



00788382

Slope Tests

458	$1/2^{\circ}$
548	$3/4^{\circ}$
639	$3/4^{\circ}$
700	$1/4^{\circ}$
820	$1/4^{\circ}$
918	$1/4^{\circ}$
999	$1/2^{\circ}$
1120	$1/4^{\circ}$
1240	$1/2^{\circ}$
1331	$1/2^{\circ}$
1450	$3/4^{\circ}$
1540	$3/4^{\circ}$
1661	$3/4^{\circ}$
1750	$3/4^{\circ}$
1840	$1^{\circ}$
1933	$1\ 1/4^{\circ}$
2022	$1\ 3/4^{\circ}$
2112	$1\ 3/4^{\circ}$
2294	$2\ 1/4^{\circ}$
2385	$2\ 1/4^{\circ}$
2476	$2\ 3/4^{\circ}$
2566	$3^{\circ}$
2654	$3\ 1/2^{\circ}$
2745	$3\ 1/2^{\circ}$
2834	$3\ 1/4^{\circ}$
2925	$2\ 1/4^{\circ}$
2985	$2\ 1/4^{\circ}$
3076	$2\ 3/4^{\circ}$
3166	$2\ 1/4^{\circ}$
3287	$2\ 1/4^{\circ}$
3409	$2\ 3/4^{\circ}$
3497	$3^{\circ}$
3587	$3^{\circ}$
3681	$3\ 3/4^{\circ}$
3773	$4^{\circ}$
3863	$4\ 1/2^{\circ}$
3940	$4\ 3/4^{\circ}$
4042	$5^{\circ}$
4270	$5\ 1/2^{\circ}$
4372	$6\ 3/4^{\circ}$
4492	$6^{\circ}$
4575	$6^{\circ}$
4673	$5^{\circ}$
4750	$6\ 1/4^{\circ}$
4822	$6\ 1/4^{\circ}$
4900	$6\ 1/4^{\circ}$
5066	$5\ 1/4^{\circ}$
5158	$4\ 3/4^{\circ}$
5280	$6\ 3/4^{\circ}$
5360	$7^{\circ}$
5464	$7\ 1/4^{\circ}$
5515	$7\ 1/4^{\circ}$
5575	$7\ 3/4^{\circ}$
5645	$7\ 3/4^{\circ}$
5770	$7^{\circ}$
5859	$6\ 1/2^{\circ}$

Victor R. Gallagher #3 Government Heye

Location: C NE SW, Section 17, T. 9 N., R. 78 W., Jackson County, Colorado

Elevation: 8193 Kelly bushing

Spud date: 8-27-59

Completion date: 10-6-59

Total Depth: 5965 (driller)  
5962 (Schlumberger)

Formation Tops: (Schlumberger)

Pierre	Surface
Niobrara	4398
Frontier	5075
Mowry	5474
Muddy	5606
Thermopolis	5696
Dakota	5720
Fuson	5775
Lakota	5848
Morrison	5986 ?

Casing: 10 3/4" @ 367' w/200 sacks  
7" @ 5960' w/500 sacks

Perforations: 4 jets per foot through the following intervals:  
5934 - 5852  
5788 - 5758  
5738 - 5724  
5720 - 5718  
5698 - 5622  
5620 - 5610

### Well History

8/27/59	Spud in 8:00 p.m.	
8/28/59	Drilling surface hole	
8/29/59	Set 354' of 10 3/4" @ 367 with 200 sacks	
8/30/59	WOC - Nipple up	
8/31/59	373 - 696	
9/1/59	696 - 1312	
9/2/59	1312 - 1849	
9/3/59	1849 - 2209	
9/4/59	2209 - 2402	
9/5/59	2402 - 2576	
9/6/59	2576 - 2814	
9/7/59	2814 - 3089	
9/8/59	3089 - 3464	
9/9/59	3469 - 3770	
9/10/59	3770 - 3944	
9/11/59	3944 - 4107	
9/12/59	4107 - 4273	
9/13/59	4273 - 4413	
9/14/59	4413 - 4555	
9/15/59	4555 - 4746	
9/16/59	4746 - 4881	
9/17/59	4881 - 5001	
9/18/59	5009 - 5194	
9/19/59	5194 - 5368	
9/20/59	5368 - 5496	
9/21/59	5496 - 5581	
9/22/59	5581 - 5605	
9/23/59	5605 - 5662	
9/24/59	5662 - 5708	Core #1
9/25/59	5708 - 5747	Core #2
9/26/59	5747 - 5784	Core #2
9/27/59	5784 - 5827	
9/28/59	5827 - 5902	
9/29/59	5902 - 5965	
	5965 TD	
9/30/59	logging	
10/1/59	Drill Stem Test #1	
10/2/59	Running casing - set 7" @ 5960' w/500 sacks	
10/3/59	WOC	
10/4/59	Perforating	
10/5/59	Running tubing, rigging up for swabbing unit	
10/6/59	Swabbing down, testing	



