FILE NOTATIONS

Entered in N I D File	✓	Checked by Chief	✓
Entered On S R Sheet	✓	Copy N I D to Field Office	✓
Location Map Pinned		Approval Letter	✓
Card Indexed	✓	Disapproval Letter	
I W R for State or Fee Land			

COMPLETION DATA:

Date Well Completed	8-24-60	Location Inspected	✓
OW ____ WW ____ TA ____		Bond released	
GW ____ OS ____ PA X		State of Fee Land	

LOGS FILED

Driller's Log 9-21-60

Electric Logs (No.) 5

E ____ I ____ E-I ____ GR ____ GR-N ✓ Micro ____

Lat. ✓ Mi-L ____ Sonic ✓ Others Caliper

Dipmeter

Form 9-331a
(Feb. 1951)

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

Land Office Salt Lake City

Lease No. SL - 067064

Unit Little Valley

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	X	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

March 9, 1960

Well No. 1 is located 1980 ft. from {N/S} line and 660 ft. from {E/W} line of sec. 29

NW/4 SW/4 Sec. 29 (¼ Sec. and Sec. No.) 26 South (Twp.) 20 East (Range) (Meridian)

Wildcat (Field) Grand (County or Subdivision) Utah (State or Territory)

The elevation of the ~~derrick floor~~ ground above sea level is 5924 ft. ungraded

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Approximately 40' of 20" conductor pipe will be set with sufficient cement to reach the surface and 500' of 13 3/8" surface pipe will be set and cemented to surface. An intermediate string of 9 5/8" casing will be set at 4000' into the top of the salt with 300 sacks cement and 5 1/2" or 7" casing to TD if the well is productive. Cores and tests will be taken of any oil shows noted. The expected stratigraphic sections and estimated depths are as follows: Chinle Shale 120', Shinarump Conglomerate 450', Upper Hermosa Lime 2260', Paradox Salt 3920', Base salt 6780', Mississippian Lime 6965', Devonian Lime 7470', Devonian McCracken Sand ± 7820', Cambrian Sand 7900'.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Murphy Corporation

Address 940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

By Harold Miller

Title Division Production Superintende

U. S. GOVERNMENT PRINTING OFFICE: 1958 O -463339

COMPANY MURPHY CORPORATION

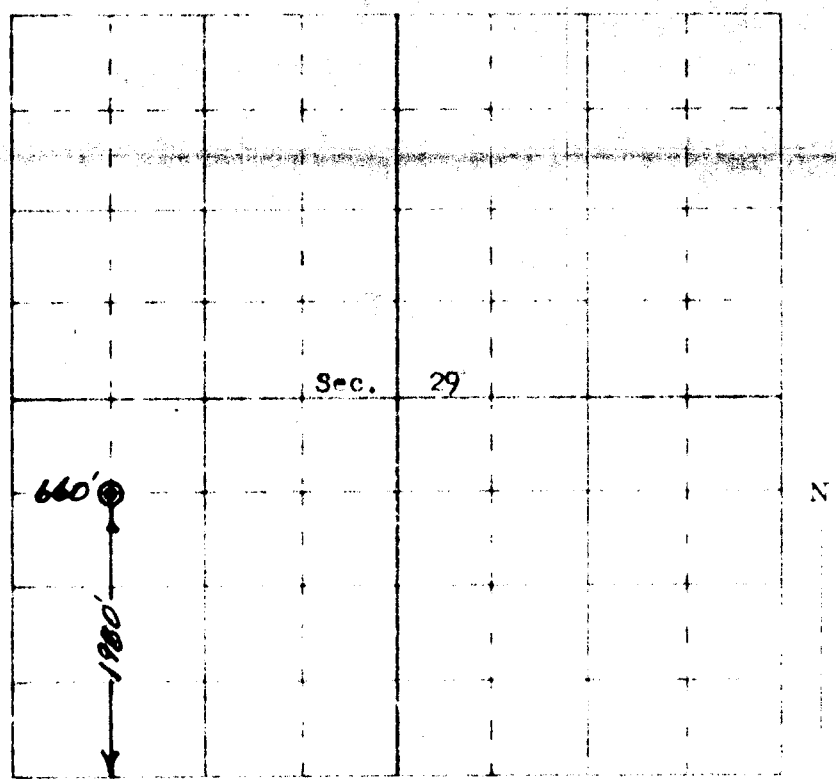
Well Name & No. LITTLE VALLEY UNIT # 1 Lease No.

Location 1980' FROM THE SOUTH LINE & 660' FROM THE WEST LINE

Being in Center NW SW

Sec. 29 T 26 S, R 20 E, S.L.M., GRAND COUNTY, UTAH

Ground Elevation 5923.8' ungraded ground



Scale — 4 inches equals 1 mile

Surveyed 7 March, 19 60

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

James P. Leese

Registered Land Surveyor.
James P. Leese
Utah Reg. No. 1472

SAN JUAN ENGINEERING CO. FARMINGTON NEW MEXICO

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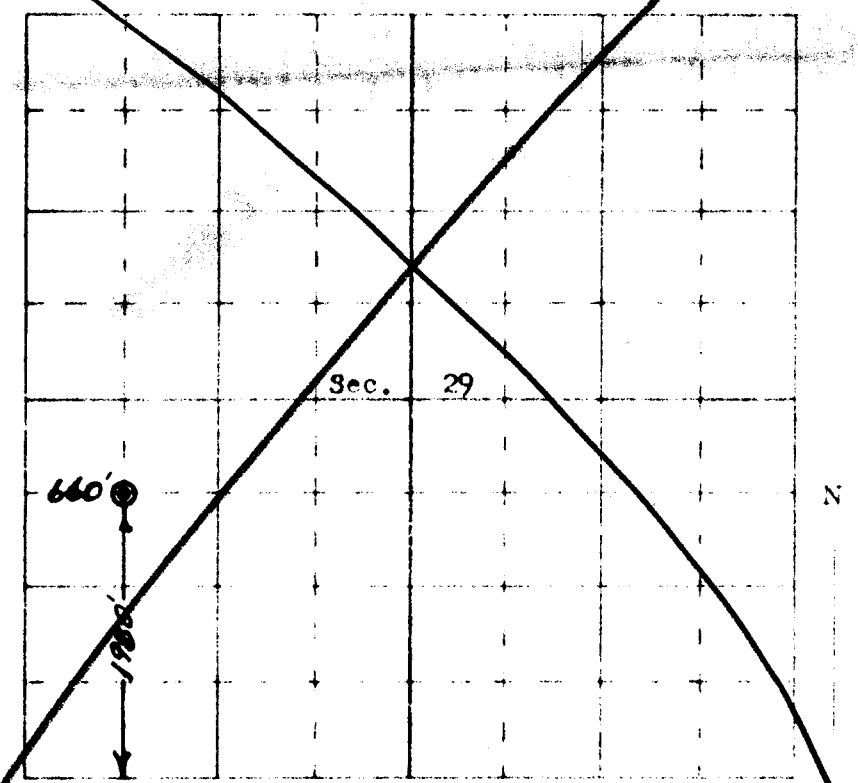

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James P. Leese

Registered Land Surveyor.
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Utah Reg. No. 1472

SAN JUAN ENGINEERING CO. FARMINGTON NEW MEXICO

WELL HISTORY

LITTLE VALLEY UNIT NO. 1

GRAND COUNTY, UTAH

MURPHY CORPORATION - OPERATOR

HISTORY	Page 1
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FUTURE POSSIBLE PRODUCING INTERVALS	9
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SUMMARY OF WELL HISTORY

WELL NAME AND NUMBER:	Little Valley Unit No. 1
FIELD:	Wildcat
LOCATION:	1980' FSL & 660' FWL Section 29, Township 26 South - Range 20 East
DRILLING UNIT:	
WORKING INTEREST:	26.1667%
REVENUE INTEREST:	21.1667%
ELEVATION:	5924' Ground 5936' RKB
WELL HEAD MARKER:	Top of 13 3/8" casing head collar. Casing head collar is 14.15' below RKB
CONTRACTOR:	Will I. Lewis Drilling Company
SPUDDED:	5:30 P.M. April 4, 1960
COMPLETED:	6:00 A.M. August 24, 1960
TOTAL DEPTH:	8600' Drillers Meas. (Note: Drilled to 8596' and logged. Drillers TD 8596' = Schl. TD 8592'. Later, 4' was drilled with rock bit making drillers TD 8600'.)
CASING:	20" Conductor @ 18' and cemented to surface. 13 3/8" casing @ 243.50' with 250 sacks. 9 5/8" casing @ 4212.15' w/350 sacks. Cut and pulled 3756' when P & A.
INITIAL PRODUCTION INTERVAL:	None. Well Plugged and Abandoned.
TUBING:	None. Well Plugged and Abandoned.
INITIAL POTENTIAL:	None. Well Plugged and Abandoned.
INITIAL ACID TREATMENT:	None. Well Plugged and Abandoned.
INITIAL FRAC TREATMENT:	None. Well Plugged and Abandoned.

COMPLETION DATA

CASING PROGRAM:

18' of 20" Conductor casing was set 12' below RKB with a dry hole digger.

Drilled a 9 5/8" hole to 485' and reamed 17 1/8" to 244' and set 7 joints (229.35') of 13 3/8" 48# H-40 8rd R-2 Casing, 14.15' below RKB at 243.50'. Cemented casing with 250 sacks regular cement and 2% $CaCl_2$. Good clean cement returns to surface. Plug down at 3:00 A.M. 4-9-60.

Drilled a 12 1/4" hole to 4218' TD. Ran and cemented 131 jts. (4200.15') of 9 5/8" 36# and 40# J-55 LT&C Range-2 casing as follows:

7 jts. 9 5/8" 40#	235.15'
123 jts. 9 5/8" 36#	3960.68'
1 jt. 9 5/8" 40#	4.32'
Total casing in hole	4200.15'
Landed below RKB	12.00'
Casing Set at	4212.15'

Cemented with 350 sacks of 50-50 cement and pozlin, 2% gel and 24% salt. Bumped plug at 6:10 P.M. 5-24-60. Ran temperature survey and indicated top of cement at 3900'.

COMPLETION SUMMARY:

The Little Valley Unit #1 Well was spudded at 5:30 P.M. April 4, 1960. Prior to this date, 18' of conductor casing had been set with a dry hole digger. A 9 5/8" hole was drilled to 485' and reamed with a 17 1/8" reamer to 244'. Ran and cemented 13 3/8" surface casing at 243.50'. Plug down at 3:00 A.M. 4-9-60. W.O.C. Drilled out from under surface 4-11-60 drilling a 12 1/4" hole with air. Drilled to 3088' and lost circulation. Ran caliper log and found three lost circulation zones below 2700' at 2770', 2860', and 2975'. The upper and lower cavities were easily healed using Lynes Straddle packers and pumping in cement, diesel oil, and lost circulation material. After 785 sacks cement and approximately 300 sacks calseal along with gilsonite, gel, diesel oil, tuf plug, fiber seal, brush, and other lost circulation material, the zone at 2860' was squeezed off on the ninth squeeze job attempt. On the ninth squeeze job a nylon bag was set in the lost circulation section and filled with 120 sacks calseal. After allowing the calseal to set up the plug was drilled with returns. Drilled to 4218' and

ran and cemented 9 5/8" intermediate string of casing. Casing was set at 4212.15' and bumped plug at 6:10 P.M. 5-24-60. Ran temperature survey and indicated top of cement at 3900'. Drilled plug 5-28-60 with an 8 3/4" rock bit using salt water as drilling fluid; drilling lime, shale, and salt. Drilled to 6983' and had small show of oil and gas. Ran 8 production tests and a DST with no good indication of oil. Large salt water flow zones were controlled with 14# salt saturated mud. Shut in pressure at surface 600#. Salt water flows were calculated flowing at the rate of 168 BSWPH on a 3/4" choke with 175# flowing pressure, and 280 BSWPH open flow. Mudded up and drilled ahead to 7200' and cut Core #1. Drilled to 7625' and ran DST #10 7550' to 7625', recovered 5' of drilling mud. Went in hole and cut Core #2 7625' to 7674', recovered 49'. Core was generally tight with vuggy porosity and porous fracs which contained lost circulation material. No indication of water. Ran DST #11 7630' to 7674' and recovered 276' gas and 324' of oil and gas cut mud. No free water. Cut Core #3 7675' to 7694', recovered 19'. No show of water. Having great deal of lost circulation trouble in vugs and fractures. DST #12 7680' to 7701'. Recovered 1670' water and gas cut mud, and 1800' salty sulphur water. Went in hole and cut Core #4 7701' to 7760', recovered 59'. Cut Core #5 7760' to 7790', recovered 30'. Core wet. Drilled to 7839' and cut Core #6 7839' to 7849', recovered 10'. Core wet. Went in hole with rock bit with water courses removed and drilled to 7863'. Cut Core #7 7863' to 7865', recovered 1' and 2". Wet and no show. Drilled to 8016' with rock bit and cut Core #8 8016' to 8051', recovered 35'. Entire core wet. Drilled to 8130' and cut Core #9 8130' to 8136', recovered 5½'. Cut Core #10 8136' to 8163½', recovered 27½'. Cut Core #11 8163½'to 8175', recovered 11½'. Lost circulation at 8175' and 8180'. Drilled ahead with rock bit and lost circulation material in mud. (There was to much lost circulation material in the mud to core, and the water courses were cut out of the rock bit.) Cut Core #12 8210' to 8258' and core barrel jammed by lost circulation material. Recovered 48'. Cut Core #13 8358' to 8304', recovered 46'. Lost circulation at 8304'. Mixed lost circulation material and drilled with rock bit from 8304' to 8309'. Penetration too slow. Cut Core #14 at the rate of 1 to 2 hrs per foot from 8309' to 8316' and recovered 7'. N.S. and wet. Cut Core #15 at the rate of 1 hr per foot from 8316' to 8339' and recovered 23'. No show of oil, gas, or water. Cut Core #16 8339' to 8390' (penetration 30-40 MPF) and recovered 51'. Cut Core #17 8390' to 8398½' and lost circulation. Recovered 6.8' and ran rock bit and lost circulation material. Regained circulation and cut Core #18 from 8406' to 8439' and recovered 33', N.S. Cut Core #19 8439' to 8451' and recovered 9' dol, no show of oil, gas, or water. Strapped out of hole. S.L.M. 8451' - 8454'. Well started flowing salt water while pulling core with 13# mud in hole. Ran rock bit and conditioned mud to 13.2#; killed water flow and began losing a little mud. Pulled pipe and ran Schlumberger Gamma Ray-Neutron Log, Sonic Log, and Laterolog. Well began flowing. Made trip to condition mud.

