NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION
SANTA FE - NEW MEXICO

STATE OF NEW MEXICO TO:

All operators and parties interested in the oil pools located in San Juan, Rio Arriba, McKinley and Sandoval Counties:

NOTICE AND ORDER TO SHOW CAUSE

CASE NO. 607 :

You and each of you are hereby given notice and are hereby ordered to prepare to show cause before the Oil Conservation Commission of New Mexico at Santa Fe, New Mexico, on December 17, 1953, at 9 o'clock a.m. in Mabry Hall, State Capitol, why the following named pools in San Juan, Rio Arriba, McKinley and Sandoval Counties, New Mexico, should not be classified or reclassified; extended or reduced; created or eliminated; designated or redesignated as to nomenclature and productive formations, respectively, and, why The oil production, if any, should not be prorated and allocations fixed for the several pools under the provisions of Rule 505 of the statewide Rules and Regulations of the State of New Mexico, as follows:

Bloomfield-Farmington; Hogback-Dakota; Hospah; Lindrith-Dakota; Oswell-Farmington; South Blanco-Tocito; Rattlesnake-Dakota; Rattlesnake-Pennyslvanian; Red Mountain-Mesaverde; Stoney Butte-Dakota; Table Mesa-Dakota; Table Mesa-Mississippian; Wyper-Farmington; and pool designations for wildcat areas where substantial oil production has been encountered ~~in any~~ in any of the counties named hereinabove.

DONE at Santa Fe, New Mexico, this day of November, 1953, upon motion of the Commission.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

R. R. SPURRIER
SECRETARY

EARLOUGHER ENGINEERING
PETROLEUM CONSULTANTS - CORE ANALYSES
3316 EAST 21ST STREET
TULSA, OKLAHOMA

October 22, 1953

Lowry, et al, Operating Account
616 East Central Avenue
Albuquerque, New Mexico

Attention - Mr. A. F. Holland

Re - Core Analysis
Lowry Well No. T-125
Sec. 8, T.26-N., R.6-W.
Rio Arriba County, New Mexico

Gentlemen:

Attached are results of analysis, together with profile and summary, covering core received from your above well.

Yours very truly

EARLOUGHER ENGINEERING

R. C. Earlougher, Engineer

JMR tw
Encl 9
cc - T. G. Lowry
A. C. McLee
G. F. Moulton
G. L. Yates

EARLOUGHER ENGINEERING

CORE SUMMARY

Company Lowry, et al, Operating Account Lease Lowry Well No. T-125

Location NW/4 NW/4

Section 8 Twp. 26-N Rge. 6-W County Rio Arriba State New Mexico

Formation Cored Tocito Sand Type Core 4-Inch Diamond

Date Cored 10-8-53 Date Shot _____ Coring Fluid Water Base Mud

Depths:		
	Elevation, K.B., Datum	6705.0 Feet
	Top of core No. 1, shale	6814.0 "
	Top of Tocito oil sand	6830.4 "
	Estimated bottom of Tocito oil sand	6843.0 "
	Bottom of core No. 1, core loss	6855.0 "
	Bottom of core No. 2, shale	6883.0 "
	Net feet of Tocito oil sand recovered	3.0 "
	Total sand thickness from microlog	13.0 "
	Total feet cored	69.0 "
	Feet analyzed	11.0 "
	Estimated net feet of pay from microlog	11.0 "

THE ABOVE CORE DEPTHS HAVE BEEN CORRECTED TO SCHLUMBERGER TOTAL DEPTH OF 6883.0 FEET FROM A DRILLERS TOTAL DEPTH OF 6887.0 FEET.

Shot Record: Set Packer _____ Feet

Depth, Feet From	To	Feet	Shell Diameter	Quarts Per Foot	Quarts Total

Completion Data:

Hrs. well stood after coring _____; Feet Fluid in Hole _____ (Oil _____ Water _____)

Clean-out time, hrs. _____; Initial production, bbls. day _____ (Oil _____ Water _____)

Remarks: The Tocito section was diamond cored from 6814.0 to 6883.0 feet and core sampled by Lowry Oil Company. Coring was commenced and completed in shale.

Core No. 1 from 6814.0 to 6855.0 feet recovered only 3.6 feet of sand and 15.8 feet of shale.

Eleven canned core samples containing all of the sand recovered were received in our laboratory. Samples No. 1, 2, 3 and 4 reportedly represent the top 1.2 feet of Tocito

(Continued following page)

sand. Samples 5, 6, 7, 8 and 9 represent the core recovered between depths 6831.0 to 6843.0 feet. Sample No. 10 reportedly represents the bottom of Core No. 1 at depth of 6855.0 feet. Sample No. 11 reportedly represents the top of Core No. 2 also at 6855.0 feet.

For the purpose of this core report samples No. 5 through 9 are arbitrarily spaced at uniform intervals throughout the section cored from 6831.0 to 6843.0 feet.

Results of these core analyses are summarized in two sections on the basis of variance in permeability and porosity.

Section 1 contains 1.5 net feet of very dense limy sand. Section 2 contains 1.5 net feet of oil sand with good permeability and good porosity.

PERMEABILITY Average permeability of sections 1 and 2 is 0.2 and 414 millidarcys respectively. Individual permeability values in section 2 vary from 57 to 983 millidarcys. Weighted average permeability of the 3.0 net feet of oil sand recovered is 207 millidarcys.

POROSITY Average porosity of sections 1 and 2 is 5.7 and 19.2 per cent, respectively. Weighted average porosity of the 3.0 feet of oil sand recovered is 12.5 per cent. Individual porosity values vary from 3.6 to 21.3 per cent in the oil sand section.

PER CENT SATURATION The 1.5 net feet of oil sand recovered in section 1 has a high average oil saturation of 43 per cent and average core water saturation of 13 per cent reflecting the very low permeability and porosity of this sand. The more permeable sand recovered in section 2 has an average core oil saturation of 29 per cent and average core water saturation of 28 per cent. The over-all average oil saturation is 36 per cent and average core

water saturation 21 per cent. Estimated average connate water saturation is 18 per cent.

OIL CONTENT Average oil content of the dense sand in section 1 is 190 barrels per acre-foot while that of the more permeable sand in section 2 is 432 barrels per acre-foot. Weighted average oil content of the oil sand recovered is 311 barrels per acre-foot.

LABORATORY WATER FLOODING TESTS Laboratory water flooding tests on 1 sample from the very dense sand in section 1 indicated a residual oil saturation of 41 per cent and showed no oil recovery. Permeability to water was very low in this one sample. Two flood samples from the more permeable sand in section 2 indicated an average residual oil saturation of 25 per cent and showed no oil recovery. Permeability to water was high in section 2.

CONCLUSIONS

1. Only 3.0 net feet of oil sand were recovered. Coring time and Electrical log indicated total sand thickness of 13 feet between depths 6830.0 and 6843.0 feet.

2. The core recovered indicates 1.5 net feet of sand with a high average permeability of 414 millidarcys and high average porosity of 19.2 per cent. The remaining 1.5 net feet of oil sand recovered has a low average permeability of 0.2 millidarcy and low average porosity of 5.7 per cent.