500-510	Shale - lt. gray, Calc. plus some shaley line
510-520	Siltstone, sdy, Calc. cementation, lt. gray
520-580	Siltstone, lt. gray, occasional calcite
580-590	Sand 20%, very fine, slight limonite stain
590-620	Siltstone, lt. gray, sl. trace lm.
620-640	Shale, silty, trace calcite
640-670	Shale and siltstone
670-680	Shale and sandy siltstone
680-780	Shale and siltstone - trace loose sand grains in samples
780-940	Shale, med. dk. gray, siltstone streaks, bentonite common
940-1050	Sand - silty to med. gr., scattered black grains, carb at base, bent.
1050-1100	Shale and siltstone, med. gray, some sandy
*1100-1400	Siltstone, gray, sandy streaks
1400-1610	Shale and siltstone - lt. med. gray
1610-1630	Siltstone - lt. gray
1630-1730	Sandy siltstone - lt. gray
1730-1740	Sandy siltstone, as above; trace sand
1740-1750	Sand 50%, med. gray/green and black grains, tightly cemented
1750-1760	Sand 40%, as above
1760-1770	Sand 90% as above
1770-1780	Siltstone med. gray, sand 10% as above
1780-1830	Siltstone as above with trace of sand
1830-1870	Siltstone - slightly more sandy than above
1870-1890	Siltstone - less sandy
1890-1900	Shale - med. gray, silty
1900-1990	Shale and siltstone as above
1990-2100	Siltstone
2100-2110	Shale - med. gray
2110-2180	Shale and siltstone
2180-2200	Shale and siltstone - more sandy
2200-2320	Shale and siltstone, with trace fine sand, scattered black grains
2320-2380	Shale and siltstone, as above
2380-2400	Shale and siltstone, as above - more sandy
2400-2530	Siltstone - some sandy streaks
2530-2540	Siltstone as above; trace calcite
2540-2750	Siltstone as above - sandy streaks
2750-2760	Shale med. gray - light gray bentonite
2760-2770	Shale as above - trace sand
2770-2780	Shale as above - trace calcite
2780-2940	Shale as above - silty streaks
2940-2990	Shale - appears to be darker gray than above
2990-3000	Shale; 10% silty sandstone
3000-3120	Shale, as above, occasional trace of sand
3120-3130	Shale, as above; bentonite
3130-3260	Shale, as above
3260-3270	Shale, as above; bentonite
3270-3500	Shale as above
3500-3630	Shale, med. gray silty
3630-3670	Shale, lighter gray?, more silty than above
3670-3710	Shale as above, trace sand, glauc.
3710-3720	Shale as above, trace glauc. sand - calcite
3720-3730	Shale as above, trace sand as above.
3730-3760	Shale as above - 10% sand, med. grain, glauc.
3760-3770	Shale as above - trace sand
3770-3790	Shale as above - 10% white bentonite
3790-3800	Shale as above - decrease in bentonite
3800-3810	Shale as above - 10% white bentonite
3810-3860	Shale as above
3860-3880	Shale as above - 10% sand, glauc., Calc. cementation
3880-3890	Shale as above - trace sand
3890-3920	Shale and siltstone - med. to light gray
3920-3930	Shale and siltstone - trace sand, speckled
3930-3940	Shale and siltstone - 10% sand as above
3940-3950	Shale and siltstone - trace sand as above
3950-4400	Shale - silty - light to med. gray, occasional trace calcite
4400-4600	Shale, med. gray w/tan Calc. specks
4600-4650	Shale as above - less speckled shale, increase in lt. gray