Pure Oil Company decided to take over operations and drill approximately 100' more. Cut Core #20 from 8454' to 8469', recovered 15' dolomite and sandstone, N.S. Drilled from 8468' to 8486'. Cut Core #21 8486' to

8501' and recovered 14' dolomite and siltstone, N.S. Drilled to 8596' Drillers Meas. and logged well. 8596' Drillers Meas. = 8592' Log Meas. Conditioned hole and attempted to run DST 8456' to 8522' with straddle packers, packers failed. Reset packers at 8444' to 8522' and packers again failed. Ran bit, circulated and conditioned hole, and drilled 4'. Attempted DST 8403' to 8523' and packers failed. Pure Oil Company released well to Murphy Corporation at 4:00 P.M. 8-19-60.

Plugged well as follows:

Plug #1 8239' to 8370' with 50 sx., 3% HA-5
Plug #2 7540' to 7670' with 50 sx., 3% HA-5
Plug #3 6940' to 7070' with 50 sx., 3% HA-5

Pulled open ended drill pipe to 4213' and W.O.C. 5 hrs. Displaced mud with water. Flow tested well for 44 hrs flowing at the rate of 40 bbls salt water per hour with a trace of oil and gas.

Plugged well as follows:

Plug #4 5966' to 6103' with 50 sx., 3% HA-5
Plug #5 4141' to 4272' with 50 sx., 3% HA-5

Completed plugging at 6:45 P.M. 8-22-60. W.O.C. 3 hrs. Laid down drill pipe. Shot off 9 5/8" casing at 3756'. Laid pipe down and plugged well as follows:

Plug #6 202' to 243' with 15 sx.
Plug #7 Surface with 10 sx.

Rig was released at 6:00 A.M. 8-24-60. A permanent pipe marker and well sign was erected. Plans are to back fill pits in approximately 30 days or as soon as they dry out.

SURFACE EQUIPMENT RECORD

1. Well Head Equipment: None. Well Plugged and Abandoned

2. Lifting Equipment: None. Well Plugged and Abandoned

3. Compressor, Other Installations: None. Well Plugged and Abandoned

4. Storage Facilities: None. Well Plugged and Abandoned

SUB-SURFACE EQUIPMENT RECORD

1. Packers: None. Well Plugged and Abandoned

2. Depth Installed: None. Well Plugged and Abandoned

3. Rods: None. Well Plugged and Abandoned

4. Pump: None. Well Plugged and Abandoned

5. Gas Valves: None. Well Plugged and Abandoned

WELL LOG DATA

TYPE OF LOG:	INTERVAL LOGGED:
McCullough Caliper Survey Log	242' to 3070'
Schlumberger Temperature Log	250' to 3912'
Schlumberger Gamma Ray-Neutron Log	50' to 8451'
Schlumberger Sonic Log	4216' to 8451'
Schlumberger Laterolog	4216' to 8450'
Schlumberger Dipmeter Log	4216' to 8451'
Schlumberger Gamma Ray-Neutron Log	8451' to 8596'
Schlumberger Sonic Log	8451' to 8592'
Schlumberger Laterolog	8450' to 8592'

LOG TOPS:

Chinle Shale	446'	Salt Base	7450'
Moenkopi	798'	Mississippian	7548'
Coconino	1263'	Ouray	8080'
Cutler	1343'	Elbert	8250'
Upper Hermosa	2733'	Devonian McCracken Sd.	8386'
Paradox Salt	4216'	Cambrian	8578'

DRILL STEM TEST RECORD

DST #1 - 6763' to 6805' - Straddle Packers - No water cushion. Tool opened at 4:15 PM with good blow. Shut in at 4:19 PM for ISIP. Re-opened tool at 4:44 PM. Gas to surface in 12 mins. Remained steady throughout test. Estimated 50,000 cubic feet per day. Closed tool at 4:55 PM 6/5/60. No fluid after 12 hr test. During test blowout preventers were closed to stop water flow from the upper zones. SIP 800# at surface. Opened blow line to pits. Flowed gas, oil, and salt water for 30 mins before pressure was depleted. Oil recovered is black 31.5 gravity sweet crude. Salt water flowed at the rate of 280 BPH with two to five percent live gas and oil. Recovered 728' light green oil (728' = 10 bbls) and 1997' of gas cut salt water (1997' = 28 bbls). Hydro 3370, ISIP 3370#, IFP 240#, FFP 940#, No final SIP; clock stopped. Bottom packer did not hold.

Production Test #2 - 6004' to 6044' - Lynes Straddle Packers: Tool open at 10:50 AM. Recovered new fluid to surface at 11:20 AM. Flowed well at calculated rate of 168 BPH of salt water with trace of oil and 3/4" choke with 175# FTP. Closed tool at 12:00 noon. 10 min SIP on surface 600#.

Production Test #3 - 6590' to 6630' - Lynes Straddle Packers: Filled drill pipe with fresh water to hydraulically set packers. Tool open for 30 mins. Received intermittent weak blow for 30 mins. Closed tool. This considered as dry test. The weak blow is believed caused by air working out of the load water.

Production Test #4 - 6220' to 6260' - Lynes Straddle Packers: Tool open 30 mins. Received weak blow for 10 mins, and no blow for 20 mins. Considered dry test.

Production Test #5 - 6430' to 6470' - Lynes Straddle Packers: Tool open for 15 mins with no blow. Considered dry test.

Production Test #6 - 6430' to 6983' - Lynes Straddle Packers: Tool open for 1 hr. Received small pencil size stream throughout test period. This flow believed to be coming from the zone tested on DST #1.

Production Test #7 - 6165' to 6205' - Lynes Straddle Packers: Tool open for 15 mins with no blow. Considered dry test.

Production Test #8 - 6165' to 6983' - Lynes Straddle Packers: Tool open for 30 mins. Recovered pencil size streams throughout test period. This flow believed coming from same interval as DST #1 and Production Test #6.

DRILL STEM TEST RECORD: (CONTINUED)

Production Test #9 - 6000' to 6040' - Lynes Straddle Packers: Tool open 70 mins. Received immediate strong blow. Flowed fresh water 31 mins, gas and oil cut mud 5 mins, salt water cut mud 2 mins, then salt water with trace of oil 35 mins. Closed tool and reversed out recovery which was salt water with trace of oil and gas.

DST #10 - 7550' to 7625': Tool opened with weak blow, died in 5 mins. Tool open 1½ hrs. IHP 5295#, ISIP 50# (30 mins), IFP 25#, FFP 25# after 1½ hrs, FSIP 25# (30 mins), FHP 5270#. Recovered 5' drilling mud.

DST #11 - 7630' to 7674': 3/4" bottom choke. Tool open with weak blow under 2" of water decreasing at end of test. Tool open 4 hrs. Recovered 276' gas and 324' oil and gas cut mud. No free water. IHP 5525#, ISIP 2565# (30 mins), IFP 50#, FFP 140#, FSIP 1905# (30 mins), FHP 5405#.

DST #12 - 7680' to 7701': Tool open 4 hrs with good blow throughout test. Recovered 1670' water and gas cut mud, 1800' salty sulphur water. (Salt 45,000 PPM & Wt 8.9#). ISIP 3940# (30 mins), FSIP 2585# (30 mins), IFP 450#, FFP 1685#, IHP 5685#, FHP 5665#.

WELL RECAP

Well Name: Little Valley #1

	Murphy Corp.		Pure Oil	
	Units	Amount	Units	Amount
Magcogel	2163	$ 5,636.78	4	$ 10.42
Magcobar	13621	41,186.75	6316	19,014.37
Chip Seal	260	1,057.28	103	427.45
My Lo Jel	358	2,720.80	300	228.00
My Lo Jel Pres.	217	1,911.00	4	92.00
Driscose	92	3,827.20		
Mud Fiber	116	452.40	216	842.40
Cottonseed Hulls	145	652.50	4	18.00
Lime	415	913.00		
Magco Fiber	555	2,303.25	105	435.25
Fiber Seal	308	1,278.20	36	149.40
Cello Seal	173	1,332.10	350	2,695.00
Afrom	113	1,430.00		
Spersene	98	1,274.00	7	91.00
Quebracho	19	256.50	(2)	(27.00)
Soda Ash	97	824.50	6	51.00
Tuff Plug	82	984.00	48	576.00
Salt Gel	2209	6,502.41	671	1,975.17
Defoamer B.C.	5	150.00		
Super Plug	60	670.00		
Aluminum Sterate	2	37.50		
Caustic Soda	36	504.00	7	98.00
High Yield	155	441.44		
Hi Vis Driscose	16	665.60	24	360.00
Drilling Detergent	27	405.00		
Magco Mica	3	11.70	446	1,739.40
Sodium Bichromate	1	29.00		
Gypsum	(14)	(40.60)	14	40.60
Cement	475	950.00		
Magco Wool	33	153.45	16	74.40
Tech. Chem.	7	2,002.00		
Sure Check Tool	1	1,500.00		
Total Products	21848	$82,022.00	8675	$30,943.36
Drayage		9,221.50		3,288.38
Sales Tax		2,047.48		827.57
Grand Total		$93,290.98		$35,059.31

DRILLING MUD SUMMARY

A water base mud with gel and lime was used to drill the surface hole to 485'. Surface casing was set and plans were to drill to the top of the salt with air (expected at 4200'). Water was encountered at 642' and additional water was picked up at 1200'. Large amounts of soap were used in an effort to dry up water seepage. At 2300' the system was changed over to aerated lime water to reduce the use of soap. Lost circulation zones were encountered at 2770', 2860', and 2995'. These zones were filled with salt water. The upper and lower cavities were easily healed using Lynes packers and pumping cement, diesel oil, and lost circulation material into the cavities. 785 sacks of cement and approximately 300 sacks cal seal, lost circulation material, brush and tree branches were pumped into the lost circulation zone at 2860' with no results. This lost circulation material was spotted at the cavity in two joints of 8 5/8" casing on the end of the drill pipe and pumped into the cavity with pump pressure. On the ninth squeeze job attempt the zone was squeezed off with a nylon bag which was set in the lost circulation zone and filled with 120 sacks cal seal. After allowing the cal seal to set up, the plug was drilled with returns. Drilling was continued with aerated water to 4200'. An intermediate string of casing was set on top of the Salt Section and cemented. Salt water was used as drilling fluid while drilling the Salt Section. A strong flow of salt water was encountered at 6040'. The system was changed over to a salt water base mud at 6900' and continued to T.D. Since there were many lost circulation zones in the Salt Section and below, the mud weight had to be kept as low as possible. Mud weights lower than 13# would allow the salt water flow to kick. It is estimated that at least 2/3 of the total mud cost was spent combating lost circulation and water flows.

Grand	Big hat W/C	Utah	29	26 S	20 E	Murphy Corporation		
COUNTY San Juan	FIELD	STATE	SEC.	TOWNSHIP	RANGE	OPERATOR		
Will L. Lewis Drlg Co	Little Valley Unit	4-5-61			8-3-60	Kirby		
CONTRACTOR	LOC. 5 MI S 93 RR	SPUD	US	INTER.	COMP.	TOOL PUSHER		
4½ FH 5½	19 6½ 7½ x 2¼	#1 Wall 218 P	oil Wall 218 P					
TOOL JOINTS SIZE & TYPE OD	DRILL COLLARS NO. OD ID	PUMP NO. 1 7½ x 15	PUMP NO. 2 7½ x 15					

Wesley Thompson — SALESMAN — DIVISION

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT 1000 LBS	RPM	VERT DEV.	PUMP PRES.	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT	MUD VIS	REMARKS Tops
1	9⅞	Reed	V51			250	250	23½	All	100	¼	500						70	
2	9⅞	HTC	OSC1		63315	488	238	16½	30	100	¼	500						65	
1	12¼	Reed	HO			244	244	21	All	100	¼	300							
		Set	244'	of	13⅜	csg	w/200	Sks	Bulk	cement									
1	12¼	Reed	YM1			778	534	20½	20	90		300	Air						
2	12¼	Sec	M4L			1481	703	23¾	30	90	¼	300	Air						
3	12¼	CP	EHS			1943	462	36¼	30	90		300	Air						Cotton
4	12¼	Reed	YM			2318	375	24	30	90	1½	300	Air						
5	12¼	HTC	W7		45055	2554	236	19½	40	100	1½	300	Air						
6	12¼	Reed	YM		Retip	2644	90	10	40	75		300	Air						
7	12¼	Sec	M4L			2729	85	10½	40	100		300	Air						
8	12¼	Smith	T2			2784	55	11	40	100		250	Air						
9	12¼	HTC	W7		45063	2889	105	15¾	40	100	2	250	Air						
10	12¼	Sec	S6			3022	133	17½	40	100	3	300	Air						
11	12¼	CP	ES2		Retip	3088	66	7	40	100	3	300	Air						

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT 1000 LBS	RPM	VERT DEV.	PUMP PRES	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT	MUD VIS	REMARKS
12	12¼	CP	EHW		Retip	3231	143	18½	30	100	3°	300	Waste	Fish	&	Lost			Days
13	12¼	HTC	OWC		47841	3412	181	29¾	40	70	2¾	300							
14	12¼	HTC	W7	¾	24829	3586	174	30¾	40	70	2¾	300						5/16	
15	12¼	Reed	V51			3704	118	33¾	40	70	2¾	300							
16	12¼	HTC	W7RT		47203	3748	44	20½	30	70	2¾	300							
17	12¼	HTC	W7		51771	3860	112	21¼	30	70		300						5-18	
			OWV			3970	110	22	40	70		300							
			OWC			4052	82	20	40	70		300						4/20	
			YH			4175	123	24	39	90	2¾	150	34	5	16	water	Lost		
			WR			4176	1	28	Running and Cone										
22	8¾		W7R			4220												5/23	
					Ran	4250'	of	9⅝"	CSG										
1	8¾	HTC	OSC6J	¾	23000	4539	329	20½	15	90	3°	1400	45	5½					
2	8¾	HTC	OSC6J	¾	21450	4903	341	17¼	9	100	5°	1400	50	5½					
3	8¾	HTC	OSC6J	Dull	11683	5169	266	19½	2	100	4°	1400	50	5½	16	16		5/31	
4	8¾	HTC	OSC6J	¾	24551	5622	453	28	10	100	4°	1400	50	5½	16	16			BSF
5	8¾	HTC	OSC	Dull	11677	6041	419	20	10	100	4½	1350	50	5½				6/5	BSF
6	8¾	HTC	OSC		41629	6902	861	23½	4½	100		1400	50	5½				6/6/60	BSF