3. Based on the core data for the 1.5 feet of high permeability sand recovered it is estimated that a primary oil recovery by gas expansion of 194 barrels per acre-foot may be obtained from the area of which this

core is representative. If reservoir pressure is maintained by an efficient water drive it is estimated that an additional oil recovery of 154 barrels per acre-foot should result.

4. From the microlog it is estimated there may be 11 net feet of oil pay having relatively high permeability and porosity approaching that of the 1.5 feet of good sand recovered in the core.

5. On the basis of 11 net feet of pay the estimated primary oil recovery should be 2140 barrels per acre with an additional 1690 barrels per acre by pressure maintenance using water.

Respectfully submitted

EARLOUGHER ENGINEERING

J. M. Robinson, Engineer

JMR tw

EARLOUGHER ENGINEERING

SUMMARY OF CORE ANALYSES DATA

OMPANY Lowry, et al Operating Account LEASE Lowry WELL NO. T-125

Sec.	Formation	Depth, Ft. From	Depth, Ft. To	Net Ft. of Sand	Avg. Por.	Avg. Core Saturation Oil	Avg. Core Saturation Water	Core Oil Content Avg. B/A. Ft.	Core Oil Content Total B/Ac.	Permeability Avg. Md.	Permeability Capacity Ft. x Md.	Flood Pot Residuals Saturation Oil	Flood Pot Residuals Saturation Water	Flood Pot Residuals Oil Content B/A. Ft.	Flood Pot Residuals Oil Content B/Ac.	Oil Recovery Bbl./Acre Diff.	Oil Recovery Bbl./Acre Flood Pot
	TOCITO																
1	0.0 - 5. md.	6830.4	6843.0	1.5*	5.7	43.	13.	190.	--	0.2	--	41.	41.	181.	--	--	+
2	over 6. md.	6830.4	6843.0	1.5*	19.2	29.	28.	432.	--	414.	--	25.	57.	372.	--	--	+
-2		6830.4	6843.0	3.0*	12.5	36.	21.	311.	--	207.	--	33.	49.	277.	--	--	+
	Oil pay	6831.	6843.	11.**	19.2	29.	28.	432.	--	414.	--	25.	57.	372.	--	--	--

* Does not include core loss. Recovered only 3.0 feet of oil sand. Core depths are corrrected to electric log depths.

** Estimated from micro log.

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EARLOUGHER ENGINEERING

RESULTS OF CORE ANALYSES

COMPANY Lowery et al, Operating Account WELL Lowry No. T-125

Sample No.	Depth Feet	Perm. Md.	Porosity Per Cent	Per Cent Saturation			Avg. Oil Content Bbl./A. Ft.	Remarks
				Oil	Water	Total		
0	6829.6	Shale not analyzed						
1	6830.0	-0-	3.5	75.	25.	100.	200.	Limey conglomerate*
2	6830.3	-0-	4.2	40.	50.	90.	130.	Limey conglomerate*
3	6830.6	0.2	3.6	44.	18.	62.	120.	Limey conglomerate
4	6830.9	-0-	4.7	52.	13.	65.	190.	Limey conglomerate
5	6832.4	0.4	6.9	39.	14.	53.	210.	Limey conglomerate
6	6835.2	983.	21.3	28.	27.	55.	460.	Sl limey carb sd
7	6838.0	0.2	7.4	36.	8.	44.	210.	Limey carb sd
8	6840.8	202.	19.0	29.	26.	55.	420.	Sl shly carb sd
9	6842.0	57.	17.4	30.	31.	61.	410.	Sl limey carb sd
10	6855.	-0-	2.8	16.	52.	68.	35.	Shly carb sd *
11	6855.0-6855.4	0.1	1.7	74.	26.	100.	97.	Sandy shale *

* Not included in averages.

Note: Samples No. 5 - 9 spaced uniformly thru section 6831. - 6843.

SUMMARY

Depth, Feet From	Depth, Feet To	Feet of Sand	Average Permeability	Average Porosity	Avg. Oil Sat.	Avg. Water Sat.	Avg. Oil Content Bbl./A. Ft.

FORM CE 104

EARLOUGHER ENGINEERING

RESULTS OF LABORATORY FLOODING TESTS

COMPANY Lowry, et al, Operating Account LEASE Lowry WELL NO. T-125

Sample No.	Depth	Porosity	Perm. Approx.	Before Flooding 1/			Max. Press. Psi.	Water Through C.C.	Time Min.	Flood Pot Residual			Flood Pot Oil Recovery Bbl./A. Ft.	
				Oil Sat.	Water Sat.	Oil Content Bbl./A. Ft.				Oil Sat.	Water Sat.	Oil Content Bbl./A. Ft.		
F-2	6830.3	4.2	IMP	55.	--	180.	70.	-0-	375.	55.	45.	180.	-0-	
F-4	6830.9	4.7	IMP	41.	--	150.	70.	42.	375.	41.	41.	150.	+	
F-6	6835.2	21.3	983.	21.	--	340.	40-70.	7,594.	375.	21.	57.	340.	+	
F-8	6840.8	19.0	202.	29.	--	420.	40-70.	8,892.	375.	29.	56.	420.	+	

JG

1/ Unless otherwise noted, oil content and saturation before flooding equals flood pot oil recovery plus flood pot residual.

EARLOUGHER ENGINEERING
PETROLEUM CONSULTANTS - CORE ANALYSES
3316 EAST 21ST STREET
TULSA, OKLAHOMA

July 27, 1953

Lowry, et al, Operating Account
616 East Central Avenue
Albuquerque, New Mexico

Attention - Mr. A. F. Holland

Re: Core Analysis
Federal Well No. T-83
Sec 5, T.26-N, R.6-W
Rio Arriba County, New Mexico

Gentlemen:

Attached are complete results of analysis, together with profile and summary, covering core received from your above well. This replaces preliminary report submitted July 18, 1953.

Yours very truly

EARLOUGHER ENGINEERING

R. C. Earlougher, Engineer

ABL d
Encl 9
cc - T. G. Lowry
A. C. McLee
G. F. Moulton
G. L. Yates

EARLOUGHER ENGINEERING

CORE SUMMARY

Company Lowry, et al, Operating Acc't Lease Federal Well No. T-83

Location NW SE/4

Section 5 Twp. 26-N Rge. 6-W County Rio Arriba State New Mexico

Formation Cored Tocito Type Core 4-3/8 inch Diamond

Date Cored 7-15-53 Date Shot _____ Coring Fluid _____

Depths:

Elevation, Kelly Bushing (14 ft above ground)	6573.0 ft
Top of core, sandy black shale	6741.5 "
Top of oil sand	6744.0 "
Bottom of oil sand	6754.0 "
Bottom of core, sandy black shale	6758.0 "
Net feet of oil sand	8.2 "
Total cored	16.5 "
Feet analyzed	15.4 "

Shot Record: Set Packer _____ Feet

Depth, Feet From	Depth, Feet To	Feet	Shell Diameter	Quarts Per Foot	Quarts Total

Completion Data:

Hrs. well stood after coring _____; Feet Fluid in Hole _____ (Oil _____ Water _____)

Clean-out time, hrs. _____; Initial production, bbls. day _____ (Oil _____ Water _____)

Remarks: The Tocito sand section between depths of 6741.5 and 6758.0 feet was sampled by Lowry Oil Company. Sixteen samples sealed in aluminum foil were sent in by air express with balance of core in this interval being sent by Railway Express.

