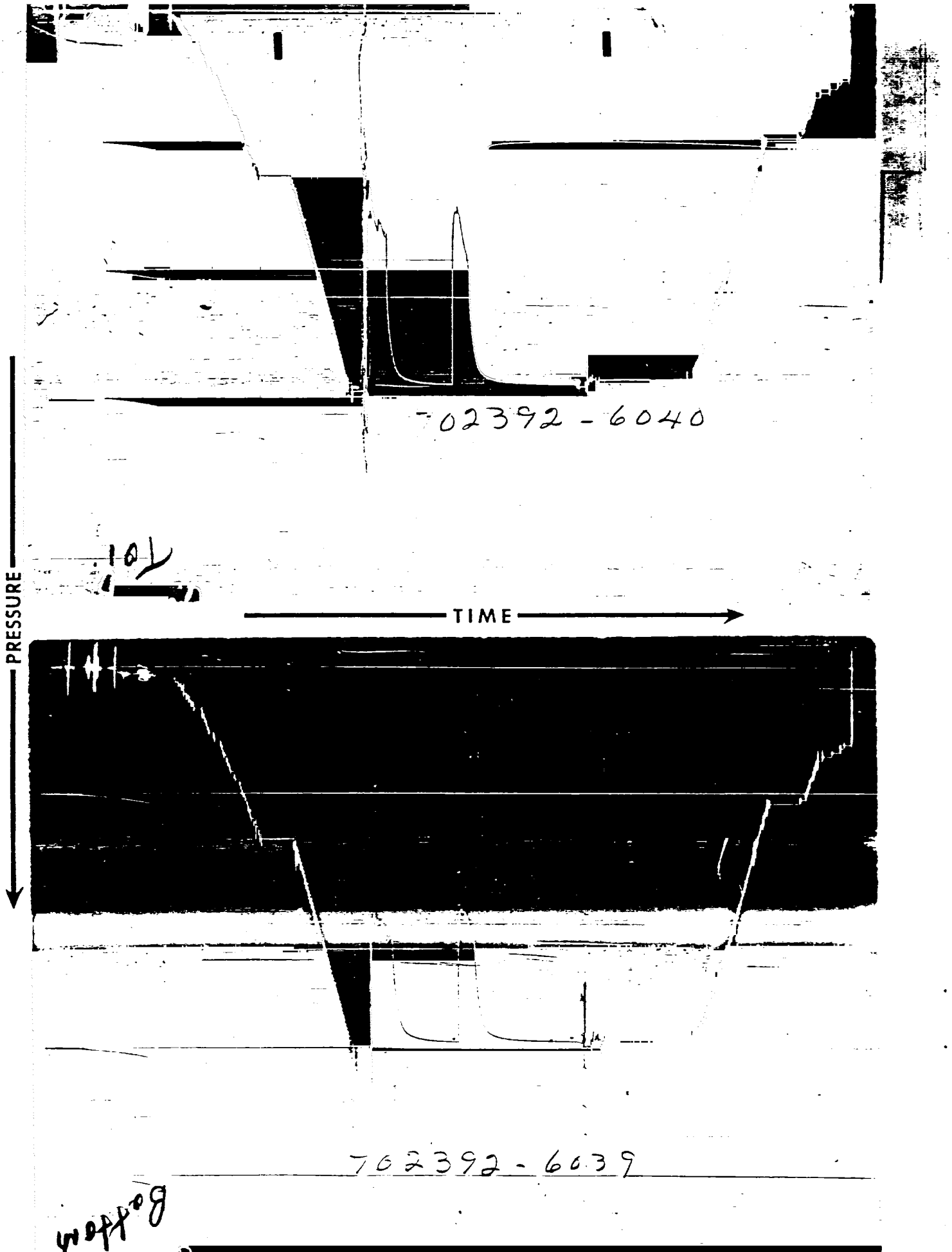
702392-6040
PRESSURE
TIME
702392-6039
Each Horizontal Line Equal to 1000 p.s.i.