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COUNTY | FIELD | STATE | SEC. | TOWNSHIP | RANGE | OPERATOR

WILL I LEWIS DRLG | WILLIAMSBURG FI

CONTRACTOR | LOC. | SPUD | 1/2 | INTER. | COMP. | TOOL PUSHER

TOOL JOINTS SIZE & TYPE | SP | DRILL COLLARS NO. | OD | ID | PUMP NO. 1 | PUMP NO. 2

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT. 1000 LBS	RPM	VERT DEV.	PUMP PRES.	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT.	MUD VIS.	REMARKS
7	8¾	HTC	OSC1C		11574	6983	81	3	[illegible]	100	3	1100	55	5½			42	52	135 FPH
8	8¾	HTC	W7		93010	7200	17	3	[illegible]	100	3	1100	55	5½			[illegible]	[illegible]	6-11-60
1	8¾	OHS	Core			7230	30	14½	26	100		1200	50	5½			91	50	
9	8¾	CP	EMIV		201057	7296	66	13	40	55		1000	50	5½			47	55	
10	8¾	HTC	OWV		25014	7421	125	22	45	70	2	1000	50	5½			45	59	100 FPH
11	8¾	HTC	OWVJ		23981	7469	48	21½	40	70		1000	55	5½			[illegible]	55	
12	8¾	HTC	OSCJ		27274	7489	25	9½	40	70		1000	55	5½			[illegible]	48	
13	8¾	HCO	YS		201166	7506	22	15¾	[illegible]	70		1000	54	5½			53	56	
14	8¾	HTC	OWV		25052	7528	22	13½	[illegible]	70		1000	54	5½			52	48	[illegible]
15	8¾	HTC	OWC		67479	7549	21	14	[illegible]	70	2	1000	54	5½			49	47	135 FPH
16	8¾	HOS	72		532215	7557	8	5	40	70		1000	54	5½			44	47	[illegible]
17	8¾	HTC	W7R		26479	7596	39	27¾	45	70	1½	1000	55	5½			[illegible]	50	
18	8¾	HCO	YH		101552	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				5½					
19	8¾	HTC	W7		65360	7602	6	7¾	45	70		1000	54	5½			44	54	
20	8¾	HTC	W7R-2		70398	7625	22	20	35	70		1000	50	5½			[illegible]	[illegible]	

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT. 1000 LBS	RPM	VERT DEV	PUMP PRES	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT.	MUD VIS.	REMARKS
2	8¾	OHS	DIA		Core	7674	49	49	44	70		600	55	5½			106	58	DST
21	8¾	HTC	W7R-2		73569	7675	50	20	45	70	1½	1100	55	5½			106	62	
3	8¾	CHIS	DIA		Core	7693	14	8½	24	56		1200	55	5½			106	64	DST
22	8¾	HTC	W7R-2	RR	73569	7701	8	6½	35			1200	57	5½			107	60	Palenite
4	8¾	CHIS	DIA		Core	7760	59	25¾	30	60		1250	57	5½			136	100	
5	8¾	CHIS	DIA		Core	7789	29	11¼	30	60		800	55	5½			134	80	135 FPH
23	8¾	HCO	YH			7819	30	13¼	55	60		800	55	5½			134	85	
24	8¾	HCO	YH			7829	20	8	55	60		1250	57	5½			134	95	
6	8¾	CHIS	DIA		Core	7849	10	13	25	60		800	55	5½			134	96	
25	8¾	HTC	W7R-2		RR	7863	14	13	45	70		1000	56	5½			135	110	
7	8¾	CHIS	DIA		Core	7865	2	1½	30	70		500	54	5½			135	125	
26	8¾	HCO	YH			7898	33	16½	55	70		500	54	5½			138	64	
27	8¾	HCO	YH			7939	41	18¾	55	70		750	54	5½			138	58	
28	8¾	HTC	W7		93055	7971	32	20½	55	70		750	54	5½			132	65	
29	8¾	HCO	2CWN			7984	13	10½	55	70		750	54	5½			133	68	
30	8¾	HCO	YH			8016	32	23	55	70		750	54	5½			132	58	
8	8 11/16	CHIS	DIA		Core	8051	35	17½	25	60		850	50	5½			132	60	
31	8¾	HCO	YH			8075	49	24	55	60		800	54	5½			13	53	
32	8¾	HCO	YH			8118	23	9½	55	60		600	54	5½			141	54	
33	8¾	HCO	YH			8130	12	10	55	60		800	50	5½			142	56	7-16

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COUNTY	FIELD	STATE	SEC.	TOWNSHIP	RANGE	OPERATOR
		UTAH	29	26S	20E	

CONTRACTOR	LOC.	SPUD	US	INTER.	COMP.	TOOL PUSHER
WILL I LEWIS DRL. CO.	LITTLE VALLEY #1					

TOOL JOINTS SIZE & TYPE OD | DRILL COLLARS NO. OD ID | PUMP NO. 1 | PUMP NO. 2

DIVISION | SALESMAN

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT. 1000 LBS	RPM	VERT DEV.	PUMP PRES.	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT.	MUD VIS.	REMARKS
9	8¾	DAS	CORE		CORE	8136	6	6¼	26	60		1200	48	5½			124	60	125 Film
10	8 7/16	CHIS	CORE		CORE	8163	27	25	26	60		1200	48	5½			125	63	
11	8 7/16	CHIS	CORE		CORE	8175	12	9½	26	65		1200	52	5½			124	62	
34	8¾	REED	YH			8180	5	5	55	65		300	54	5½			128	48	
35	8¾	REED	YH			8210	30	18½	55	65		1000	54	5½			133	50	
12	8 7/16	CHIS	DIA		CORE	8304	94	58	26	60		1000	48	5½			133	58	Dolomite 7-22
36	8¾	REED	YH			8309	5	3¾	55	70		450	48	5½			133	55	
13	8 7/16	CHIS	DIA		CORE	8316	7	10½	26	70		1200	52	5½			133	65	Dolomitic
14	8 7/16	CHIS	DIA		CORE	8339	23	25	26	70		1000	52	5½			130	65	Sandy Sand
15	8 7/16	CHIS	DIA		CORE	8390	51	34½	25	70		1000	48	5½			132	65	
16	8 7/16	CHIS	DIA		CORE	8399	8	8	25	70		1200	48	5½			131	66	
37	8¾	REED	YH			8406	8	5¼	55	70		600	48	5½			130	60	
17	8 7/16	CHIS	DIA		CORE	8439	33	23¾	25	70		1200	48	5½			131	55	
18	8 7/16	CHIS	DIAMOND		CORE	8454	15	6¾	25	70		1200	48	5½			132	53	
														T.D.	8-24	60			

COUNTY	FIELD	STATE	SEC.	TOWNSHIP	RANGE	OPERATOR
GRAND		UTAH	29	26S	20E	Pure Oil-Murphy

CONTRACTOR	LOC.	SPUD	US	INTER.	COMP.	TOOL PUSHER
Will I Lewis	Little Valley #1	4-5-60			8-24-60	

TOOL JOINTS SIZE & TYPE OD | DRILL COLLARS NO. OD ID | PUMP NO. 1 | PUMP NO. 2

DIVISION | SALESMAN

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT. 1000 LBS.	RPM	VERT DEV.	PUMP PRES.	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT.	MUD VIS.	REMARKS
18	8 7/16	DIA	Core			8454	15	6¾											
19		DIA	Core			8468													
		Reed	YHW			8480													
	8¾	HTC	W7R		7816C														
					7816														
	8¾	HTC	W7R		7368														
		8-24-60	COMP.			8500	TD												

Log Tops: Chinle 446, Moenkopi 1788, Cocoanino 1263, Cutler 1353, Hermosa 2733, Paradox 3250, Paradox SALT 4216, Base Paradox SALT 7450, Miss 7548, Ouray 8080, Elbert 8250, McCracken 8386

DIAMOND CORE BIT RECORD

Core No.	From	To	Footage	Hours	Size	Make	Ser. No.
1	7200'	7230'	30'	14½	8 5/8"	D&S	C-16740
2	7625'	7674'	49'	49	8 5/8"	D&S	C-16740
3	7675'	7694'	19'	8½	8 11/16"	Christensen	C-1738
4	7701'	7760'	59'		8 11/16"	Christensen	C-1738
5	7760'	7790'	30'		8 11/16"	Christensen	C-1738
6	7839'	7849'	10'		8 11/16"	Christensen	C-1738
7	7863'	7865'	2'		8 11/16"	Christensen	C-1738
8	8016'	8051'	35'		8 11/16"	Christensen	C-1738
9	8130'	8136'	6'		8 5/8"	D&S	C-16740
10	8136'	8163½'	27½'		8 11/16"	Christensen	C-1738
11	8163½'	8175'	11½'		8 11/16"	Christensen	C-1738
12	8210'	8258'	48'		8 11/16"	Christensen	C-1738
13	8258'	8304'	46'		8 11/16"	Christensen	C-1738
14	8309'	8316'	7'		8 11/16"	Christensen	C-1738
15	8316'	8339'	23'		8 11/16"	Christensen	C-1738
16	8339'	8390'	51'		8 11/16"	Christensen	C-3550
17	8390'	8398½'	8½'		8 11/16"	Christensen	C-3550
18	8406'	8439'	33'		8 11/16"	Christensen	C-3550
19	8439'	8451'	12'		8 11/16"	Christensen	C-3550
20	8454'	8469'	15'		Core cut by Pure Oil Company		
21	8486'	8501'	14'		Core cut by Pure Oil Company		

FUTURE POSSIBLE PRODUCING INTERVALS

None.

SAMPLE DESCRIPTIONS

0-40	Ss, med g, sub ang, frosted, f-p cem, sl fri, wht-buff, few scat org gs.
40-60	Some lt red and finer g, SAA.
60-100	The f g rd is well cem, hd, f g.
100-140	SAA, incr in rd ss.
140-200	80% rd ss AA, 10% wht ss.
200-480	100% ss, lt org-rd, sub ang, well cem, sl fri.

Chinle Sample Top 465

480-500	40% slst rd, 60% ss AA.
500-600	100% slst rd, (VPS 520-540).
600-660	100% slst rd brn.

Shinarump Sample Top 640

660-680	Slst, gry to gry brn, sl sdy, fri pyr, some dk gry calc slst.
680-710	SAA, but blue-gry to lt gry some rd, slty ls, gry.
710-730	Slst, rd-gry to blue gry; 10% ls AA.
730-750	100% slst rd, tr ls AA, mica.
750-790	SAA, less ls.
790-820	Slst, 100%, dk rd-brn, v sl calc.

Moenkopi Sample Top 795

820-860	SAA, non calc, sl hdr.
860-910	SAA, gry rd-brn, f.
910-1020	SAA, hdr, sl calc or lmy wht-gry, fri pyr.
1020-1050	SAA, dkr rd-brn, almost shly.
1050-1090	SAA, lt as before.
1090-1100	SAA, but v calc (10% ls).
1100-1110	SAA, but v dk rd brn, sl calc.
1110-1120	30% ls wht to gry, dns, 70% slst AA.
1120-1140	Slst AA, sl calc and sdy.
1140-1180	SAA, no sd, sl mica.
1180-1190	SAA, slty-v f g ss, calc.
1190-1240	Slst, sl mica, rd brn, sl calc and sl strk w/ls.
1240-1250	100% ss, f g, sub ang, v lt org.

Coconino Sample Top 1245

1250-1270	50% ss, f g, sub ang, v lt to dk rd; 50% slst AA.

1270-1280	SAA f-m g ss about 80%.
1280-1300	SAA, 90% ss lt rd.
1300-1310	20% ss; 80% rd mica slst.
1310-1320	50% ss; 50% slst AA.
1320-1350	SAA but v mica and gyp dk rd.
1350-1360	SAA more sd less gyp and mica.
1360-1380	80% ss, rd-org, some dk g, sl calc, gyp, poor sort.

Cutler (Organ Rock) Sample Top 1360

1380-1390	SAA, few c g ang.
1390-1410	SAA, rd brn.
1410-1430	SAA, tr v mica dk gry slst, gyp.
1430-1440	SAA, lot gyp and mica, tr ls wht.
1440-1450	SAA, some mica, tr ls wht.
1450-1460	95% ss, wht-pk, f-v f g, 5% slst, tr gyp.
1460-1470	SAA, wht-lt rd.
1470-1520	50-50 ss and slst AA dk rd.
1520-1530	SAA, org c g.
1530-1540	SAA, org f g.
1540-1580	SAA, rd.
1580-1590	90% slst rd-brn; 10% ss AA.
1590-1600	50% slst rd-brn; 50% ss AA.
1600-1610	80% slst, rd brn; 20% ss.
1610-1620	SAA, slst to gry grn.
1620-1640	50-50 ss and slst, rd, v mica.
1640-1680	80% ss dk org, v f g, sl gyp; 20% slst.
1680-1750	SAA, lt org.
1750-1840	SAA, org-rd.
1840-1860	SAA except v c, ang. v mica (xanth.) sl gyp.
1860-1920	SAA, org, f g.
1920-1930	SAA, lt org w/lot of wht g.
1930-1950	40% ls gry dns; 40% ss; 20% slst.
1950-1960	SAA, ls dkr.
1960-1970	90% ss org; 10% slst; tr pyr.
1970-2000	SAA, tr ls; lt org.
2000-2010	SAA, dk rd.
2010-2020	SAA, f g, lt org, v gyp.
2020-2100	SAA, sl gyp and mica.
2100-2140	SAA, org-rd.
2140-2150	100% ss, dk org.
2150-2260	NR
2260-2270	90% slst, rd brn-grn m'fl; 10% ls, gry grn blue.
2270-2330	NR
2330-2340	100% slst, rd, mica, tr pyr, ls wht.
2340-2350	50% slst; 50% ss, r-sub r, rd, fair sorting.
2350-2390	90% slst; 10% ls vcl; tr ss.
2390-2400	100% ss, org-rd, some wht, sub ang-ang, f sorting.