Results of analyses indicated 8.2 net feet of dense, possible oil sand between depths 6744.0 and 6754.0 feet. The core data are summarized in two sections with section 1 containing sand having permeability values ranging from 0.1 to 5 millidarcys

(Continued following page)

and section 2 sand with values greater than 6 millidarcys. These data indicate only 1.1 feet of sand in section 2 and 7.1 feet in section 1.

PERMEABILITY Average permeability of sections 1 and 2 is 1.5 and 19 millidarcys with the weighted average being 3.9 millidarcys. Permeability capacity is 32 foot-millidarcys.

POROSITY Weighted average porosity is 10.6 per cent with the individual sections 1 and 2 having average values of 10.1 and 14.1 per cent respectively.

PER CENT SATURATION Average oil saturation of the 8.2 net feet of oil sand is 32 per cent and average core water saturation 21 per cent. Estimated connate water saturation is 21 per cent.

OIL CONTENT Average core oil content is 261 barrels per acre-foot and values range from 170 to 330 barrels per acre-foot.

LABORATORY FLOODING TESTS Laboratory water flooding tests yielded no oil recovery and average residual oil saturation was 33 per cent. Average radial permeability to water was 0.105 millidarcy for the 8.2 net feet of pay section. Average permeability to water for four samples excluded from the pay section because of porosity values of less than 8 per cent was 0.029 millidarcy.

CONCLUSIONS

1. Net feet of oil sand is 8.2 located between depths 6744.0 and 6754.0 feet.

2. The sand has a low average permeability of 3.9 millidarcys and low average porosity of 10.6 per cent.

3. The average core oil saturation is 32 per cent and average core water saturation 21 per cent.

4. Laboratory water flooding tests yielded no oil recovery and permeability to water was very low with an average of 0.105 millidarcy.

5. Estimated primary oil recovery by gas expansion is 79 barrels per acre-foot or 650 barrels per acre from the area of which this core is representative.

6. If reservoir pressure is maintained by an efficient water drive an additional oil recovery of 45 barrels per acre-foot or 370 barrels per acre should be obtained.

7. In view of the very low permeability capacity, the natural rate of production probably would be negligible. However, permeability and drainage radius probably could be increased by a fracture treatment.

8. With the present wide spacing in this pool such fracture treatment might not be detrimental in a water injection program.

Respectfully submitted

EARLOUGHER ENGINEERING

J. M. Robinson, Engineer

R/L d

EARLOUGHER ENGINEERING

RESULTS OF SATURATION TESTS

COMPANY Lowry , et al Operating Account WELL Federal No. T-83

Sat. No.	Depth Feet	Porosity Per Cent	Per Cent Saturation			Avg. Oil Content Bbl./A. Ft.	Feet of Sand		Total Oil Content Bbl./Acre
			Oil	Water	Total		Ft.	Cum.	
1	6742.6	6.4	46.	22.	68.	230.	0.8*		
2	6743.4	7.1	34.	37.	71.	190.	1.2*		
3	6744.5	9.8	28.	16.	44.	210.	0.8	0.8	170.
4	6745.7	10.5	34.	15.	49.	280.	1.2	2.0	340.
5	6746.7	8.9	40.	13.	53.	270.	0.9	2.9	240.
6	6747.7	9.4	44.	21.	65.	320.	0.8	3.7	260.
7	6748.7	14.1	31.	19.	50.	330.	1.1	4.8	360.
8	6749.7	11.2	28.	21.	49.	240.	0.9	5.7	220.
9	6750.6	10.2	35.	18.	53.	280.	0.9	6.6	250.
10	6751.6	8.8	25.	35.	60.	170.	0.6	7.2	100.
11	6752.3	4.8	45.	21.	66.	170.	1.6*		
12	6753.4	10.9	26.	26.	52.	220.	1.0	8.2	220.
13	6754.7	7.4	32.	9.	41.	190.	1.2*		
14	6755.7	4.6	50.	15.	65.	180.	1.3*		
15	6756.8	4.9	43.	12.	55.	160.	0.5*		
16	6757.5	4.1	35.	50.	85.	110.	0.6*		

* Not included in cumulative feet of sand.

Js

EARLOUGHER ENGINEERING

RESULTS OF PERMEABILITY TESTS

COMPANY Lowry, et al Operating Account WELL Federal No. T-83

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Sand		Capacity Ft. X Md.	Sample No.	Depth Feet	Permeability Millidarcys	Feet of Sand		Capacity Ft. X Md.
			Ft.	Cum. Ft.					Ft.	Cum. Ft.	
17	6742.1	IMP	0.5*			25	6750.2	14.	0.5	5.7	7.0
1	6742.6	IMP	0.3*			9	6750.6	2.1	0.4	6.1	0.8
18	6743.0	0.1	0.4*			26	6750.9	0.5	0.5	6.6	0.3
2	6743.4	0.1	0.8*			10	6751.6	0.6	0.6	7.2	0.4
19	6744.2	0.6	0.3	0.3	0.2	11	6752.3	0.1	0.6*		
3	6744.5	0.2	0.5	0.8	0.1	28	6753.0	0.2	0.4*		
20	6745.1	0.9	0.5	1.3	0.5	12	6753.4	1.4	0.6	7.8	0.8
4	6745.7	2.2	0.7	2.0	1.5	29	6753.8	1.3	0.4	8.2	0.5
21	6746.2	0.6	0.5	2.5	0.3	13	6754.7	0.1	1.0*		
5	6746.7	0.3	0.4	2.9	0.1	30	6755.2	0.6	0.2*		
22	6747.2	0.1	0.6*			14	6755.7	0.1	0.8*		
6	6747.7	0.5	0.3	3.2	0.2	31	6756.2	0.1	0.5*		
23	6748.2	4.6	0.5	3.7	2.3	15	6756.8	0.2	0.5*		
7	6748.7	23.	0.6	4.3	14.	16	6757.5	0.6	0.6*		
24	6749.2	1.5	0.4	4.7	0.6	32	6757.9	IMP	0.4*		
8	6749.7	4.5	0.5	5.2	2.3						

* Not included in cumulative feet of sand.

