

Core No. 1 - (14,493-14,548') - Rec. 55' Morrow

- 14,493-14,493.4' Sandstone. White-light gray, fine-very coarse grained, quartzose, well-cemented, calcite cement. Single vertical fracture.
- 14,493.4-14,494' Black carbonaceous shale. Possible erosional contact with sandstone above.
- 14,494-14,497' Lime wackestone. Black, very finely crystalline, fossiliferous, dense, very argillaceous. Tight.
- 14,497-14,498.25' Black, slightly silty carbonaceous shale.
- 14,498.25-14,500' Black carbonaceous shale. Slightly calcite-cemented.
- 14,500-14,501' Sandstone. Gray-dark gray, very fine grained, quartzose, well cemented, calcite cement, well sorted, argillaceous. Tight.
- 14,501-14,501.4' Lime packstone. Fossiliferous, dark gray-black, arenaceous, very finely crystalline to conglomeratic. Load bedding structures. 2" black shale at base. Tight.
- 14,501.4-14,505' Sandstone. Gray-dark gray, silty, fine-very fine grained, poorly sorted, quartzose. Laminated with occasional gray shale. Tight.
- 14,505-14,508' Dark gray-black carbonaceous shale.
- 14,508-14,510' Sandstone. Dark gray, argillaceous, very fine-grained, well sorted, well-cemented. Laminated with black shale. Slightly calcite-cemented.
- 14,510-14,526.75' Black carbonaceous shale. Calcite cemented in upper 9".
- 14526.75-14527.6' Black micaceous shale. Slightly calcite-cemented.
- 14,527.6-14532.6' Sandstone. Dark gray, silty, quartzose, fine-very fine grained, well sorted, micaceous, well cemented with black shale beds and laminae. Tight.
- 14,532.6-14,537' Lime wackestone. Dark gray, very finely crystalline, fossiliferous, dense, micaceous.
- 14,537-14,538.5' Laminated sandstone, light gray, very fine-grained, argillaceous, well sorted and well cemented with black carbonaceous shale laminae.
- 14,538.5-14,541' Black carbonaceous shale.
- 14,541.5-14,544' Lime wackestone. Dark gray-black, very finely crystalline, slightly arenaceous, dense.
- 14,544-14,548' Black silty shale. Calcite-cemented. Sporadic light gray, very fine grained sandstone stringers.

Core analysis of the interval 14,494-14,548' indicates the sandstone to have less than 0.01 millidarcies of permeability and a range of 2-4% porosity.

14540

DEC 15 1981

U.S. GEOLOGICAL SURVEY

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments. **Items 22 and 24:** If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool. **Item 33:** Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

(Continued from front) 14,822-15,059 - 4000 gals Methanol w/120 gals.cla-sta 86,000 SCF N2; & 85 balls.
4000 gals. 7 1/2" MSR-123 w/20 gals. Cla-sta, 85 balls & 74,000 SCF N2.

37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES				38. GEOLOGIC MARKERS		
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
Core #1: Cut	14,493	14,548	(55') - Recovered 55'	Rustler Iamar Delaware Cherry Canyon Bone Spring Wolfcamp Strawn Atoka Morrow Morrow Clastics	1,155 4,937 4,998 5,992 8,714 12,200 13,634 13,750 14,271 14,615	

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
 Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 1/11/82			
Company Getty Oil Company				Connection Llano, Inc.					
Pool Undesignated				Formation Morrow				Unit	
Completion Date 8/10/81		Total Depth 15,200'		Plug Back TD 15,157'		Elevation 3749.7 GL		Farm or Lease Name Getty 15 Federal	
Csg. Size 4.5	Wt. 13.5	d 3.920"	Set At 15,200'	Perforations: From 14,483' To 15,059'				Well No. 1	
Tbg. Size 2.375	Wt. 4.7	d 1.901"	Set At 14,418'	Perforations: From To				Unit Sec. Twp. Rge. J 15 22S 33E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single Gas Well						Packer Set At 14,418'		County Lea	
Producing Thru tubing		Reservoir Temp. °F 203 @ 15,147		Mean Annual Temp. °F 60		Baro. Press. - P _g 13.2		State New Mexico	
L 14,418	H 14,480	G _g .6546	% CO ₂ .6547	% N ₂ 1.9459	% H ₂ S -	Prover -	Meter Run 3	Taps Flange	

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice 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	
SI							5625		Packer		
1.	3.0"	x	1.25	426.8	9	81	4775				45 min.
2.	3.0	x	1.25	426.8	14	84	4510				45 min.
3.	3.0	x	1.25	431.8	20	72	3825				75 min.
4.	3.0	x	1.25	436.8	28	75	2735				120 min.
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	7.885	62.93	440	.9804	1.236	1.039	625
2	7.885	78.49	440	.9777	1.236	1.038	776
3	7.885	94.34	445	.9887	1.236	1.039	945
4	7.885	112.25	450	.9859	1.236	1.040	1122
5							

NO.	P _t	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1.	.657	541	1.456	.927	45.2°	.6546	X X X X X X X X	X X X X X	670	371
2.	.657	544	1.466	.928						
3.	.664	532	1.434	.927						
4.	.672	535	1.442	.924						
5.										

NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²
1		4750.4	22,927	8851
2		4526.7	20,459	11319
3		3243.7	14,732	17046
4		2757.8	7,553	24225
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.864$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.388$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1,312$

Absolute Open Flow	Mcf/d @ 15.025	Angle of Slope	Slope, n .526
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Remarks: Made 1.7 barrels condensate, 45.2° @ 60°F

Orig. Signed by Approved By Commission Oil & Gas Insp.	Conducted By: Bill Krafft	Calculated By: Jim Micikas	Checked By: <i>[Signature]</i>
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