2400-2410	SAA, tr mica.
2410-2420	90% AA, 10% slst.
2420-2440	Slst vcl, vps.
2440-2480	Slst, dk gry, sl sdy and calc, some mica.
2480-2520	Vcl slst, tr ls.
2520-2530	SAA, tr ss.
2530-2540	SAA, tr ss.
2540-2550	SAA, tr ls.
2550-2570	SAA, v mica.
2570-2580	SAA, tr ls, loose sd g.
2580-2600	SAA, tr cht.
2600-2610	Vcl slst brn rd-mott, tr ls wht.
2610-2630	SAA, tr pyr.
2630-2660	SAA, tr cht (VPS 2650-2660).
2660-2680	SAA, tr cht.
2680-2710	SAA, no cht.
2710-2740	SAA, tr cht, brn.

Upper Hermosa Sample Top 2733

2740-2750	10% ss wht f g; 90% slst AA, tr ls.
2750-2760	SAA, more ls brn gry.
2760-2800	SAA, tr pyr.
2800-2830	Slst, vcl, sl lmy, VPS.
2830-2860	80% ls wht, sdy-slty, some dns, 20% slst.
2860-2900	SAA, ls dkr, not as sdy.
2900-2910	50-50 ls and slst AA.
2910-2940	100% ls wht-blk, dns-s g, blk ss slty and mica, tr pyr.
2940-2970	SAA, v mica, sl dy and mostly dk, some v gran.
2970-3010	SAA, less gran, dk gry brn.
3010-3040	SAA, more lt mtx (lot of motld slst up hole).
3040-3050	SAA, VPS.
3050-3080	Missing.
3080-3100	LS AA and wht ckhy cem mtx/gils.
3100-3130	Ls, wht to tan, dns.
3130-3140	VPS
3140-3150	SAA, but lot dk mica ls.
3150-3200	SAA, some brn and gran.
3200-3230	Ls, dk gry, slty, mica, sl gran-xln, some dns.
3230-3240	Ls AA but ltr and dns.
3240-3260	Ls, lt gry, dns, tr mica.
3260-3280	SAA, dkr.
3280-3300	SAA, tr cht brn.
3300-3360	60% ls AA; 40% ss v lmy, mica vcl (VPS 3310-3360).
3360-3400	SAA, cleaner tr cht.
3400-3440	SAA, mostly dk ls, tr cht wht-tan, less ss 20% (VPS 3410-3440).
3440-3450	90% ls tan-dk gry, dns-sl gran, 10% ss AA.
3450-3500	100% ls AA, tr cht.

3500-3520	SAA, 10% ss, limy, mica.
3520-3540	SAA, no ss.
3540-3550	SAA, tr ss and cht.
3550-3560	Either chky ls or cem mtx, VPS.
3560-3570	Missing.
3570-3580	VPS, everything.
3580-3590	Missing.
3590-3600	VPS.
3600-3660	Missing.
3660-3670	VPS, cem mtx.
3670-3680	Ls, dk, dns, lot cht tan, brn.
3680-3690	SAA, 10% cht, dk mang nod.
3690-3700	Lot of slst is smpl, VP, prob AA.
3700-3730	SAA, pur sh slst, VPS.
3730-3740	SS 50%, lmy, sl mica wht, 50% ls, dns-gran tan, tr gyp.
3740-3770	SAA, more dns ls.
3770-3780	NR
3780-3960	LS, ss, slst, sh, VPS.
3960-4014	Ls, ten-dk gry, dens, sl sdy ls and cht, 25%, tan, tr mica.
4014-4031	SAA.
4031-4040	NR
4040-4050	SAA, less cht, tr pyr.
4050-4070	NR
4070-4100	Ls, dns-sdy, lt gry and tan-dk gry, some gran, sl tr rd, tr cht.
4100-4140	NR
4140-4150	Ls AA, not as sdy, sl xln, tr pyr, tr cky ls, some cht.
4150-4160	SAA, no shows or porosity.
4160-4170	SAA.
4170-4380	NR

<u>Paradox Salt (Log Top)</u> 4216

4380-4390	95% sh, blk, sl calc, mica, some dk gry; ls 5% wht-gry, brn, mica, sl gran, tr gyp, arag, anhy.
4390-4410	40% ls, v gran, looks well cem, prob f p&p, some gd, lt gry-sl grn cast; 40% dolo, sl anhy, xln-dns, tr xln anhy, 10% sh AA.
4410-4420	NS.
4420-4430	40% ls AA; 40% anhy wht; 20% sh blk AA.
4430-4440	50% ls AA; 30% anhy sl dolo; 20% sh blk AA.
4440-4450	30% ls AA; 50% anhy sl dolo; 20% sh blk AA.
4450-4490	Salt 100%, tr sh.
4490-4510	SAA, tr dolo, brn dns.
4510-4530	75% ls, dolo, buff, v f gran, 25% anhy.
4530-4540	30% salt; ls and anhy AA.
4540-4550	80% sh blk AA; 15% ls, dolo, tan, v f gran 5% anhy.
4550-4580	SAA, (10% cement).
4580-4590	50% ls AA; 50% sh AA; tr c grn ss.
4590-4620	Salt.

4620-4630	60% ls AA, vug; 10% dolo anhy xln; 30% sh.
4630-4640	90% ls AA, vug; 10% dolo anhy xln; tr sh.
4640-4650	SAA, some rexlg of salts (?) poss dead oil stain, no fluor.
4650-4660	60% ls AA; 20% dolo; 20% anhy; poss dead oil stain, no fluor, no cut.
4660-4760	Salt.
4760-4770	Salt, tr blk sh.
4770-4780	Salt, tr blk sh; tr dolo, suc, tan, no show.
4780-4790	90% dolo, suc, sl mica, no show; 10% anhy.
4790-4800	SAA, dolo fairly soft.
4800-4820	25% ls, buff, vug, no show; 50% dolo; 25% anhy.
4820-4830	75% anhy; 25% dolo; tr ls.
4830-4910	Salt.
4910-4930	Salt, occ g of sylv.
4930-4940	Salt, some org colored, fe.
4940-4980	Salt, lot org colored, tr sh and dolo.
4980-4990	Salt, not as org.
4990-5030	Salt, break in flakes instead of gs.
5030-5070	SAA, gran again.
5070-5090	SAA, tr sh.
5090-5100	90% salt; 5% sh; 5% dolo brn, no shows, v f g-dns.
5100-5110	SAA, tr anhy.
5110-5180	Salt.
5180-5190	20% dolo AA; 80% salt; tr anhy, sh.
5190-5200	Salt.
5200-5210	40% dolo AA; 60% salt.
5210-5260	Salt.
5260-5270	20% dolo shly; 80% salt.
5270-5280	20% dolo shly; 10% sh; 70% salt.
5280-5290	70% dolo some sl anhy; 10% anhy; 10% sh; 10% ls gran buff-tan; dk and vug, wht.
5290-5320	SAA, tr salt.
5320-5330	Salt, wht, tr blk sh.
5330-5420	Salt, sl org.
5420-5430	Salt, tr dolo tan.
5430-5440	80% dolo, sl motld tan and wht, some sl anhy, 10% anhy, wht; 10% ls wht g-cky; tr sh, tr vug por.
5440-5450	70% dolo AA; 5% anhy wht; 10% ls AA; 15% sh.
5450-5460	SAA, incr in anhy.
5460-5470	90% salt; 10% dolo.
5470-5590	Salt.
5590-5600	10% salt; 60% dolo; 10% any; 20% sh.
5600-5610	70% dolo; 10% ls; 10% anhy; 10% sh, tr salt.
5610-5620	50% dolo; 10% ls; 10% anhy; 30% salt, tr sh.
5620-5630	60% salt; 40% dolo, tr anhy, sh.
5630-5640	60% sh blk; 10% salt; 30% dolo, anhy, dns-gran, sl vug.
5640-5680	Salt.
5680-5690	70% dolo, sl anhy, 10% sh, 10% salt; 10% anhy.
5690-5700	80% salt; 10% sh.
5700-5720	SAA, some anhy, dolo.

5720-5730	Salt.
5730-5750	Salt, sl org.
5750-5880	Salt.
5880-5890	100% sh, blk.
5890-5900	80% sh, blk; 20% salt.
5900-5910	80% salt, 20% sh.
5910-5960	Salt.
5960-5970	Salt, tr sh and anhy dolo.
5970-5980	80% sh; 20% salt, tr anhy.
5980-6020	Salt, tr sh.
6020-6030	95% sh, blk; 5% anhy dolo, no shows, tr pyr, salt.
6030-6050	70% sh, blk; 10% anhy dolo, no shows; 20% salt, tr pyr.
6050-6060	70% salt, 30% sh; tr dolo pyr, ? fluor on salt.
6060-6070	Salt, sl fluor, NC.
6070-6080	Salt, tr sh, 20% blk sh.
6080-6100	Salt, tr sh, no shows; sl fluor in salt, NC.
6100-6110	Salt, stn on salt will not fluor or cut (fe stn).
6110-6120	Salt, (some sylvite) poss d o on salt, clear salt has tr fluor, NC.
6120-6160	Salt, cloudy salt, no fluor, clear salt has tr fluor, NC.
6160-6180	SAA, but fluor v faint.
6180-6190	Salt, 30% sh w/tr sh and anhy, fluor, NC, tr pyr, some pk salt, tr dolo, fluor, NC.
6190-6200	SAA, tr gran salt, no fluor, NC.

(At 6075 circulated because oil showed on tank 1 hour and 20 minutes after trip. Samples to 6200 are not contaminated by oil shows or were flushed clean by salt water.)

6200-6210	Salt, sm gran sl dolo anhy salt, f por, sl fluor, NC.
6210-6220	Salt, 20% gran, 80% flakes.
6220-6230	Salt, tr blk sh w/d o .
6230-6270	Salt, 20% blk sh, 80% salt, some gran; looks stnd but no fluor or cut.
6270-6280	Salt, v faint fluor.
6280-6430	Salt, v faint fluor.
6430-6440	Salt, all flakes and chunks, v faint fluor.
6440-6450	Salt, all flakes and chunks, tr d o (?) and fe stn.
6450-6460	Salt, 50% gran, no fluor.
6460-6470	Salt, tr sh, looks like d o, no cut or fluor.
6470-6490	Salt, 50% gran salt, tr d o, no cut or fluor.
6490-6500	Salt, all flakes, v faint fluor.
6500-6560	Salt.
6560-6570	Salt, tr fluor.
6570-6590	Salt, non fluor.
6590-6600	Salt, tr fluor.
6600-6610	Salt, less fluor (30-40%).
6610-6620	Salt, fluor, lt stn, NC.
6620-6660	Salt, tr fluor, tr lt stn, NC.
6660-6700	SAA, w/v gd cut.
6700-6710	SAA, all chips, no gran salt.

6710-6730	SAA, tr d o stn; v lt fluor, sl cut on clear salt.
6730-6770	SAA, less fluor.
6770-6780	SAA, tr blk sh. Salt w/gd fluor flakes-m g xln-dns; tr ls, dns dk brn, f-p fluor and cut; tr sh blk, anhy (after washing salt out, no fluor).
6780-6790	30% sh blk sl calc (?) fluor and cut; 70% salt, dns, sm gran AA, gd stn fluor and cut; tr anhy, ls, and dolo; lot rexl salt.
6790-6800	90% salt mostly m g xln sl vug, sm por, gd fluor, f cut; 10% sh blk, sl calc in part; tr brn ls, dns-anhy.
6800-6810	60% sl dolo salt w/tr anhy (?) sm xln por few vugs, gd stn, cut and fluor; 20% sh blk; tr ls AA, stn.
6810-6820	70% v sl dol salt AA, gd cut; 20% lg clear salt; 10% sh, tr anhy.
6820-6830	90% v sl dol salt AA, tr ls dns, brn, no shows on ls.
6830-6840	Salt, sm gran AA, mostly flakes and chunks; v lt stn, f fluor on clear, gd on cloudy grans, f-g cut, tr anhy and dolo and ls w/fair fluor and cut.
6840-6860	Salt, v gd stn globu.
6860-6890	Salt, gd stain and fluor, less cut.
6890-6970	Salt, gd stain, fluor and cut.
6970-6980	25% ls, tan dns, tr gran wht, 10% dolo, nod dk brn; 50% sh blk and red; 10% slst; tr rd ss c g; 5% anhy.
6980-6983	60% ls tan-dk gry-brn, dns-sl gran, 5% dolo lt gry, some anhy dk gry gran; 20% sh blk and rd; tr anhy; tr ss c g, rd, loose sd grns, 5% slst rd; tr blk sh mott calc or dolo.
6983-7010	Missing.
7010-7020	20% ls AA; 10% dolo AA; 10% anhy wht; 40% sh AA; 20% slst rd sl mica; tr pyr loose sd grns.
7020-7030	60% ls AA, sm dk brn; 10% dolo sm anhy or slty; 30% sh and slst blk and rd; tr pyr, v gran ls, vcl.
7030-7040	SAA, sm ls v c xln dk brn, sh v carb.
7040-7050	50% ls AA, mostly dns and tan-lt gry; 10% dolo AA; 30% sh and slst; tr lse sd g pyr; 10% anhy.
7050-7060	SAA, tr wht cht.
7060-7070	SAA, tr brn gry cht.
7070-7080	50% salt; 10% ls AA; 5% dolo; 5% anhy; 25% sh; 5% rd slst.
7080-7090	60% ls, dns-sl gran, sm sdy; 20% dolo dk brn nod-lt gry, no show, no p&p; 20% sh blk rd, tr xln ls, anhy, lot cht wht-brn, rd ss c g.
7090-7100	60% ls AA, mostly dns and sdy; 10% anhy cht; 30% sh, tr pyr, lot chky dolo (?) tr xln por (?).
7100-7110	70% ls AA; 10% anhy; 20% sh tr pyr, lot chky dolo (?) tr xln por (?), tr dolo.
7110-7120	10% dolo, lt gry; 20% anhy, wht mott; 50% ls AA, some xln; 10% sh AA, tr salt.
7120-7130	SAA, little more salt.
7130-7140	50% ls dns-xln, tan-brn; 10% dolo gran brn, lt gry; 10% anhy; 30% sh blk; tr pyr.
7140-7150	SAA, tr cht.
7150-7160	SAA, tr gran mica ls, tr cht.