jg

EARLOUGHER ENGINEERING

SUMMARY OF CORE ANALYSES DATA

COMPANY Lowry, et al Operating Account LEASE Federal WELL NO. T-83

Sec.	Formation	Depth, Ft.		Net Ft. of Sand	Avg. Por.	Avg. Core Saturation		Core Oil Content		Permeability		Flood Pot Residuals				Oil Recovery Bbl./Acre	
												Saturation		Oil Content			
		From	To			Oil	Water	Avg. B/A. Ft.	Total B/Ac.	Avg. Md.	Capacity Ft. x Md.	Oil	Water	B/A. Ft.	B/Ac.	Diff.	Flood Pot
	TOCITO SAND																
1	0.1 to 5. md	6744.0	6754.0	7.1	10.1	32.	21.	254.	1800.	1.5	11.	34.	49.	266.	1890.	-0-	-0-
2	Above 6. md	6744.0	6754.0	1.1	14.1	31.	19.	330.	340.	19.	21.	31.	53.	330.	340.	-0-	-0-
1-2		6744.0	6754.0	8.2	10.6	32.	21.	261.	2140.	3.9	32.	33.	50.	272.	2230.	-0-	-0-

jg

EARLOUGHER ENGINEERING

RESULTS OF LABORATORY FLOODING TESTS

COMPANY Lowry, et al Operating Account LEASE Federal WELL NO. T-83

Sample No.	Depth	Porosity	Perm. Approx.	Before Flooding 1/ Oil Sat.	Before Flooding 1/ Water Sat.	Before Flooding 1/ Oil Content Bbl./A. Ft.	Max. Press. Psi.	Water Through C.C.	Time Min.	Flood Pot Residual Oil Sat.	Flood Pot Residual Water Sat.	Flood Pot Residual Oil Content Bbl./A. Ft.	Flood Pot Oil Recovery Bbl./A. Ft.	Radial Perm. to Fresh Water, md at 70 psi.
*F-1	6742.6	6.4	-0-	44.	--	220.	70.	+	480.	44.	41.	220.	-0-	--
F-3	6744.5	9.8	0.2	32.	--	240.	70.	155.	480.	32.	57.	240.	-0-	0.060
F-5	6746.7	8.9	0.3	38.	--	260.	70.	60.	480.	38.	48.	260.	-0-	0.041
F-7	6748.7	14.1	23.	31.	--	330.	70.	485.	480.	31.	53.	330.	-0-	0.306
F-9	6750.6	10.2	2.1	32.	--	250.	70.	15.	480.	32.	42.	250.	-0-	0.011
*F-11	6752.3	4.8	0.1	44.	--	160.	70.	38.	480.	44.	41.	160.	-0-	0.033
*F-13	6754.7	7.4	0.1	25.	--	140.	70.	19.	480.	25.	66.	140.	-0-	0.013
*F-15	6756.8	4.9	0.2	49.	--	190.	70.	35.	480.	49.	51.	190.	-0-	0.010
												Average		0.105

* Not included in averages

JG

1/ Unless otherwise noted, oil content and saturation before flooding equals flood pot oil recovery plus flood pot residual.

EARLOUGHER ENGINEERING
PETROLEUM CONSULTANTS - CORE ANALYSES
3316 EAST 21ST STREET
TULSA, OKLAHOMA

December 7, 1953

Lowry, et al Operating Account
616 East Central Avenue
Albuquerque, New Mexico

Attention - Mr. A. F. Holland

Re - Core Analysis
Federal Well No. T-123
Sec. 7, T.26-N., R.6-W.
Rio Arriba County, New Mexico

Gentlemen:

Attached are results of analysis, together with profile and summary, covering core received from your above well.

Chloride and sulfate content of the core water have been determined and will be submitted in a separate report.

Yours very truly

EARLOUGHER ENGINEERING

R. C. Earlougher, Engineer

JMR tw
Encl 9
cc - T. G. Lowry
A. C. McLee
G. F. Moulton
G. L. Yates

EARLOUGHER ENGINEERING

CORE SUMMARY

Company Lowry, et al Operating Account Lease Federal Well No. T-123

Location 700 feet from North Line, 1800 feet from East Line

Section 7 Twp. 26-N Rge. 6-W County Rio Arriba State New Mexico

Formation Cored Tocito Sand Type Core 4-Inch Diamond

Date Cored 11-22-53 Date Shot _____ Coring Fluid Water Base Mud

Depths:

Elevation, ground level	6681.0 Feet
Elevation, K.B., datum	6692.0 "
Started coring, shale	6795.0 "
Top of Tocito sand, dense possible gas sd	6797.7 "
Top of main porous section	6800.8 "
Top of possible oil sand	6807.5 "
Bottom of possible oil sand	6810.7 "
Bottom of dense limy sand	6811.5 "
Bottom of core recovered, shale	6816.5 "
Bottom of core, core loss	6845.0 "
Net feet of Tocito sand	13.4 "
Feet analyzed	15.0 "

Shot Record: Set Packer _____ Feet

Depth, Feet From	To	Feet	Shell Diameter	Quarts Per Foot	Quarts Total

Casing set and cemented at	6844.0 Feet
Drilled out to	6832.0 "

Perforated with 6 shots per foot from 6797 to 6812 feet.
Estimated open flow of 10 million cubic feet of gas per day and some distillate of 66° A.P.I. at 60/60 F.

Completion Data:

Hrs. well stood after coring _____; Feet Fluid in Hole _____ (Oil _____ Water _____)

Clean-out time, hrs. _____; Initial production, bbls. day _____ (Oil _____ Water _____)

Remarks: The Tocito section was diamond cored from 6795.0 to 6845.0 feet and core sampled by Lowry Oil Company. Core recovery was 21.5 feet with the top 2 feet being shale and the bottom 5 feet shale. The remaining 14.5 feet of core recovered was Tocito sand. MicroLog indicates that the entire Tocito sand section was recovered in the core.

Results of analyses indicate 13.4 net feet of Tocito sand between depths 6797.7 and 6811.5 feet. The core data indicate 5.8 net feet of this sand to have an average permeability of 0.2 millidarcys with values ranging from 0.1 to 0.3 millidarcy. The

(Continued following page)

remaining 7.6 net feet of the Tocito sand has a good average permeability of 104 millidarcys with values ranging from 1.1 to 495 millidarcys.

The 5.8 net feet of very dense Tocito has an average porosity of 5.6 per cent and is very nearly a sandy limestone. The average oil saturation is 32 per cent and average core water saturation 21 per cent.

The 7.6 net feet of more permeable sand has an average porosity of 16.4 per cent with individual values ranging from 8.9 to 20.6 per cent.

The core data for the 7.6 net feet of more permeable sand have been summarized in 3 sections, 2-A, 2-B and 2-C based on variance in oil saturation. These data indicate an average oil saturation of 15 per cent for the top 1.9 net feet, an average oil saturation of 19 per cent for the next 2.9 net feet and an average oil saturation of 30 per cent for the bottom 2.8 net feet. Average permeability for the 3 sections 2-A, 2-B and 2-C is 54, 226 and 10 millidarcys respectively. These saturation data may be interpreted to indicate oil sand in the bottom 2.8 net feet and possible gas with possibly some oil in the top 4.8 net feet.

Assuming 2.8 net feet of oil sand it is estimated that a primary oil recovery of 400 barrels per acre may be obtained from the area of which this core is representative. If reservoir pressure is maintained by an effective water drive it is possible that an additional oil recovery of 400 barrels per acre may be obtained.