VICTOR R. GALLAGHER #3 Gov't Hoya - Sample Description (Continued)

- 5560-5570 Shale, med. gray, Silic., very hard - trace sand, gray vfg.  
 5570-5580 Shale, as above  
 5580-5590 Shale, as above - some gray silty sand - tr. gray, tan qtzic sd.  
 5590-5595 trip - cavings!  
 5595-5600 Shale, as above - trace tan sand, vfg tightly cemented, some qtzitic, no fluor or cut.  
 5600-5605 (trip 5603) Cavings - trace tan hd sand as above  
 5605-5610 Trace sand as above  
 5610-5615 Sand 10% tan vfg. fairly friable, pass low par., sl fluor?  
 5615-5620 Sand 15% as above  
 5620-5625 Sand 10% as above  
 5625-5630 Sand 5% - as above - some very hard  
 5630-5635 Sand 5% - some larger grain size, with sl fluor - fair par?  
 5635-5640\* Sand 5-10% - med. gr. sub ang., pass stain?, sl. fluor, fair par.  
 5640-5645\* Sand - 5% - 10% as above  
 5645-5650\* Sand - 5% as above  
 5650-5655\* Shale - med. gray - sand scarce  
 5655-5660\* Shale - med. gray, some silty, no sand  
 5645-5650 Shale - med. dk. gray - trace sand  
 5650-5655 Shale - med. dk. gray - 5% sd, mfg, buff, friable, sl fluor.; bentonite pyrite  
 5655-5660 Shale, as above - 5% sd. as above  
 5660-5665 Shale, gray, tr. siltstone - trace sand, as above  
 5665-5670 Shale gray, silty to sandy - trace - 5% sand as above - bentonite  
 5670-5675 Shale, as above - trace sand as above - bentonite  
 5675-5680 Shale, as above; 20% lt. gray silty sd. - trace sand as above  
 5680-5685 Shale, gray silty -  
 5685-5690 Shale and Siltstone - trace sand as above - bentonite  
 5690-5695 Sand 10% - gray tan, tightly cemented  
 5695-5700 Siltstone and shale, same sandy - trace sand, tan, tightly cemented - 15 min arc sand 10%, tan, sl. fluor.  
 5700-5708 Core #1  
 5710-5715 Shale and Siltstone, med - light gray, trace hard gray sand  
 5715-5720 Shale and siltstone, as above becoming more sandy  
 5720-5725 Shale and Siltstone, as above, increase in sand  
 5725-5730 Sand 30% - tan - gray, vfg, u tite, interstitial clay, fluor  
 5730-5756 Core #2  
 5756-5760 Cavings  
 5760-5765 Sand 10% - tite, pass - low par - 90% dk shale  
 5765-5770 Sand 10% as above, some qtzitic - 90% shale  
 5770-5775 Shale, med. dk. gray, trace sand as above  
 5775-5780 Sand 15% - pass fair par - 85% shale as above  
 5780-5785 Sand 10% - 90% shale - bentonite  
 5785-5790 Sand 30% - bentonite  
 5790-5795 Sand 30% - bentonite  
 5795-5800 Sand 5% - blue green, bentonite (anhydrite)  
 5800-5805 Shale med. dk, trace sand - blue green bentonite or anhydrite  
 5805-5810 Shale, trace sand, blue green bent. 10%  
 5810-5815 Shale, sl. trace sand, trace blue green bent.  
 5815-5820 Shale & Siltstone, lt. gray - trace sand - reddish to buff  
 5820-5825 Shale, trace redd shale - 10% green anhydrite  
 5825-5830 Shale and Siltstone, trace red shale, trace sand  
 5830-5835 Shale and Siltstone, as above  
 5835-5840 Shale and Siltstone, as above  
 5840-5845 Shale and Siltstone, as above  
 5845 (Kelly Correction) Shale as above/trace red shale  
 5845-5850 Shale - trace red, trace green anh., trace sand  
 5850-5855 Shale and Siltstone, light med. gray - trace red, trace green anh.  
 5855-5860 Shale and Siltstone, as above, white bentonite, tr. sand  
 5860-5865 Shale, as above, increase in red and green anh.  
 5865-5870 Shale - red and green prominent  
 5870-5875 Shale - trace red and green, trace sand  
 5875-5880 Shale, as above  
 5880-5885 Shale, very little red and green, trace sand  
 5885-5890 Sand 10% - med. grain, sub ang, sl. stain  
 5890-5895 Shale, trace sand, as above; Chert pebbles  
 5895-5900 Shale; trace sand as above, some v. titely cemented  
 5900-5905 Sand 60%, slight fluor, pass stain, fair par