7160-7165	(Circulating) 50% ls tan-brn, dns-g; 10% dolo lt gry; 5% anhy; 200% slst lt gry, rd, gry, pur, org; 15% sh blk.
7165-7176	20% ls AA; 40% sh blk; 20% slst AA; 15% dolo lt gry; anhy 5%.
7176-7185	60% salt; 10% ls AA; 10% sh blk; 20% slst vcl; tr anhy.
7185-7190	90% salt; 5% sh and slst; 5% ls AA.
7190-7195	(Circulating) 50% salt; 30% sh blk; 10% dolo; 10% ls AA; tr slst anhy. And, 70% salt; 20% anhy salt; 10% sh blk; tr ls.
7195-7200	95% salt; 5% sh blk; tr ls.
7200-7201	Core #1 - Salt, sm dk strks and occ random frac 6-8" apart.
7201-7211	SAA, dk strks are h salt.
7211-7212	Mostly dk salt.
7212-7213	Salt.
7213-7214	45% frac or xln plane.
7214-7215	Salt.
7215-7217	Almost all dk salt.
7217-7218	17.5-18% dk salt.
7218-7219	Salt.
7219-7220	Salt.
7220-7221	Salt.
7221-7223	Dk salt.
7223-7227	Dk salt.
7227-7230	50-50% dk and clear salt.
7230-7235	60% salt; 20% sh blk; 10% ls slty gry; 10% dolo dk brn; tr rd slst.
7235-7240	75% salt; 5% dolo, dk brn, sl gran; 10% ls v slty lt gry; 10% sh blk; tr rd slst.
7240-7245	30% salt; 30% ls v slty gry-dk gry; 5% ls dk brn, sl gran; 30% sh blk, carb; 5% anhy.
7245-7250	30% salt; 30% ls, slty, gry-gry brn, gd por in part, 5% anhy; 30% sh blk calc in part, 5% slst vcl.
7250-7255	60% salt; 20% sh blk calc; 10% ls v slty lt gry; 5% anhy, tr bent.
7255-7265	90% salt; 5% sh blk calc in part; 5% ls, slty lt gry; tr slst anhy.
7265-7270	20% salt; 40% bent wht; 30% ls v slty gry-brn, some por; 10% sh blk; tr anhy and slst rd.
7270-7275	50% bent wht-dk gry; 10% sh blk, 20% ls v slty; 10% salt; 10% anhy.
7275-7280	40% bent dk gry, sm wht; 30% sh blk calc; 10% ls v slty; 10% anhy.
7280-7285	75% bent wht-gry; 10% ls v slty brn-gry; 10% sh blk calc; 5% anhy.
7285-7295	SAA.
7295-7300	35% bent wht-gry; 25% sh blk calc, 15% v slty ls gry; 10% ls dk brn, dns-gran sl slty; 15% salt; tr anhy and dolo, ls crm dns.
7300-7310	20% bent; 20% sh blk sl calc; 30% slst brn sl calc; 5% ls gry sl por; 25% salt w/tr pyr w/ln; tr ls, dns dk brn, slst, rd and org.
7310-7311	(Circulating) 50% salt; 20% bent; 25% sh blk; 10% ls v slty gry; tr crm buff ls dns-sl chky; vcl slst, sm dk brn ls, sl dns, no foss.
7311-7320	50% bent wht gry; 30% salt; 10% blk sh; 5% slst brn pyr; 5% ls v slty; tr ls crm.
7320-7335	90% salt; 5% sh; 5% ls v slty.
7335-7340	50% bent; 40% salt; 5% sh; 5% ls v slty.
7340-7345	25% bent; 70% salt; 5% sh; 5% ls v slty.

7345-7350	80% sh blk; 15% bent; 5% ls slty, tr anhy.
7350-7355	60% salt; 25% sh blk; 5% ls v slty; tr crs sd g. ls brn dns, 10% bent wht.
7355-7370	75% salt; 10% sh blk; 5% calc; 5% ls dk brn dns-lt gry v slty; 10% bent wht; tr pyr, slst rd, anhy.
7370-7375	80% salt; 15% sh; 5% ls.
7375-7385	100% salt; tr blk sh.
7385-7390	SAA, w/tr ls f-gd fluor, ? cut.
7390-7400	SAA.
7400-7415	75% salt; 20% bent wht-gry; 5% sh blk; tr ls AA.
7415-7420	90% salt; 5% sh blk; 5% ls brn-gry.
7420-7425	25% salt; 20% sh blk; 30% bent; 20% ls v slty, tr anhy, brn slst.
7425-7430	40% bent, gry-wht; 20% sh blk; 30% ls v slty; 10% salt; tr dolo tan anhy; anhy wht.
7430-7435	90% salt; 10% sh blk, tr ls slty.
7435-7440	75% bent; 15% sh blk; 10% ls v slty; tr cm ls anhy dolo, salt.
7440-7450	80% bent; 10% sh; 10% ls slty; tr AA.
7450-7475	70% bent; 10% salt; 10% sh blk; 10% ls slty gry-brn to dns, tr AA.
7475-7480	80% bent gry, sm wht; 10% sh blk; 10% ls, slty gry, dns-sl gran, dk brn; try anhy.
7480-7485	25% salt; 40% bent; 20% ls v slty gry; 15% sh blk.

<u>Lower Hermosa Sample Top</u> 7450

7485-7490	10% salt; 40% bent, 30% sh blk sl calc; 10% slst brn.
7490-7495	90% dolo gry-dk gry mostly gran, sm dns, sm sl anhy; 10% sh blk; tr ls slty gry, anhy, bent gry, red slst.
7495-7500	40% bent gry-wht; 30% sh blk sl calc; 30% dolo tan-brn, sl anhy; tr ls v slty, anhy, salt, brn slst.
7500-7505	30% bent; 30% sh blk sl calc; 30% dolo AA; 10% ls v slty; try anhy.
7505-7510	80% salt; 10% sh blk; 10% bent; tr dolo anhy.
7510-7515	20% salt; 30% bent; 40% sh blk; 10% ls v slty.
7515-7520	60% bent; 15% salt; 20% sh blk; 5% dolo gran brn.
7520-7525	50% bent; 20% sh blk; 10% dolo dns-gran brn; 20% slst brn; tr anhy, slty ls.
7525-7530	95% dolo, lt-dk gry, gran, sm dns brn, sl slty and mica, no por; 5% sh blk; tr anhy brn, slst, red slst, bent slty ls.
7530-7535	SAA, tr crm sug ls, sm brn ls looks just like dolo.
7535-7545	80% bent; 5% salt; 10% dolo sl anhy, brn, gran; 5% sh blk.
7545-7550	20% bent; 60% dolo gran-dns, lot of dk nod dolo, sm tan ls dns; 10% slst brn; 10% sh; tr anhy, slty anhy ls w/vug, cht tan, pyr, salt, ly sh blk and wht.

<u>Mississippian Sample Top</u> 7548

7550-7555	20% bent; 30% ls crm buff dns-sl gran, sm chky; 40% cht tan wht; 10% sh, blk; tr dolo dns brn, anhy.

7555-7560	80% ls, dns tan, chky wht, gran buff-sl mott, sl xln-tan-brn; tr indist foss, no por or show; 15% cht tan fresh wht; 5% sh blk, sl calc, tr dolo dk brn nod-c g, ls v slty.
7560-7565	65% ls mostly chky wht, dns tan, 25% bent; 10% sh blk, tr salt, cht, slty ls, anhy, dolo gran dk brn.
7565-7570	75% ls chky-dns w/sharp edger, sm gran; 15% sh blk; 10% bent; tr wht cht and tan.
7570-7575	SAA, tr dolo anhy, fe stan on sm of chky ls, sl fluor and NC.
7575-7580	SAA, sm chky ls has blu-gran cast; tr v slty ls and sm anhy is f xln and slty.
7580-7585	70% ls, 50/50 chky-dns, sm gran tr blu-gry chky ls; 10% cht tan-wht; 20% sh blk sl calc, sm brn slst, tr anhy and bet (most bent washed out).
7585-7590	25% bent (washed out first); 30% sh blk; 70% ls mostly chky, sm dns; tr cht wht, brn dolo, gran waxy sh.
7590-7595	SAA, but ls less in %; most samples caving 3 cones off w/in last 5'.
7595-7600	70% ls, tan dns-v sl xln w/tr of calcite filled fracs, no stain or fluor, tr styolites, sm chky wht ls, sm slty gry; 10% dolo v gran, brn sl anhy, nod dk brn; 15% sh blk, lot cht, brn-tan, tr loose sd g, blu sh, rd ss.
7600-7605	SAA, tr wht cht and xln calcite (many pieces have glossy sheen, is sunlight, one side).
7605-7610	80% ls mostly chky wht, rest dns tan; lot of v slty gry ls, soft, looks like stain in sunlight, ? fluor, NC; tr gran brn ls, xln, calcite, rd slst, cht tan-wht; 20% sh blk, sm min fluor on dns ls.
7610-7615	SAA, more cht (less sheen).
7615-7625	SAA, more cht (more sheen).
7625-7626	<u>Core #2</u> - Ls, dns w/occ f xln face, tan-gry, one fract, no oil, no por.
7626-7627	Ls, dns-med xln, sm v c xln, tan, foss 1 brach, large blu gry sh inclusion.
7627-7628	Ls, dns-med xln, tan, one ¼" solid calc filled fract, styol, surf, dk grn-gry sh, no oil.
7628-7629	Ls, vdns, micro healed fract, dk gry-brn-gry, NS.
7629-7630	Ls, dns-c xln in part, tan-dk gry, slickenside, blu gry sh inclusion, no oil, 1 frac.
7630-7631	Ls AA, 1 frac w/ xln calc on face 1/8" - 1/4" tk bleeding oil start of single 4' frac; styol not bleeding oil.
7631-7632	Ls AA, 1 frac filled w/blu gry sh, 2% h ln.
7632-7633	SAA, tr h ln frac and isol ppt por w/in smpl.
7633-7634	Ls AA, 1 frac w/lost circ, 2% frac, bleeding oil on all fracs.
7634-7635	Ls, f xln w/specks of blk sh, 10% small vugs, tan-dk gry, bleeding oil, foss, 5% fract and small vugs.
7635-7636	Ls, dns-f xln V 2-5% frac bleeding oil; small vugs; tan-gry.
7636-7637	SAA, some frac open knife blade tk.
7637-7638	Ls, v c xln, tan, 2% frac, occ vug tooth pick, in size, bleeding oil.
7638-7640	SAA, w/styol, no bleeding oil, occ vug tooth pick size bleeding oil.
7640-7641	Ls, c xln, lot of blk calc mat incl tr small vugs, scat fluor, 2% frac occ vug.
7641-7642	SAA, w/blu gry sh scat w/in, 2-5% frac, scat vug up to match head size.
7642-7643	Ls, dns, tan, lot of blu-gry and blk calc mat thruout; 5% frac occ vug.

7643-7644	Ls AA, v gd series of parallel fracs ½" tk scat match head vugs, foss; bleeding oil; 5% frac.
7644-7645	SAA, sm vugs ¼-½".
7645-7647	SAA, but fewer frac 20%, vugs smaller.
7647-7648	Ls, v dns-sl xln, dk gry 20%, frac.
7648-7649	Ls, v dns, dk gry, blk calc mat, sl fluor, 2% frac.
7649-7650	SAA, but occ frac.
7650-7651	Ls, dns, tan, tr pyr, sm blk calc inclus, no frac.
7651-7653	SAA, sm blu gry sh inclus, no frac.
7653-7654	SAA, sh slicken sided, no frac.
7654-7656	SAA, but cglic in part, no frac.
7656-7657	SAA, but few healed h ln calc frac, no oil.
7657-7658	SAA, but few healed h ln calc frac, sm blu gry sh inclus, sl bleeding oil.
7658-7659	SAA, but few healed h ln calc frac, sm blu gry sh inclus, sl bleeding oil.
7659-7660	SAA, but few healed h ln calc frac, sm blu gry sh inclus, sl fossif.
7660-7662	SAA, sl more frac but sh filled.
7662-7663	Ls, v c xln, tan, v foss, 2-3 frac, scat bleeding oil.
7663-7664	SAA, but 2-5 frac.
7664-7665	SAA, but 2-5 frac, sm seat vugs tooth pick size.
7665-7667	Ls, AA, v badly broken, frac 5-10.
7667-7670	Ls, c xln, tan styol and frac 5%; styol 8-12" apart.
7670-7671	Ls v dns, gry pyr, 2-5 frac.
7671-7672	Ls, dns-c xln, tan, 2-5 frac.
7672-7675	NR.
7675-7676	Core #3 - Ls, m-c xln, tan-gry, no por.
7676-7678	Ls, c xln-gran, grans are dns, tr sh inclus.
7678-7679	SAA, less sh inclus.
7679-7681	Ls, c xln-gran, grans are dns, tr sh inclus.
7681-7682	SAA, but mostly xln, v c.
7682-7683	Ls, m-c xln, tan, tr sh inclus.
7683-7684	Ls, m xln, gry, lot of sh inclus.
7684-7685	SAA, but w/"viens" of dns ls.
7685-7686	Ls, gran-sl xln, ool (?), sm ppt por, foss imprint, fluor is fair on non-frac.
7686-7687	Ls dns-c xln, tr ppt por.
7687-7688	SAA, w/few gd vugs, f fluor on fresh surf.
7688-7689	SAA, but no por.
7689-7690	Ls c xln-sl dns l/pt, tan, no por.
7690-7691	SAA, but tr vug por.
7691-7692	Ls c xln-sl dns l/pt, tan, no por.
7692-7693	Ls, m xln, lot of sh inclus, f vug por.
7693-7694	Ls, dns-sl v f xln, tr por (one v gd vug), tan, no fluor.
7694-7701	NR.
7701-7705	Core #4 - Ls, dns-f xln, tan, foss, no por.
7705-7706	Dolo, dns, dk gry, sl frac, anhy inclus.