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EARLOUGHER ENGINEERING

SUMMARY OF CORE ANALYSES DATA

COMPANY Lowry, et al, Operating Account LEASE Federal WELL NO. T-123

Sec.	Formation	Depth, Ft.		Net Ft. of Sand	Avg. Por.	Avg. Core Saturation		Core Oil Content		Permeability		Flood Pot Residuals				Oil Recovery Bbl./Acre	
												Saturation		Oil Content			
		From	To			Oil	Water	Avg. B/A. Ft.	Total B/Ac.	Avg. Md.	Capacity Ft. x Md.	Oil	Water	B/A. Ft.	B/Ac.	Diff.	Flood Pot
1	0.1 - 1.0 md.	6797.7	6811.5	5.8	5.6	32.	21.	141.	820.	0.2	1.1	20.	44.	87.	500.	320.	-0-
2	Over 1.0 md	6800.8	6810.7	7.6	16.4	22.	27.	278.	2110.	104.	788.	22.	58.	276.	2100.	10.	-0-
1&2		6797.7	6811.5	13.4	11.7	24.	24.	219.	2930.	59.	789.	21.	52.	194.	2600.	330.	-0-
2A	Poss. gas	6800.8	6803.3	1.9	16.3	15.	33.	190.	360.	54.	103.	19.	60.	240.	460.	-0-	-0-
2B	Poss. gas-oil	6803.3	6807.1	2.9	18.7	19.	28.	283.	820.	226.	657.	17.	58.	246.	710.	110.	-0-
2C	Oil	6807.5	6810.7	2.8	14.1	30.	22.	332.	930.	10.	28.	30.	58.	332.	930.	-0-	-0-

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EARLOUGHER ENGINEERING

RESULTS OF SATURATION TESTS

COMPANY Lowry, et al, Operating Account **WELL** Federal No. T-123

Sat. No.	Depth Feet	Porosity Per Cent	Per Cent Saturation			Avg. Oil Content Bbl./A. Ft.	Feet of Sand		Total Oil Content Bbl./Acre
			Oil	Water	Total		Ft.	Cum.	
1	6797.3	2.9	59.	40.	99.	130.	0.7*		
2	6798.2	6.4	26.	16.	42.	130.	1.5	1.5	200.
3	6799.7	7.7	20.	14.	34.	120.	0.6	2.1	72.
4	6800.2	5.4	42.	12.	54.	180.	2.2	4.3	400.
5	6801.1	15.4	19.	49.	68.	230.	0.7	5.0	160.
6	6802.1	16.6	14.	25.	39.	180.	0.6	5.6	110.
7	6803.1	16.9	12.	25.	37.	150.	0.6	6.2	90.
8	6804.7	20.6	19.	26.	45.	300.	1.7	7.9	510.
9	6805.4	14.5	22.	25.	47.	250.	0.6	8.5	150.
10	6806.7	17.7	19.	33.	52.	260.	0.6	9.1	160.
11	6807.7	15.1	28.	20.	48.	330.	0.7	9.8	230.
12	6808.7	18.3	22.	23.	45.	310.	0.8	10.6	250.
13	6809.8	8.9	46.	23.	69.	320.	0.8	11.4	260.
14	6810.4	14.3	33.	23.	56.	370.	0.5	11.9	190.
15	6811.3	4.1	32.	40.	72.	100.	1.5	13.4	150.

* Not included in cumulative feet of sand.

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EARLOUGHER ENGINEERING

RESULTS OF LABORATORY FLOODING TESTS

COMPANY Lowry, et al, Operating Account LEASE Federal WELL NO. T-123

Sample No.	Depth	Porosity	Perm. Approx.	Before Flooding 1/ Oil Sat.	Water Sat.	Oil Content Bbl./A. Ft.	Max. Press. Psi.	Water Through C.C.	Time Min.	Flood Pot Residual Oil Sat.	Water Sat.	Oil Content Bbl./A. Ft.	Flood Pot Oil Recovery Bbl./A. Ft.
F- 1	6797.3	2.9	0.1	74.	--	170.	70.	+	435.	74.	26.	170.	-0-
F- 3	6799.7	7.7	2.0	24.	--	150.	70.	39.	435.	24.	47.	150.	-0-
F- 5	6801.1	15.4	38.	21.	--	250.	70.	10,256.	435.	21.	78.	250.	+
F- 7	6803.1	16.9	102.	16.	--	220.	70.	417.	435.	16.	42.	220.	-0-
F- 9	6805.4	14.5	7.0	17.	--	200.	70.	1,176.	435.	17.	58.	200.	-0-
F-11	6807.7	15.1	6.0	24.	--	280.	70.	30.	435.	24.	37.	280.	-0-
F-13	6809.8	8.9	2.0	35.	--	240.	70.	668.	435.	35.	78.	240.	-0-
F-15	6811.3	4.1	1.0	16.	--	50.	70.	476.	435.	16.	41.	50.	-0-

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1/ Unless otherwise noted, oil content and saturation before flooding equals flood pot oil recovery plus flood pot residual.

EARLOUGHER ENGINEERING

RESULTS OF PERMEABILITY TESTS

COMPANY Lowry, et al, Operating Account **WELL** Federal No. T-123

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Sand		Capacity Ft. X Md.	Sample No.	Depth Feet	Permeability Millidarcys	Feet of Sand		Capacity Ft. X Md.
			Ft.	Cum. Ft.					Ft.	Cum. Ft.	
1	6797.5	IMP	0.7*			14	6804.4	76.	0.2	6.8	15.
2	6797.9	0.1	0.3	0.3	0.1	15	6805.0	495.	0.5	7.3	248.
3	6798.5	0.2	1.1	1.4	0.2	16	6805.2	17.	0.6	7.9	10.
4	6799.5	0.3	0.4	1.8	0.1	17	6805.7	0.1	0.5	8.4	0.1
5	6800.0	0.2	0.6	2.4	0.1	18	6806.4	0.1	0.4	8.8	0.1
6	6800.5	0.1	0.7	3.1	0.1	19	6807.0	101.	0.6	9.4	61.
7	6800.8	14.	0.2	3.3	2.8	21	6808.0	12.	0.7	10.1	8.4
8	6801.4	59.	0.5	3.8	30.	22	6808.4	1.1	0.3	10.4	0.3
9	6801.9	78.	0.6	4.4	47.	23	6809.1	20.	0.8	11.2	16.
10	6802.4	0.1	0.6	5.0	0.1	24	6809.6	0.1	0.4	11.6	0.1
11	6802.8	39.	0.6	5.6	23.	25	6810.1	1.6	0.5	12.1	0.8
12	6803.4	180.	0.4	6.0	72.	26	6810.7	6.2	0.5	12.6	3.1
13	6803.8	418.	0.6	6.6	251.	27	6811.1	0.1	0.8	13.4	0.1

* Not included in cumulative feet of sand.

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LOWRY, ET AL OPERATING ACCOUNT

FEDERAL WELL NO. T-123

SPECIAL OIL FLOODING TESTS

Sample Number	Depth, Feet	Por. %	Perm. Approx.	Max Press Psi	Volume of Oil Thru cc	Flooding Time Mins	After Oil Flooding Oil Sat	After Oil Flooding Water Sat
OF- 6	6802.1	16.6	78.	70	24	1200	45.	19.
OF- 8	6804.7	20.6	418.	10-70	9,096	1380	81.	19.
OF-10	6806.7	17.7	101.	70	2,906	1140	85.	15.
OF-12	6808.7	18.3	20.	70	46	1260	50.	14.
OF-14	6810.4	14.3	6.2	70	638	1200	84.	16.
Average		17.5	62.				69.	17.

These laboratory oil flooding tests on 5 samples indicated an average residual water saturation of 17 per cent which should represent connate water.