4650-4690	Shale - becoming lighter gray - slickensides
4690-4760	Shale - silty - med. to light gray
4760-4770	Shale as above - pyrite
4770-4780	Shale as above
4780-4800	Shale and siltstone - pyritic
4800-4810	Shale and siltstone - decrease in siltstone
4810-4830	Shale and siltstone - (30% speck shale, cavings?)
4830-4870	Shale, silty med. gray - pyritic, slickensides
4870-4880	Shale, silty Carb. specks - <u>trace sand</u> , green and black specks
4880-4890	Shale as above - no sand
4890-4980	Shale, med. to light gray - pyritic
4980-4990	Shale as above - 10% silty sand, glauc., Carb. specks
4990-5000	Shale as above - trace sand, as above
5000-5010	Shale as above - 5% sand, as above
5010-5020	Shale as above - trace sand as above
5020-5030	Shale - little more silty - trace sand - trace calcite
5030-5070	Shale, silty as above
5070-5080	Siltstone, sandy, Carb. specks and streaks
5080-5100	Siltstone and shale - med. light gray
5100-5110	Sand, 60%, silty, glauc., Carb.
5110-5120	Siltstone, sandy, light gray
5120-5130	Sand 50% light gray, tite, glauc.
5130-5140	Sand 30% as above
5140-5150	Sand 30% as above
5150-5160	Sand 10% as above; shale, 90% med. gray
5160-5170	Sand 10% as above; shale 90% as above
5170-5180	Shale and siltstone - med. gray, trace sand
5180-5190	Shale and siltstone, as above
5190-5200	Shale and siltstone, as above
5200-5210	Shale and siltstone, as above
5210-5220	Shale and siltstone, as above - trace sand
5220-5230	Shale and siltstone as above
5230-5240	Shale and siltstone - trace Calcite - slickensides
5240-5250	Shale and siltstone - 20% silty sand
5250-5260	Shale and siltstone
5260-5270	Shale and siltstone - trace Calcite
5270-5280	Shale and siltstone
5280-5290	Shale and siltstone
5290-5300	Shale, med. gray silty - siltstone, light gray
5300-5310	Shale and siltstone as above - 20% sand, tite, glauc.
5310-5320	Shale and siltstone - 10% sand as above
5320-5330	Shale and siltstone - trace sand as above
5330-5340	Shale and siltstone - 10% sand
5340-5350	Shale and siltstone - trace sand
5350-5360	Shale and siltstone
5360-5370	Shale and siltstone - becoming more silty
5370-5380	Shale - darker gray, more brittle
5380-5390	Shale - 50% darker as above; 50% light gray
5390-5400	Shale, med. light gray, silty
5400-5410	Shale, darker gray, sil. (60%); 40% light gray silty
5410-5420	Shale - 40% dark, sil. ; 60% light gray, silty
5420-5430	Shale - 40% dk. - 60% light
5430-5440	Shale as above
5440-5450	Shale - as above
5450-5460	Shale - increase in darker shale
5460-5470	Shale - med. dk. gray, brittle, sl. Calc. - trace sd, salt & pepper
5470-5480	Shale as above
5480-5490	Shale as above
5490-5500	Shale as above
5500-5510	Shale as above - trace Calcite - trace ten lime
5510-5520	Shale as above
5520-5530	Shale as above - 10% sand, tannish gray, glauc.
5530-5540	Shale as above - 10% sand as above
5540-5550	Shale - dk. gray to brownish gray - more silty - 10% sand aa
5550-5560	Trip - Cavings!

CORES

Core #1 5700-5708 (barrel jammed)  
Recovered 8' Shale and Siltstone, light gray, very hard.  
No saturation. Dips of 50°-60° indicated.

Core #2 5731-5756 Recovered 25'  
3 1/2' tite sand, very hard, fractured, slight odor, fluorescence.  
9 1/2' sand, very clayey, hard, no visible laminations,  
no fractures.  
2' sand, very clayey, as above. fractured, slight odor and  
fluorescence.  
5' sand, clayey as above, no fractures, no visible porosity.  
5' sand as above, slight fluorescence, possibly little more porous  
than above.