7706-7709	Dolo, dns-v f xln, tr h ln frac and ppt por.
7709-7711	Ls, dns-m xln, sm c indiv xls, tr sh inclus.
7711-7712	SAA, more sh inclus.
7712-7719.5	SAA, no sh, tan-dk gry.
7719.5-7722.5	Dolo, dns-v f xln, dk gry brn-blk, tr vug por, sm gd, no fluor.
7722.5-7727	Ls, dns-c xln, sl frac, styol, sm gd vug por.
7727-7729	Dolo, dns-sl gran, brn-blk, tr cem frac.
7729-7732	SAA, lighter, tr por.
7732-7733	Dolo, dns-sl xln, tr por, tan-gry, tr anhy inclus.
7733-7734	Dolo, dns-v g xln, gd vug por thruout, xln lined, tr frac, foss, gry-blk, tr anhy inclus, wet, no fluor.
7734-7740	SAA, sm carb mat in vugs.
7740-7741	SAA, less por.
7741-7748	SAA, gd por.
7748-7750.5	SAA, but only tr por.
7750.5-7757	Ls, dns-c xln, tan, no por.
7757-7759	SAA, but v c xln, more frac.
7759-7760	NR.
7760-7765	Core #5 - Ls, dns-v c xln, tan, no por.
7765-7768.5	SAA, foss cast.
7768.5-7770	Dolo, dns-v f xln, tan-gry, f-gd vug por.
7770-7778	Ls AA.
7778-7779	SAA, but more dns.
7779-7784	SAA, c xln.
7784-7789	Dolo AA, gry brn-blk, sm v gd vug por.
7789-7795	10% dolo AA, 70% ls dns tan; 20% slty ls, tr anhy.
7795-7800	NR.
7800-7839	SAA, tr rd slst, ls dns-gran.
7839-7840	Core #6 - Dolo, dns, dk gry-blk, no por.
7840-7841	Dolo, dns-c xln, gry-blk, tr vug por.
7841-7849	Dolo, m-c xln, wht-lt gry, gd por at top, excellent l/pt thruout 41.5, 43, 45, 46.5 to 49, no frac.
7849-7863	NS.
7863-7865	Core #7 - Dolo, dns-sl xln, v gd vug por at top, f-gd at bottom, tr cem frac, dk gry, wet.
7865-7866	NR.
7866-7870	40% dolo, wht, m-c xln, gry, grn, 20% vug-pp por; 10% anhy; 10% ls, wht cky; 20% sh, gry-grn-blk; tr cht.
7870-7875	50% dolo, SAA; 20% sh, SAA; 10% anhy, SAA, 10% ls, SAA; 10% cht, pk-wht.
7875-7880	60% dolo, SAA and brn, f g, w/tr stn; 20% sh, SAA; 10% ls, SAA; 10% cht, SAA.
7880-7885	70% dolo, brn, dns, chty, por reduced to 10%; 20% sh, SAA; 10% cht, SAA.
7885-7890	80% dolo, brn-gry, dns-f g, 20% por; 10% sh, SAA; 10% cht, SAA.
7890-7895	70% dolo, brn, dns-f g, 10% por; 10% sh, SAA; 20% salt.
7895-7900	80% dolo, brn-gry, chty-f g, 10% por; 10% sh, SAA; 10% cht, SAA.
7900-7905	80% dolo, brn-gry, chty-f g, tr por; 10% sh, SAA; 10% cht, SAA; tr anhy.

7905-7910	80% dolo, brn-gry, chty, wht c xln, 30% por; 10% sh, SAA; 10% cht, SAA; tr anhy.
7910-7915	80% dolo, SAA, 10% por; 10% sh, SAA; 10% cht, SAA; tr anhy.
7915-7920	70% dolo, SAA, 10% por; 10% ls, brn, oolitic, m xln; 10% sh, SAA; 10% cht, SAA.
7920-7925	80% dolo, SAA, 10% por; 10% ls, SAA; 10% sh, SAA; tr cht.
7925-7930	80% dolo, SAA, 20% por; 10% ls, SAA; 10% sh, SAA; tr cht.
7930-7935	70% dolo, SAA, 10% por; 20% ls, brn, m xln, wht chky; 10% sh, SAA.
7935-7940	80% dolo, brn, dns-f xln, wht; 10% sh, blk-gry; 10% cht, wht, tripo; tr ls, brn, dns; tr sd, c g, red, shy, mat.
7940-7945	60% dolo, SAA, 10% por vug; 20% ls, tan, dns-foss; 10% sh, SAA; 10% cht, SAA.
7945-7950	70% dolo, brn, chty, wht, c xln, tr por; 20% ls, wht, chky, brn, dns; 10% sh; tr sd, c g, red, shy mat.
7950-7955	70% dolo, SAA, 10% por; 10% ls, SAA; 10% sd, c-m g, clear red; 10% cht, trip, Clear.
7955-7960	50% dolo, brn-wht, SAA; 10% ls, SAA; 20% sh; 20% cht, vcl, tr f sd and anhy.
7960-7970	70% dolo, wht, c xln, gry-brn; 10% ls, wht, chky; 10% sh, gry-blk; 10% cht, vcl, tripo.
7970-7980	10% vug por; SAA, chty dolo; tr clear, well round sd.
7980-7985	80% dolo, wht-gry, m-c xln, brn, f g, 10% vug por; 10% sh, blk, tr sdy sh; 10% cht, clear, pk.
7985-7990	70% dolo, wht-gry-tan, m-c xln, blk residue on dolo, dead oil (?); 10% ls, tan, dns, lith; 10% sh, blk; 10% cht, vcl; tr sd.
7990-8016	SAA.
8016-8020	<u>Core #8</u> - Sl lmy dolo, dk gry and brn, f-m xln w/scatt sm cht inclus; vert & horiz fracs w/few fracs filled w/blk residue.
8020-8033	Sl lmy dolo, lt gry-m gry, f-m xln w/few scatt gry sh strks; 2" of gry sh at 8029'; few scatt fracs and sm vug.
8033-8052	Sl lmy dolo, f xln-f gran, lt gry-wh; scatt fracs and gd vug por from 8048-8051'.
8052-8060	80% dolo, brn-wht, f xln-f gran, sm sdy dolo; 10% sh, blk and gry; 10% ls, brn, dns, tr clear qtz xl.
8060-8065	SAA, tr sd, litho-cht.
8065-8070	60% dolo, SAA; 30% ls, wht, chky-tan dns; 10% sh, SAA.
8070-8075	60% dolo, brn-wht, f-m xln and f gran; 30% ls, wht chky, tan dns; 10% sh, blk.
8075-8080	SAA, dolo sl lmy, tr f g sd.

<u>Sample Top Ouray</u> 8080

8080-8085	60% dolo, SAA; 40% ls, SAA.
8085-8090	60% dolo, SAA; 40% ls, SAA/-tr anhy, tr sol.
8090-8095	50% dolo, SAA; 50% ls, SAA.
8095-8100	70% dolo, SAA; 30% ls, SAA.
8100-8105	70% dolo, brn, f gran lmy; 30% ls, SAA.
8105-8110	80% dolo, SAA; 20% ls, SAA; tr f g lmy sd.
8110-8115	40% dolo, SAA; 60% ls, buff-f gran, foss-dolomitic.

8115-8120	Dolo 70%, SAA; 20% ls, wht, chky, lt tan-dns; 10% sh, blk.
8120-8125	50% dolo, SAA; 20% ls, SAA; sh gry-grn-v lmy, tr f g sd, tr cht.
8125-8130	40% dolo, SAA; 40% ls, lt tan, suc, foss, gry-shy; 20% sh, SAA.
8130-8136	Core #9 - V dns-f g dolo, brn sl lmy, scat gry sh ptg of blu-grn tint; few horiz frac w/slty taste.
8136-8163	Core #10 - Dolo, sl lmy, f-m xln, dns silic, sl foss w/scatt blu-grn sh ptg; few scatt horiz fracs.
8163-8164	Core #11 - Ls, sl dns-f xln, tan-gry.
8164-8165	SAA.
8165-8172	SAA, w/blk sh ptg.
8172-8175	SAA, sl csr g, foss imprt.
8175-8185	50% ls, dns-m and sm gran xln tan; 40% dolo, dns-v xln, tr por, brn-tan; 10% sh, blu blk; tr cht and anhy.
8185-8195	90% dolo, dns-c xln, buff-gry; 10% ls; tr sh.
8195-8210	SAA, more sh.
8210-8214	Core #12 - Dolo, dns-v f xln, dk gry-blk.
8214-8218	Dolo, dns-v f xln, lt gry-dk gry, calc inclus.
8218-8223	SAA, w/blk sh ptg.
8223-8227	SAA, w/calc and anhy inclus.
8227-8230	SAA, w/blu sh ptg.
8230-8234	SAA, w/blu sh ptg and tr anhy.
8234-8236	SAA, w/blue sh ptg and try anhy, tr h ln fract.
8236-8237	Ls, dns, brn irreg frac.
8237-8239	Dolo, dns-v f xln, dk gry-blk, fract cem w/anhy.
8239-8241	Dolo, dns-v f xln, lt gry, blu sh ptg, tr pyr.
8241-8242	Dolo, dns, brn gry, tr h ln frac.
8242-8243	Sh, blue grn, sl calc.
8243-8244	SAA, but dk grn-blk.
8244-8245	Dolo, dns-v f xln, dk gry-blk, blu grn cast.
8245-8246	Ls, dns-suc (micro xln) grn sh ptg, slicken.
8246-8248	SAA, but dkr.
8248-8250	SAA, but dns dk gry.

Elbert Sample Top 8250

8250-8251	Ls, dns dk gry grn and tr blk sh ptg.
8251-8254	Dolo, f-m xln scatt blu sh inclus.
8254-8255	Dolo, m xln, well developed, gry, blu sh ptg.
8255-8256	SAA, mostly sh.
8256-8258	Dolo, dns-suc dk gry.
8258-8260	Core #13 - Dolo, dns, v shly, rd grn blu.
8260-8268	Dolo, v f xln, suc, tan sh ptg, styol.
8268-8270	SAA, v shly blu grn rd ptg.
8270-8272	SAA, sh slicken.
8272-8273	Dolo, w/less sh, dns tan-gry.
8273-8274	Dolo, v shly.
8274-8275	Dolo, dns-sl gran, dk gry, shly blu gry-blk.
8275-8281	Dolo, dns, dk gry, sh ptg, tr scatt sd grs.
8281-8286	Dolo, dns, tan-gry, v shly, ptg blu rd grn, slicken.

8286-8290	Dolo, dns-suc, tan-brn gry.
8290-8292	Dolo, dns, v shly, rd, grn blu, scatt c sd gs.
8292-8294	SAA, less shly.
8294-8295	SAA, but v shly and sl sdy.
8295-8297	Ss, m g, clear-wht, sub rd, p-f sorting, well cem, NS.
8297-8298	SAA, but f g, well sorted.
8298-8300	SAA, f-m g, sorting less cem.
8300-8301	SAA, tr xl overgrw.
8301-8302	SAA, m-c g, f-well sorted, sl fria, gd p&p, NS.
8302-8303	SAA, but f cem.
8303-8304	SAA, fria.
8304-8309	NR.
8309-8310	Core #14 - Ss, f-m g, f sorting, sub rnd-sub ang, little cem suf hd.
8310-8311	SAA, but m-c f por.
8311-8312	SAA, f-m.
8312-8313	SAA, f-m hd.
8313-8314	SAA, m-c, sl fria.
8314-8315	SAA, f-m hd.
8315-8316	SAA, f-m hd, sl fria, tr pyr (?).
8316-8317	Core #15 - Ss, m g, poorly sorted, well cem, sl fria, sub ang, wht, silic cem.
8317-8320	SAA, but wht-lt gry, hd.
8320-8321	SAA, v well cem but not as hd.
8321-8322	SAA, w/v thin stks of blu gry sh.
8322-8325	Dolo, dns, gry-brn; stks of v c ss, well rnd, well cem wht-gry at top.
8325-8328	Dolo, dns, gry-brn, thin blu gry sh ptg.
8328-8330	Dolo, suc-dns, brn, occ sh inclus.
8330-8332	Dolo, dns, brn-blu gry, h ln frac.
8332-8333	Dolo, suc-dns, brn, occ sh incl.
8333-8335	Dolo, dns, brn, occ ang sd g, c, clear-smoky.
8335-8337	Ss, m-c g, sub ang-sub rnd, well cem hd, sil, sl glauc, wht-gry, gran; stks of dns blu gry dolo.
8337-8339	Dolo, dns-v f xln, brn, sl anhy, few h ln fract.
8339-8340	Core #16 - Dolo, f formed xln, brn sl h ln frac.
8340-8341	Dolo, dns-v f xln, brn blu grn sh ptgs.
8341-8345	SAA, sh v sl dolomi.
8345-8347	Dolo, f formed xln.
8347-8348	Dolo, dns, brn, few blu grn sh ptgs.
8348-8350	Dolo, f formed xln.
8350-8355	Dolo, SAA, but w/anhy inclus.
8355-8358	Dolo, f xln, tan-brn, tr blu grn and rd sh, few scatt sdy stks, v c.
8358-8363	SAA, no sh, tr anhy inclus.
8363-8365	Dolo, v f xln, 3 in stks of v c poorly sorted ss, tr grn rd and grn dolo cem.
8365-8370	Dolo, f xln, brn, tr anhy.
8370-8375	Dolo, dns, tan-brn.
8375-8377	SAA, brn.
8377-8383	Dolo, dns, scat v c-m g ss, r-a, stk grn and rd sh.