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MEMORANDUM TO THE COMMISSION:

SUBJECT:: CASE 607: Commission called hearing for operators in San Juan, Rio Arriba, McKinley and Sandoval Counties to show cause why the oil production in those counties should not be prorated in accordance with Rules 505 of the statewide Rulesand regulations.

RECOMENDATION::

It is recommended that the Commission institute prorationing in the defined oil pools in this 4 county area. In connection with the institution of proration rules must also be applied to take care of all wildcats, and certain special rules should be adopted in order to inaugurate this prorationing procedure.

The order should contain the following pertinent Rules:

1. All of the defined pools should be exempt from Gas Oil ratio limitation with the exception of the South Blanco Tocito. (Exception to Rule 506)

2. All of the pools should be exempt from Rule 301, pertaining to Gas-Oil Ratio tests, with the exception of the South Blanco Tocito.

3.

SOUTH BLANCO TOCITO POOL

Rio Arriba County, N. M.

Pool Information:

Sixteen wells had been completed in the South Blanco Tocito Pool as of December 1, 1953. Three of these wells are presently operated by the Johnston Oil and Gas Company, and the remaining thirteen wells are operated by Lowry et al Operating Account.

Of the thirteen wells completed by Lowry in the South Blanco Tocito Pool, eleven are currently oil productive, one well is a gas well and one well is being used as a water injection well. Cumulative oil and gas production from inception through November 30, 1953 for the Lowry et al Operating Account wells is as follows:

	Cumulative Production		
	Oil, Barrels		*Gas, MCF
T-85	2,489		4,284
T-109	40,623		72,562
T-157	123,794		150,729
T-123	0	(Gas well - S.I.)	0
T-125	5,976		6,430
T-127	36,143		32,673
T-129	54,814		51,234
T-132	90,436		108,101
T-134	6,213	(W.I.well-10/7/53)	19,239
T-177	35,319		127,753
T-179	216,767		307,461
T-182	76,747		235,339
T-207	91,791		174,926
	781,112		1,290,731

* Estimated

The completion of Lowry et al Operating Account T-123, located in the NW/4, NE/4, Section 7, Township 26 North, Range 6 West, as a gas well

confirmed the existance of a gas-cap for the South Blanco Tocito Pool. Prior to the drilling of this well, the Pool was considered to be a depletion type reservoir. The gas-oil contact is estimated to be at approximately a subsea datum of -110 feet at the present time for the South Blanco Tocito Pool.

A pressure maintenance program by the injection of water was commenced for the Lowry et al Operating Account properties of the South Blanco Tocito Pool on October 7, 1953. Lowry's T-134 well, located in the NE/4 NW/4 Section 10, Township 26 North, Range 6 West, was converted from an oil producing well to a water injection well. Current injection rate into this well approximates 1500 barrels of water per day at a surface injection pressure of approximately 1900 p.s.i. Cumulative water injection from inception through December 11, 1953, is as follows:

	Water injected, barrels
October, 1953	14,511
November, 1953	41,607
12-1 thru 12-11-53	16,716
	72,834

There has been a substantial reduction in the producing gas-oil ratios for some of the wells offsetting the water injection well. These wells that have been affected are presently producing at approximate solution gas-oil ratios. It is too early in the life of the pressure maintenance program to evaluate results, and the program is being continued on an experimental basis.

South Blanco Tocito Pool - Rio Arriba County, NM

Month & Year	Monthly Oil Production, Barrels	Monthly Gas Production, M.C.F.	Gas-Oil Ratio Cu.Ft./Bbl.	Daily Average Oil Production, Barrels	Daily Average Gas Production M.C.F.	Cumulative Oil Production Barrels	Cumulative GAs Production, MCF
1953							
May	43,318	79,376	1832	1397	2561	566,290	889,408
June	38,026	77,806	2046	1268	2594	604,316	967,214
July	39,490	87,591	2218	1274	2825	643,806	1,054,805
August	35,224	71,287	2024	1136	2300	679,030	1,126,092
September	33,285	62,733	1885	1110	2091	712,315	1,188,825
October	35,254	49,392	1401	1137	1593	747,569	1,238,217
November	33,543	52,514	1566	1181	1750	781,112	1,290,731

BOTTOMHOLE PRESSURE TESTS

Datum -100 ft.

South Blanco Tocito Pool

Rio Arriba County, N. M.

Lowry et al Operating Account

Well No.	Date	Hours Shut In	Bottomhole Pressure
T-134	8-3-53	116	1782 p.s.i.
T-179	8-3-53	95	1969 p.s.i.
	10-19-53	116	1963 p.s.i.
T-132	8-3-53	90	1928 p.s.i.
	10-5-53	137	1912 p.s.i.
T-157	8-4-53	82	1885 p.s.i.
	10-5-53	144	1883 p.s.i.
T-109	8-3-53	103	1826 p.s.i.
	10-5-53	152	1828 p.s.i.
T-182	8-3-53	89	1934 p.s.i.
	10-7-53	48 days	1922 p.s.i.
T-207	8-3-53	77	1903 p.s.i.
	10-7-53	171	1906 p.s.i.
T-129	8-4-53	111	2020 p.s.i.
	10-7-53	168	1989 p.s.i.
T-177	8-3-53	81	2041 p.s.i.
	10-7-53	199	2004 p.s.i.
T-127	8-4-53	112	2091 p.s.i.
	10-5-53	76	2070 p.s.i.
T-85	8-4-53	142	1885 p.s.i.
	10-7-53	219	1892 p.s.i.
T-125	10-19-53	240	2108 p.s.i.

Johnston Oil & Gas Company

Rincon 6	10-5-53	72	2114 p.s.i.

Weighted Average Reservoir Pressure

Datum -100 feet

	Date	Bottomhole Pressure, p.s.i.
Original reservoir pressure:	7-26-51	2197
1st General Survey:	5-1-52	2130
2nd General Survey:	8-18 - 8-20-52	2095
3rd General Survey:	1-12 - 1-14-53	2037
4th General Survey:	4-27 - 4-28-53	2001
5th General Survey:	8-3 - 8-4-53	1980
6th General Survey	10-6 - 10-7-53	1971

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OIL & GAS PRODUCTION DATA

South Blanco Tocito Pool

Date	Oil Production Barrels	Gas Production MCF - 15.025 p.s.i.a
5-1-52	130,008	176,439
8-20-52	234,402	311,446
1-14-53	400,133	600,774
4-28-53	518,909	802,889
8-4-53	643,806	1,054,805
10-7-53	716,094	1,194,311