<u>Depth</u>	<u>Permeability</u>	<u>Porosity</u>	<u>Oil saturation</u>	<u>Total water</u>	<u>Coring time</u>
5731-5732	less than .01	6.0	11.7	10.0	40 Min.
32-33	14.0	15.4	9.7	29.2	16 "
33- 34	.36	7.1	12.7	22.6	17 "
34- 35	.56	5.7	24.6	21.0	17 "
35- 36	less than .01	4.3	0.0	93.0	15 "
36- 37	0.0	3.9	0.0	84.5	11 "
37- 38	0.0	4.3	0.0	83.7	12 "
38- 39	0.0	2.8	0.0	92.8	14 "
39- 40	0.0	4.0	5.0	77.5	12 "
40- 41	0.0	2.8	0.0	89.3	14 "
41- 42	0.0	4.0	0.0	82.5	16 "
42- 43	0.0	2.7	0.0	92.5	16 "
43- 44	0.0	6.7	22.4	32.8	16 "
44- 45	0.0	3.6	0.0	91.6	13 "
45- 46	0.0	4.6	0.0	80.5	14 "
46- 47	0.0	4.3	4.7	88.4	13 "
47- 48	0.0	4.5	4.4	93.3	15 "
48- 49	0.0	5.3	3.8	86.7	16 "
49- 50	0.0	4.5	4.4	84.5	14 "
50- 51	0.0	4.0	5.0	67.5	14 "
51- 52	0.0	3.3	6.1	69.7	12 "
52- 53	0.0	3.2	6.3	59.4	11 "
53- 54	0.0	3.3	0.0	78.8	11 "
54- 55	0.0	4.9	0.0	77.5	9 "
55- 56	0.0	4.7	0.0	66.0	8 "



## DRILL STEM TESTS

DST #1

5851 - 5963

Open 3 1/2 hrs.

CO2 to surface immediately mud 10 min.

Rec. 95' fresh water in drill cellars

Pressures recorded by test tool:

IHP	3142 PSI
IFP	1195 PSI
1" Orifice	1303 PSI
3/4" Orifice	1485 PSI
1/2" Orifice	1780 PSI
SIP (Surface)	2072 PSI
FFP	3070 PSI

Pressures recorded at surface:

		Separator	Orifice
9:45 A.M.	1" orifice		480# @ 60°
9:50		480# @ 63°	435# @ 60°
10:05		470# @ 63°	435# @ 60°
10:15		470# @ 62°	420# @ 58°
10:30		470# @ 60°	420# @ 58°
10:45		460# @ 56°	410# @ 54°
11:00		460# @ 54°	400# @ 44°
11:15		460# @ 54°	400# @ 43°
11:20	3/4" orifice	640# @ 60°	610# @ 60°
11:30		650# @ 62°	630# @ 60°
11:45		665# @ 60°	645# @ 52°
11:50		660# @ 59°	
12:00	1/2" orifice	780# @ 64°	770# @ 61°
12:15 P.M.		790# @ 65°	780# @ 60°
12:30		800# @ 65°	790# @ 60°

tst 65 gal. distillate	30 min.	(3/4" orifice)
tst 65 gal. distillate	23 min.	(1/2" orifice)

Oil 52° gravity at 66°



VICTOR R. GALLAGHER #3 Gov't Hoyer - Sample Description (Continued)

5905-5910 Sand 15% as above  
5910-5915 Sand 30% as above, Chert  
5915-5920 Sand 50%, better porosity, Chert. abundant  
5920-5925 Sand, trace, Chert, bentonite  
5925-5930 Sand, trace as above, Chert, bentonite  
5930-5935 Sand, trace as above, Chert abundant (Cong?)  
5935-5940 Sand 10%, poorly sorted, some very tightly cemented  
5940-5945 Shale and Siltstone, gray, sil., tr. sand, trace green anh  
5945-5950 Shale and Siltstone, gray  
5950-5955 Shale and Siltstone, gray  
5955-5960 Shale and Siltstone, gray  
5960-5965 Shale and Siltstone, gray  
  
5965 TD

\*Geolegraph wrong - Correction 5660 = 5645