8383-8385	Dolo, f-m xln, gry-rd and grn-gry.
8385-8390	Dolo, dns, tan, w/strks of grn and rd sh scatt, f-c sd g, r-a.
	McCracken Sample Top 8386 (Log Top)
8390-8393	Core #17 - Dolo, dns, gry rd, alter w/bands of f xln dolo gry-tan, few scatt sd gs, c, blu grn sh ptgs.
8393-8395	Dolo, dns-v g xln, gry-rd, few scatt, c sd gs.
8395-8396.8	Dolo, f xln, gry-rd-tan, grn sh scatt in thin strks, poss glauc.
8396.8-8406	NR.
8406-8407	Core #18 - Dolo, m-c xln, tan-pk, scatt sd gs, m-c, few strks of glauc ss.
8407-8411	Dolo, dns-f xln, pk, sl glauc, scatt sd gs, m-c g, clear-dk gry (10% sand).
8411-8419	SAA.
8419-8428	SAA, v little-no sd.
8428-8431	Ss, v dolo, tan-sl pk, sub ang-sub rnd, poor sorted, m-v c, scatt peb, strks of glauc.
8431-8432	SAA, but sdy dolo.
8432-8433	SAA, sl sdy dolo sprks of glauc.
8433-8436	Ss, f-m g, clear-wht and gry, a-r, f-well cem, v sl dolo, v glauc.
8436-8439	SAA, but f g well cem.
8439-8451	Core #19 - Dolo, dns-f xln, tan-pk, glauc strks.
8451-8454	NR.
8454-8469	Core #20 - Dol, rd brn, dns-f xln, no por, v glauc, v frac; ss, gry, f g, dol, sl glauc, vug, low por and perm, NS, v frac.
8469-8486	NR.
8486-8501	Core #21 - Ss, gry and grn, f g, dolo, v glauc, tite, NS, v frac; slst, v g, ss reworked w/lam dolo, tite, NS, vert fracs.
8501-8515	Ss, gry, v f-c g, clay filled, sl glauc, no por, uneven-pp fluor, no stn or odor.
8515-8520	Dolo, dk gry, dns-v f xln, slty, no por, no shows.
8520-8535	SAA, w/ss dk gry, f g, glauc, tite.
8535-8540	NS.
8540-8560	Dolo, AA.
8560-8565	Ss, lt gry, v f-f g, glauc, dolo, no por.
8565-8570	Dolo dk gry dns-f xln, slty glauc, no por, no shows w/ss AA.
8570-8600	Dolo AA, w/some ss AA.
	Cambrian Sample Top 8579
8600'	Total Depth

CORE DESCRIPTIONS

For Core Descriptions, See Sample Descriptions.

CA-20

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company MURPHY CORPORATION Formation MC CRACKEN File RP-3-1218
Well # 1 LITTLE VALLEY UNIT Core Type DIAMOND CONVENTIONAL Date Report 7/25/60
Field LITTLE VALLEY Drilling Fluid Analysts ENGLISH
County GRAND State UTAH Elev. 5936'KB Location SEC 29 T26S R20E

Lithological Abbreviations

SAND-SD SHALE-SH LIME-LM	DOLOMITE-DOL CHERT-CH GYPSUM-GYP	ANHYDRITE-ANHY CONGLOMERATE-CONG FOSSILIFEROUS-FOSS	SANDY-SDY SHALY-SHY LIMY-LMY	FINE-FN MEDIUM-MED COARSE-CSE	CRYSTALLINE-XLN GRAIN-GRN GRANULAR-GRNL	BROWN-BRN GRAY-GY VUGGY-VGY	FRACTURED-FRAC LAMINATION-LAM STYLOLITIC-STY	SLIGHTLY-SL/ VERY-V/ WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	RESIDUAL SATURATION PER CENT PORE TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
1	8295-96	0.04	3.2	0.0	65.6	Sandstone
2	8296-97	0.10	7.0	0.0	71.3	Sandstone
3	8297-98	0.13	8.4	0.0	71.4	Sandstone
4	8298-99	0.68	11.9	0.0	62.1	Sandstone
5	8299-8300	1.0	10.0	0.0	63.2	Sandstone
6	8301-02	0.06	6.9	0.0	44.9	Sandstone
7	8302-03	5.5	6.2	0.0	50.1	Sandstone
8	8303-04	1.6	6.9	0.0	71.2	Sandstone

SERVICE NO. 8 NO INTERPRETATION OF RESULTS

		MAX.	90°				
1	7638-39	0.4	0.2	1.8	15.1	69.7	Limestone
2	7643-44	0.4	0.2	1.9	8.6	81.8	Limestone
3	7648	1.4	0.8	6.8	25.3	24.2	Limestone
4	7664-65	68	<0.1	2.8	6.9	89.9	Limestone, Vertical Fracture.
5	7734-35	2.5	0.1	8.8	0.0	93.5	Limestone
6	7786-87	*0.8		11.3	1.6	83.7	Limestone, Vertical Fracture.
7	7847.5-48.5	24	1.7	15.9	2.1	84.3	Limestone, Dolomitic
8	7863-64.0	18	2.1	10.4	3.2	92.3	Limestone, Dolomitic

SERVICE NO. 8 - A NO INTERPRETATION OF RESULTS

* MATRIX PERMEABILITY

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

March 11, 1960

Murphy Corporation
110 Sixteenth Street
940 Petroleum Club Building
Denver, Colorado

Attention: Mr. Harold Miller,
Division Production Supperintendent

Gentlemen:

This is to acknowledge receipt of your notice of intention to drill Well No. Little Valley 1, which is to be located 1980 feet from the south line and 660 feet from the west line of Section 29, Township 26 South, Range 20 East, SLBM, Grand County, Utah.

Please be advised that insofar as this office is concerned approval to drill said well is hereby granted.

This approval terminates within 90 days if the above mentioned well is not spudded in within said period.

Yours very truly,

OIL & GAS CONSERVATION COMMISSION

CLEON B. FEIGHT
EXECUTIVE SECRETARY

CBF:co

cc: D. F. Russell, Dist. Eng.
U. S. Geological Survey
[redacted]

COPY

FROM
MURPHY CORPORATION
EL DORADO, ARKANSAS

March 17, 1960

PLEASE REPLY TO OUR
DIVISION OFFICE
940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

Oil & Gas Conservation Commission
State of Utah
Room 310 Newhouse Building
Salt Lake City, Utah
Attn: Mr. Feight

United States Geological Survey
457 Federal Building
Salt Lake City, Utah
Attn: Mr. Donald F. Russell

Gentlemen:

Attached are corrected copies of the plat on Little Valley Unit #1, NW SW Section 29, Township 26 south, Range 20 east, Grand County, Utah.

Please destroy the other plats that were sent to you.

Yours very truly,

MURPHY CORPORATION

James M. Freeman
Division Production Clerk

JMF:rn
Attachments

Form 9-331a
(Feb. 1951)

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

Land Office Salt Lake City

Lease No. SL - 067064

Unit Little Valley

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	XX
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

April 19, 1960

Well No. 1 is located 1980 ft. from {S} line and 660 ft. from {W} line of sec. 29

NW/4 SW/4 Section 29 (¼ Sec. and Sec. No.) 26 south (Twp.) 20 east (Range) (Meridian)

Wildcat (Field) Grand (County or Subdivision) Utah (State or Territory)

The elevation of the ~~derrick floor~~ Ground above sea level is 5924 ft. ungraded. 5936' RKB

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

18' of 20" conductor casing was set 12' below RKB with a dry hole digger. Spudded with rotary rig at 5:30 P.M. 4/4/60. Drilled 9 5/8" hole to 485' and reamed 17 1/8" hole to 244'. Ran 7 joints (229.35') of 13 3/8" 48# H-40 8rd Range 2 casing and set 15' below RKB at 243.50'. Cemented casing with 250 sacks regular cement, 2% $CaCl_2$. Good clean cement returns to surface. Plug down at 3:00 A.M. 4/9/60. W.O.C. Drilled out from under surface 4/11/60. Plans are now to drill a 12 1/4" hole to approximately 4250' and set 9 5/8" intermediate casing.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Murphy Corporation

Address 940 Petroleum Club Bldg.
110 Sixteenth Street
Denver 2, Colorado

By Harold Milan

Title Division Production Supt.

U. S. GOVERNMENT PRINTING OFFICE: 1958 O -463339

Budget Bureau No. 42-R356.4.
Approval expires 12-31-55.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LAND OFFICE Salt Lake City
LEASE NUMBER SL-067064
UNIT Little Valley

LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah *County* Grand *Field* Wildcat

The following is a correct report of operations and production (including drilling and producing wells) for the month of April, *19* 60,

Agent's address 940 Petroleum Club Building
Denver 2, Colorado

Company Murphy Corporation

Signed James M. Freeman

Phone AM 6-0211

Agent's title Division Production Clerk

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (If none, so state)	Remarks (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
LITTLE VALLEY UNIT NO. 1										
NW SW Sec 29	26S	20E	1							
4/9/60	Ran and cemented 7 jts. (229.35') of 13 3/8" 48# H-40 8rd R-2 LT&C casing and set 15' below RKB at 243.50' with 250 sacks.									
4/27/60	Preparing to gunk squeeze lost circulation zone. Ran caliper log and found two fracture sections in hole below 2700'. Ran Lynes packer and set in 12¼" open hole. Mixed 2 stages of gel and Diesel Oil. First batch was 40 BDO and 67 sx. of gel and the second batch was 50 BDO and 93 sx of gel. Ran 10 BW between each batch. No pressure buildup.									
4/28/60	Mixed 300 sx regular cement, 4% gel, and 3% $CaCl_2$. Ran 20 bbls of water ahead of cement and displaced cement with only 10 bbls behind. Cement entered formation at 4 BPM @ 125#. Released packer and pulled up hole. WOC 9 hrs. Checked bottom and found cement plug at 2306'. Set packers and pressured up formation to 1000# held OK. Made trip for bit and drilled out a 11' plug from 2306' to 2317'. Mud very heavy.									
4/29/60	3088' TD. Lost circulation zone 2760' to 2780'. Set packer at 2720' and mixed 80 sx gel and 52 BDO. Pumped into formation followed w/200 sx cem, 4% gel, and 3% $CaCl_2$. WOC 12 hrs. Drilled out cement and drilled to 2870' and lost returns. Lost circulation zone at 2770' shut off. Max. pressure 125#.									
4/30/60	3088' TD. Dumped 30 sx. of Tuf Plug in hole and loaded hole to push tuf plug into formation. Set packer at 2810' and pumped 200 sx of cement, 4% gel and 3% $CaCl_2$ into lost circulation zone. WOC 12 hrs. Drilled out to 2870' and lost returns.									
5/1/60	3088' TD. Attempting to squeeze off lost circulation zone from 2860' to 2888'.									

NOTE.—There were ..... runs or sales of oil; ..... M cu. ft. of gas sold; ..... runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.

Form 9-329
(January 1950)

16—25766-7 U. S. GOVERNMENT PRINTING OFFICE

Form 9-331a
(Feb. 1951)

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City
Lease No. SL - 067064
Unit Little Valley

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
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NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	XX
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

May 26, 19 60

Well No. 1 is located 1980 ft. from ~~N~~ {S} line and 660 ft. from ~~E~~ {W} line of sec. 29

NW/4 SW/4 Section 29 (¼ Sec. and Sec. No.) 26 South (Twp.) 20 East (Range) (Meridian)

Wildcat (Field) Grand (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is 5936 ft. RKB.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

After setting 13 3/8" casing at 243.50' a 12 1/4" hole was drilled to 4218'. Lost circulation zones were encountered at 2770', 2860', and 2975'. The upper and lower cavities were easily healed, but the one at 2860' required 2 weeks time to fill up. Ran and cemented 131 jts 9 5/8", 36# and 40#, J-55 LT&C, Range-2, casing at 4212.15'. Now WOC, preparing to drill ahead with salt saturated mud.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Murphy Corporation

Address 940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

By Harold Milan

Title Division Production Supt.

GPO 862040

Budget Bureau No. 42-R356.4.
Approval expires 12-31-55.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LAND OFFICE Salt Lake City
LEASE NUMBER SL - 067064
UNIT Little Valley

LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah County Grand Field Wildcat

The following is a correct report of operations and production (including drilling and producing wells) for the month of May, 19 60,

Agent's address 940 Petroleum Club Building
Denver 2, Colorado
Phone AM 6-0211

Company Murphy Corporation
Signed Harold D. Wilson
Agent's title Division Production Supt.

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (If none, so state)	Remarks (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
LITTLE VALLEY UNIT #1										
NW/4 SW/4 Sec 29,	26S	20E	1							
5-8-60										After 785 sacks cement and approximately 300 sacks calseal along with gilsonite, gel, diesel oil, tuf plug, fiber seal, brush, and other lost circulation material the zone at 2860' was squeezed off after nine squeeze job attempts.
5-24-60										Drilled a 12 1/4" hole to 4218' TD. Ran and cemented 130 jts (4200.15') of 9 5/8" 36# and 40# J-55 LT&C R-2 casing. Set 12.00' below RKB at 4212.15'. Cemented with 350 sacks 50-50 cement and poxlin, 2% gel and 24% salt. Bumped plug at 6:10 PM 5-24-60.
5-25-60										Ran temperature survey, indicated top of cement at 3900'.
5-31-60										5390' drilling salt and shale using salt water as drilling fluid.

NOTE.—There were ..... runs or sales of oil; ..... M cu. ft. of gas sold; ..... runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.

Form 9-329
(January 1950)

16—25766-7 U. S. GOVERNMENT PRINTING OFFICE

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JUL 5 1960

Budget Bureau No. 42-R356.4.
Approval expires 12-31-55.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LAND OFFICE Salt Lake City
LEASE NUMBER SL - 067064
UNIT Little Valley

LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah *County* Grand *Field* Wildcat

The following is a correct report of operations and production (including drilling and producing wells) for the month of June, 1960,

Agent's address 940 Petroleum Club Bldg.
Denver 2, Colorado
Phone AM 6-0211

Company Murphy Corporation
Signed James M. Freeman
Agent's title Division Production Clerk

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (If none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)

LITTLE VALLEY UNIT #1
NW SW Section 29, T26S-R20E Well No. 1

6-6-60 Drilled to 6899' and ran DST #1 6763-6805' (Straddle packers) Gas to surface in 12 minutes. Salt water flowed at the rate of 280 BPH with5% live gas & oil. Recovered 728' green oil & 1997' of gas cut salt water. Bottom packer did not hold.