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Gas-Oil Ratio Tests

Well No.	Date	Gas-Oil Ratio	Accumulative Oil Production
T-134	6-26-53	4036:1	5833
	7-13-53	3412:1	6012
	7-26-53	4879:1	6151
T-179	6-14-53	1128:1	190,733
	6-24-53	1227:1	192,232
	7-8-53	1271:1	194,460
	8-8-53	1133:1	199,026
	10-1-53*	1415:1	210,370
	10-29-53	1898:1	211,863
	11 - 53*	1304:1	214,670
T-132	6-13-53	1752:1	73,383
	6-24-53	1626:1	74,484
	7-13-53	1573:1	76,373
	7-29-53	1622:1	77,973
	8-11-53	1548:1	78,934
	10-28-53	1653:1	85,868
	11 - 53*	1375:1	88,353
	12-4-53	1306:1	91,340
T-157	6-10-53	1976:1	96,581
	6-27-53	1540:1	99,176
	7-15-53	1644:1	102,293
	7-28-53	1503:1	104,295
	7-31-53	1768:1	104,806
	8-11-53	1339:1	106,150
	10-31-53	1441:1	119,822
	11-27-53	886:1	123,269
	12-4-53	739:1	124,358
T-109	6-9-53	1494:1	28,882
	6-26-53	1601:1	30,148
	7-14-53	1830:1	31,490
	7-27-53	2608:1	32,453
	8-12-53	2280:1	33,197
	10-28-53	1370:1	38,253
	11-28-53	1379:1	40,550
	12-4-53	682:1	41 ,016
T-182	6-12-53	4826:1	68,513
	6-25-53	5142:1	69,810
	7-5-53	5326:1	70,874
	7-21-53	5615:1	72,463
	8-15-53	5405:1	74,575
	11-30-53	3661:1	76,747

Well No.	Date	Gas-Oil Ratio	Accumulative Oil Production
T-207	6-25-53	2015:1	67,756
	7-6-53	2027:1	69,427
	7-21-53	2399:1	71,962
	8-13-53	2898:1	75,158
	8-23-53	2613:1	77,199
	8-26-53	2288:1	77,710
	8-27-53	2112:1	77,880
	8-28-53	2271:1	78,050
	8-31-53	2108:1	78,366
	10- 53 *	2390:1	85,941
	10-30-53	2311:1	88,135
	12-1-53	2283:1	91,791
T-129	6-12-53	1138:1	27,654
	6-26-53	1231:1	29,857
	7-6-53	1173:1	31,098
	8-19-53	1129:1	38,110
	10-29-53	880:1	50,024
	12-1-53	681:1	54,923
	12-2-53	733:1	55,111
T-177	6-3-53	3287:1	13,888
	6-24-53	4186:1	17,499
	7-6-53	4483:1	19,306
	7-29-53	4577:1	23,125
	8-19-53	4128:1	26,009
	10-31-53	4313:1	33,466
	11-30-53	7252:1	35,319
T-127	5-4-53	818:1	1,721
	6-4-53	951:1	7,160
	6-26-53	883:1	10,845
	7-4-53	883:1	11,879
	8-20-53	988:1	19,225
	10-2-53	870:1	26,541
	12-4-53	789:1	36,552
T-85	6-30-53	1192:1	278
	7-1-53	1256:1	298
	7-29-53	2199:1	788
	8-17-53	2241:1	1068
	10-31-53	1563:1	1993
T-125	10-28-53	1076:1	968

* Monthly production values - measured.
Cumulative oil values include only 1/2 of subject months production.

Location:	1980' FSL, 1980 FEL, Section 5, T26N, R6W
Elevation:	6,570' DF
Drilling Commenced:	June 15, 1953
Drilling Completed:	July 28, 1953
Commenced Producing:	Well was not commercially productive in the Tocito formation and was completed in the Dakota formation.
Surface Pipe:	10-3/4" OD casing set @ 478', with 175 sks cement.
Production Pipe:	7" OD casing set @ 7,446' with 200 sks cement.
Tubing:	2" EUE set @ 7,273'.
Total Depth:	7,452'
Acid Treatment:	None
Shot Record:	Not shot
Initial Potential:	Completed in the Dakota Formation. 1,670 MCF of gas per day.

Location:	1980 FSL, 660 FWL, Section 4, T26N, R6W
Elevation:	6,471' GL
Drilling Commenced:	May 6, 1953
Drilling Completed:	June 4, 1953
Commenced Producing:	June 21, 1953
Surface Pipe:	10-3/4" OD casing set @ 445', with 175 sks cement.
Production Pipe:	7" OD casing set @ 6,641' with 200 sks cement.
Tubing:	2" EUE set @ 6,640'
Total Depth:	6,691'
Acid Treatment:	None
Shot Record:	Not shot
Initial Potential:	23.05 barrels of oil per day

Location:	700' FNL, 1800' FEL, Section 7, T26N, R6W
Elevation:	6,680' GL
Drilling Commenced:	October 25, 1953
Drilling Completed:	November 24, 1953
Commenced Producing:	December 1, 1953

Surface Pipe: 10-3/4" OD casing set @ 470 feet with 175 sacks of cement.

Production Pipe: 7" OD casing set @ 6843 feet with 200 sacks of cement.

Casing Perforation:	6797 - 6812 feet with 90 shots.
Tubing:	2" E.U.E. set @ 6817 feet.
Total Depth:	6845 feet
Acid Treatment:	None
Shot Record:	Not shot.
Initial Potential:	Flowed 4,635 MCF gas per day through 20/64" choke. CP: 1000 p.s.i. TP: 750 p.s.i.

Location:	660 FNL, 660 FWL, Section 8, T26N, R6W
Elevation:	6,693' GL
Drilling Commenced:	September 4, 1953
Drilling Completed:	October 3, 1953
Commenced Producing:	October 9, 1953
Surface Pipe:	10-3/4" OD casing set @ 455', with 175 sks cement.
Production Pipe:	7" OD casing set @ 6,881' with 200 sks cement.
Tubing:	2" EUE set @ 6,859'.
Total Depth:	6,889'.
Acid Treatment:	None
Shot Record:	Not shot
Initial Potential:	612 barrels of oil per day.
Casing Perforation:	**6831 - 6846 feet with 90 shots.**

CORING RECORD

South Blanco Tocito Pool

Rio Arriba County, N. M.

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T-85

Core No. 1: 6644.0 - 6691.5: Cored 47.5 feet. Recovered: 47.5 feet: 13.5 feet black shale; 16 feet tight Tocito sandstone; 18 feet black shale.

D-83

Core No. 1: 6737.0 - 6759.0: Cored 22 feet. Recovered: 21.2 feet: 3 feet black shale; 7 feet tight shaly sandstone; 1 foot porous sandstone; 8.5 feet tight shaly sand; 1.5 feet shale.

Core No. 2: 6759.0 - 6778.0: Cored 19 feet. Recovered 19 feet: 19' shale.

T-125

Core No. 1: 6818.0 - 6858.0: Cored 40 feet. Recovered 19.4 feet: 15.8 feet shale; 3.6 feet sandstone.

Core No. 2: 6858.0 - 6889.0: Cored 31 feet. Recovered: 30.2 feet: Black shale.

T-123

Core No. 1: 6795.0 - 6845.0: Cored 50 feet. Recovered: 21.5 feet: 2 feet shale; 14.5 feet sandstone; 5 feet shale.

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RECORD OF DRILL STEM TESTS

South Blanco-Tocito Pool

Rio Arriba County, N. M.

D-83:

Drill Stem Test: 6728 - 6778'. Tool open 3-1/2 hours.

Weak blow air when tool opened. Died in 32 minutes.

After 1 hour, had weak blow air for remainder of test.

Recovered: 180' drilling mud. Very small show of oil.

Hydrostatic pressure: 3320 p.s.i. Flowing pressure:

0-95 p.s.i. 30-minute shut in bottomhole pressure: 190 p.s.i.

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SOUTH BLANCO TOCITO POOL

PRORATION PLAN

WELLS NOT ASSOCIATED WITH SOUTH BLANCO TOCITO POOL PRESSURE MAINTENANCE PROJECT:

Prorated in accordance with Statewide Allowable Program and New Mexico Oil Conservation Commission Order No. R-326, with gas-oil ratio limitations.

AREA ASSOCIATED WITH SOUTH BLANCO TOCITO POOL PRESSURE MAINTENANCE PROJECT:

The allowable for this area to be determined on the following basis and the oil so allocated to be produced in accordance with good reservoir management, providing no well shall be allowed to produce in excess of 150 percent of the top unit allowable:

Marginal Units:

Ability of well to produce.

Non-Marginal Units:

Normal Unit Allowable x depth proportional factor of 2.77

High Gas-Oil Ratio Proration Units:

Normal Unit Allowable x depth proportional factor of 2.77

Proration Units having wells converted to water injection purposes:

Allowable determined by production records or New Mexico Oil Conservation Commission tests.

Proration Units having wells abandoned as a result of water encroachment:

Allowable determined by production records or New Mexico Oil Conservation Commission tests.

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SOUTH BLANCO TOCITO POOL

DATA CONCERNING NO GAS OIL RATIO LIMITATION FOR WELLS ASSOCIATED WITH SOUTH BLANCO TOCITO POOL PRESSURE MAINTENANCE PROJECT

NO GAS OIL RATIO LIMITATION

	Daily Allowable, Bbls.	Gas-Oil Ratio, Cu.Ft./Bbl.	Produced Gas, MCF
T-177	111	7252	805
T-182	111	3661	406
T-207	111	2283	253
	333		1,464 MCF

GAS OIL RATIO LIMITATIONS

	Daily Allowable, Bbls.	Gas-Oil Ratio, Cu.Ft./Bbl.	Produced Gas, MCF
T-177	31	7252	222
T-182	61	3661	222
T-207	97	2283	222
	189		666 MCF

ALLOWABLE DIFFERENCE FOR ABOVE TWO STATED CONDITIONS:

144 barrels per day oil production
798 M.C.F. gas per day

VOIDAGE SPACE OF PENALIZED ALLOWABLE:

Oil Voidage

144 bbls x 1.49818 = 216 barrels

Free Gas Voidage

$$\frac{798 \text{ MCF} - 144 \times .834 \text{ MCF}}{.726 \text{ MCF}} = 934 \text{ barrels}$$

TOTAL GROSS VOIDAGE: 1150 barrels

PRESENT DAILY WATER INJECTION RATE: 1500 barrels

WATER INJECTED MINUS PENALIZED ALLOWABLE VOIDAGE:

1500 - 1150 = 350 barrels.

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION
SANTA FE - NEW MEXICO

STATE OF NEW MEXICO TO:

All operators and parties interested in the oil pools located in San Juan, Rio Arriba, McKinley and Sandoval Counties: NOTICE AND ORDER TO SHOW CAUSE.

CASE 607:

You and each of you are hereby given notice and are hereby ordered to prepare to show cause before the Oil Conservation Commission of New Mexico at Santa Fe, New Mexico, on December 17, 1953, at 9 o'clock a.m. in Mabry Hall, State Capitol, why the following named pools in San Juan, Rio Arriba, McKinley and Sandoval Counties, New Mexico, should not be classified or reclassified; extended or reduced; created or eliminated; designated or redesignated as to nomenclature and productive formations, respectively; and

Why the oil production, if any, should not be prorated and allocations fixed for the several pools under the provisions of Rule 505 of the statewide Rules and Regulations of the State of New Mexico, as follows:

Bloomfield-Farmington; Hogback-Dakota; Hospah; Lindrith-Dakota; Oswell-Farmington; South Blanco-Tocito; Rattlesnake-Dakota; Rattlesnake-Pennsylvanian; Red Mountain-Mesaverde; Stoney Butte-Dakota; Table Mesa-Dakota; Table Mesa-Mississippian; Wyper-Farmington; and pool designations for wildcat areas where substantial oil production has been encountered in any of the counties named hereinabove.

DONE at Santa Fe, New Mexico, this 27th day of November, 1953, upon motion of the Commission.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

R. R. Spurrier,
Secretary

S E A L

SOUTH BLANCO TOCITO POOL

RESERVOIR VOIDAGE ANALYSIS

Lowry et al Operating Account Properties

Pressure:
971 @ -100 datum
1986 @ -150 datum approximate reservoir centroid

perature: 175° Fahrenheit

olume Factor: 1.49818 @ 1986 p.s.i.

Gas: 834.36 cu. ft. @ 1986 p.s.i.

sibility Factor: .8450 @ 1986 p.s.i.

me of gas at standard condition to occupy 1 barrel of space in reservoir

$$= \frac{1997}{15.025} \times \frac{520}{635} \times \frac{1}{.84} \times \frac{5.61}{1} = 726 \text{ cu. ft.}$$

Reservoir Voidage - November, 1953

Lowry operated properties

Average daily oil production:	1118 barrels per day
Average daily water injected:	1387 barrels per day
Producing gas-oil ratio:	1566 cu. ft. per barrel
Solution Gas Produced:	834 cu. ft. per barrel
Free Gas Produced:	732 cu. ft. per barrel

Reservoir space voidage by oil:
1118 barrels x 1.49818 = 1675 barrels

Reservoir space voidage by free gas:
1118 barrels x 732 cu. ft. = 1128 barrels

Total Gross Voidage:	2803 barrels
Daily average water injected:	1387 barrels
Net Voidage, Lowry :	1416 barrels

Ex J Case 607
Lowry

SOUTH BLANCO TOCITO POOL

DATA CONCERNING NO GAS OIL RATIO LIMITATION FOR WELLS ASSOCIATED WITH SOUTH BLANCO TOCITO POOL PRESSURE MAINTENANCE PROJECT

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Well No.	Top of Tocito Sand	Elevation	Subsea Datum Top of Tocito Sand
T-85	6658	6483	-175
T-125	6830	6705	-125
T-123	6797	6692	-105
D-83	6740	6571	-169

Ex H
Case 607
Lowry

SOUTH BLANCO TOCITO POOL

Lowry et al Operating Account

Oil Production, Barrels

	September, 1953		October, 1953		November, 1953	
	Month	Daily Average	Month	Daily Average	Month	Daily Average
T-85	482	16	429	14	496	17
T-109	2019	67	1753	56	2142	71
T-125	0	0	2184	70	3792	126
T-127	5082	169	5690	183	4082	136
T-129	5082	169	5349	173	4082	136
T-132	2899	97	2410	78	4165	139
* T-134	0	0	0	0	0	0
T-157	4867	162	5296	171	3972	132
T-177	2860	95	2406	78	1853	62
T-179	5085	170	4405	142	4194	140
T-182	0	0	0	0	1581	53
T-207	4909	165	5332	172	3184	106
	33,285	1,110	35,254	1,137	33,543	1,118

* Converted to water injection well.
Last oil production August 1953.

SOUTH BLANCO TOCITO POOL

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