6-9-60 TD 6983' Production Test #2 6004' to 6044' with straddle packers. Flowed well @ calculated rate of 168 BPH of salt water w/trace of oil on 3/4" choke with 175# FTP, SIP 600#.

6-10-60 TD 7031' Production Test #3 6590' to 6630' with straddle packers. Recovered intermittent weak blow for 30 mins, this considered dry test. Production Test #4 6220'-6260' with straddle packers. Recovered weak blow for 10 mins and no blow for 20 mins. Considered dry test. Production Test #5 6430'-6470' with straddle packers. Tool open 15 mins with no blow . Considered dry test. Production Test #6 6430'-6983' with straddle packers. Tool open 1 hr. Recovered small pencil size stream throughout test. This flow believed to be coming from zone tested on DST #1. Production Test #7 6165'-6983' with straddle packers. Tool open 30 mins with no blow. Considered dry test. Production Test #8 6165'-6983' with straddle packers. Tool open 30 mins. Recovered pencis size stream throughout test. This flow believed coming from same interval as DST #1 and Production Test #6. Production Test #9 6000-6040' with straddle packers. Recovered immediate strong blow. Flowed fresh water 31 mins, oil & gas cut mud 5 mins, salt water cut mud 2 mins, then salt water with trace of oil & gas for 35 mins.

6-13-60 Cut Core #1 7200' to 7230'. Recovered 30' salt.

6-24-60 TD 7625' DST #10 7550' to 7625' Tool opened with weak blow and died in 5 mins. Recovered 5' drilling mud.

6-27-60 Cut Core #2 7625'-7674' Recovered 49'. Core was generally tight with vuggy porosity and porous fractures which contained lost circulation material. No indication of water.

6-28-60 TD 7677' DST #11 7630'-7647' Tool open with weak blow and died. Tool open 4 hrs and recovered 276' gas & 324' oil & gas cut mud. No free water.

6-29-60 Cut Core #3 7675' to 7694' Recovered 19'. Same as Core #2.

6-30-60 TD 7703' ~~Preparing to DST #12.~~

NOTE.—There were ..... runs or sales of oil; ..... M cu. ft. of gas sold; ..... runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.

W

Form 9-329
(January 1950)

16—25766-7 U. S. GOVERNMENT PRINTING OFFICE

State

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Budget Bureau No. 42-R356.2.
Approval expires 11-30-49.

LAND OFFICE Salt Lake City
LEASE NUMBER SL-067064
UNIT Little Valley

LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah County Grand Field Wildcat

The following is a correct report of operations and production (including drilling and producing wells) for the month of July, 1960,

Agent's address 940 Petroleum Club Building
Denver 2, Colorado

Company Murphy Corporation

Signed James M. Fauman

Phone AM 6-0211

Agent's title Division Production Clerk

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (If none, so state)	Remarks (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
LITTLE VALLEY UNIT #1										
NW SW										
Sec. 29	26S	20E	1							
7-1-60										7701' TD DST #12 7680-7701 - Tool open 4 hrs with good blow throughout. Recovered 1670' water and gas cut mud and 1800' salty sulphur water.
7-2-60										Cut Core #4 7701' to 7760' Rec. 59' Wet and N.S.
7-3-60										Cut Core #5 7760' to 7790' Rec. 30' Wet and N.S.
7-5-60										Cut Core #6 7839' to 7849' Rec. 10' Wet and N.S.
7-8-60										Cut Core #7 7863' to 7865' Rec. 1'2" Wet and N.S.
7-14-60										Cut Core #8 8016' to 8051' Rec. 35' Limy dolomite, fair to good fractures.
7-18-60										Cut Core #9 8130' to 8136' Rec 5 1/2' dense dolomite.
7-19-60										Cut Core #10 8136' to 8163 1/2' Rec. 27 1/2' Limy dolomite.
7-20-60										Cut Core #11 8163 1/2' to 8175' Rec. 11 1/2' limy dolomite.
7-22-60										Cut Core #12 8210' to 8258' Rec 48' shale, lime, and dolomite.
7-24-60										Cut Core #13 8258' to 8304' Rec. 46' shale, dolomite, and sand.
7-26-60										Cut Core #14 8309' to 8316' Rec. 7' Wet and N.S.
7-27-60										Cut Core #15 8316' to 8339' Rec 21 1/2' No show of oil, gas, or water.
7-28-60										Cut Core #16 6339' to 6390' Rec. 51' dolomite.
7-30-60										Cut Core #17 8390' to 8398 1/2' Rec. 6.8' dolomite .
7-31-60										Cut Core #18 8406' to 8439' Rec. 33' dolomite and sand, N.S.
8-1-60										8441' coring. Plans are to core 9' more and T.D. well.

NOTE.—There were _____ runs or sales of oil; _____ M. cu. ft. of gas sold; _____ runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.

Form 9-329
(May 1944)

16—25766-4 U. S. GOVERNMENT PRINTING OFFICE

Form 9-331a
(Feb. 1951)

Budget Bureau 42-R358.3.
Approval expires 12-31-55.

Land Office Salt Lake City
Lease No. SL-067064
Unit Little Valley

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			
Notice of Intention to Plug Back & Test	XXX		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

August 3, 1960

Well No. 1 is located 1980 ft. from XXX {N/S} line and 660 ft. from XXXX {E/W} line of sec. 29

NW/4 SW/4 Section 29 (¼ Sec. and Sec. No.) 26 South (Twp.) 20 East (Range) (Meridian)

Wildcat (Field) Grand (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is 5936 ft. RKB

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Reached TD at 8450'. No commercial shows below Salt Section. Plan to plug back as follows and test. Devonian from 8350' to 8370' with 50 sacks and Mississippian from 7550' to 7670' with 50 sacks and Salt Section from 6950' to 7070' with 50 sacks. Then continue open hole testing of shows found in the Salt Section.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Murphy Corporation

Address 940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

By Harold Milan

Title Division Production Superintendent

U. S. GOVERNMENT PRINTING OFFICE 16—8437-5

Form 9-331a
(Feb. 1951)

	29		

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

Land Office: Salt Lake City
Lease No.: SL-067064
Unit: Little Valley

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	XX	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

August 5, 1960

Well No. 1 is located 1980 ft. from {N/S} line and 660 ft. from {E/W} line of sec. 29

NW/4 SW/4 Section 29 — (¼ Sec. and Sec. No.)
26 South — (Twp.)
20 East — (Range)
(Meridian)
Wildcat — (Field)
Grand — (County or Subdivision)
Utah — (State or Territory)

The elevation of the derrick floor above sea level is 5936 ft. RKB

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

A change in plans as to the TD of the well has been made. Prior to this report the TD was 8454' E Log Measurement. Plans are now to drill an additional 100' or possibly to the Cambrian Sand. An Electric Log, Gamma Ray-Neutron, Sonic, Microlaterolog, and Dip Meter was run from the TD of 8454'.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company: Murphy Corporation

Address: 940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

By: Harold Milner

Title: Division Production Superintendent

GPO 862040

Form 9-331a
(Feb. 1951)

29

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

Land Office Salt Lake City

Lease No. SL-067064

Unit Little Valley

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			
Notice of Intention to Plug back and Test XX			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

August 17, 1960

Well No. 1 is located 1980 ft. from ~~XXXX~~ {S} line and 660 ft. from ~~XXXXXX~~ {W} line of sec. 29

NW/4 SW/4 Section 29 (¼ Sec. and Sec. No.) 26 South (Twp.) 20 East (Range) (Meridian)

Wildcat (Field) Grand (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is 5936 ft. RKB.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Reached TD at 8596'. No commercial shows below the Salt Section. Plan to plug back as follows and test. Devonian from 8350' to 8370' with 50 sacks, Mississippian from 7550' to 7670' with 50 sacks, and the Salt Section from 6950' to 7070' with 50 sacks. Then continue open hole testing of shows found in the Salt Section.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Murphy Corporation

Address 940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

By Harold Milan

Title Division Production Superintendent

GPO 862040

Form 9-331 a
(Feb. 1951)

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

	29		

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Salt Lake City
Lease No. SL-067064
Unit Little Valley

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL	XX		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

August 22, 1960

Well No. 1 is located 1980 ft. from {XX S} line and 660 ft. from {XX W} line of sec. 29

NW/4 SW/4 Section 29 (¼ Sec. and Sec. No.) 26 South (Twp.) 20 East (Range) (Meridian)

Wildcat (Field) Grand (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is 5936 ft. RKB

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Drilled a 8 3/4" hole to 8600'. Electric log tops were as follows: Chinle Shale 446', Monkop 798', Coco Hino 1263', Cotler 1343', Upper Hermosa 2733', Paradox Salt 4216', Lower Hermosa 7450', Ouray 8080', Elbert 8250', Devonian McCracken Sd. 8386', Pre-Cambrian 8578'. Ran drill pipe & conditioned mud, plugged well as follows: Plug #1 8239' to 8370' w/50 sx, 3% HA-5; Plug #2 7540' to 7670' w/50 sx, 3% HA-5; Plug #3 6940' to 7070' w/50 sx, 3% HA-5. Flow tested Salt Section through drill pipe for two days. Flowing 40 BWPH with trace of oil & gas. Approval is now requested to plug well as follows: 5980' to 6100' w/50 sx; 4154' to 4274' w/50 sx; bottom of surface casing(243') w/20 sx; surface w/10 sx. The hole will be filled with a good high quality mud. A pipe marker and well sign will be erected acceptable to the U.S.G.S.

The 9 5/8" Intermediate Casing will be cut and pulled from approximately 3500'.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Murphy Corporation

Address 940 Petroleum Club Bldg.
110 Sixteenth Street
Denver 2, Colorado

By Harold Milam

Title Division Production Supt.

GPO 862040

COPY

FROM
MURPHY CORPORATION
EL DORADO, ARKANSAS

August 23, 1960

940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

Oil & Gas Conservation Commission
State of Utah
Room 310 Newhouse Building
Salt Lake City, Utah
Attention: Mr. Feight

United States Geological Survey
457 Federal Building
Salt Lake City, Utah
Attention: Mr. Russell

Gentlemen:

Attached are two copies of all logs run by Murphy Corporation on the Little Valley Unit #1 well in Grand County, Utah, except the Caliper Log. On August 4, 1960, Pure Oil Company took over operations and drilled to 8600'. Copies of their logs and Murphy Corporation's Caliper Log will be sent to your attention as soon as they are received here.

Yours very truly,

MURPHY CORPORATION

James M. Freeman

James M. Freeman
Division Production Clerk

JMF:rn
Attachments

Form 9-331a
(Feb. 1951)

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

Land Office Salt Lake City
Lease No. SL-067064
Unit Little Valley

D	29		

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	XX
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

August 24, 1960

Well No. 1 is located 1980 ft. from {N/S} line and 660 ft. from {E/W} line of sec. 29

NW/4 SW/4 Section 29 (¼ Sec. and Sec. No.) 26 South (Twp.) 20 East (Range) (Meridian)

Wildcat (Field) Grand (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is 5936 ft. RKB

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Plugged well as follows: Plug #4 5966' to 6103' with 50 sx., 3% HA-5; Plug #5 4141' to 4272' with 50 sx, 3% HA-5. Completed plugging at 6:45 PM 8-22-60. W.O.C. 3 hours. Shot off 9 5/8" casing at 3756'. Laid pipe down and plugged well as follows: Plug #6 202' to 243' with 15 sx; Plug #7 surface with 10 sx. Rig was released at 6 AM 8-24-60. A permanent pipe marker and well sign was erected. Plans are to back fill pits in approximately 30 days or as soon as they dry out.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Murphy Corporation

Address 940 Petroleum Club Bldg.
110 Sixteenth Street
Denver 2, Colorado

By Harold Milan

Title Division Production Supt.

GPO 862040

COPY

FROM
MURPHY CORPORATION
EL DORADO, ARKANSAS

August 30, 1960

940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

Oil & Gas Conservation Commission
State of Utah
Room 310 Newhouse Building
Salt Lake City, Utah

United States Geological Survey
457 Federal Building
Salt Lake City, Utah

Gentlemen:

Attached are two copies each of the Laterolog, Sonic Log, and the Gamma Ray-Neutron Log which were run by Pure Oil Company on our recently plugged Little Valley Unit #1 Well, Grand County, Utah.

Yours very truly,

MURPHY CORPORATION

Harold Milam/rn

Harold Milam
Division Production Superintendent

HM:rn
Attachments

MURPHY CORPORATION

EL DORADO, ARKANSAS

September 21, 1960

PLEASE REPLY TO OUR
DIVISION OFFICE

940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

Oil & Gas Conservation Commission
State of Utah
Room 310 Newhouse Building
Salt Lake City, Utah
Attention: Mr. Feight

United States Geological Survey
457 Federal Building
Salt Lake City, Utah
Attention: Mr. Donald F. Russell

Gentlemen:

Attached is the final report, The Log of Oil or Gas Well, on our Little Valley Unit #1 well. Also attached are two copies of Murphy Corporation's Well History.

Plans are to level location and back fill the pits as soon as they dry up. You will be notified when this project is completed.

Yours very truly,

MURPHY CORPORATION

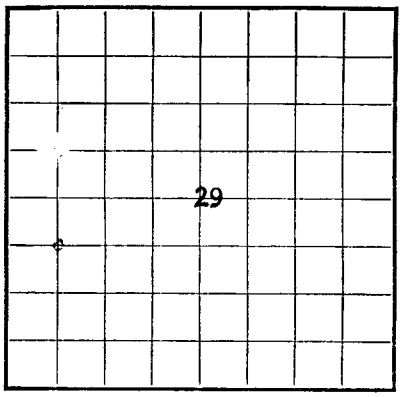
James M. Freeman
Division Production Clerk

JMF:rn
Attachments

Form 9-330

Bureau No. 42-R355.4.
Expires 12-31-60.

U. S. LAND OFFICE Salt Lake City
SERIAL NUMBER SL-067064
LEASE OR PERMIT TO PROSPECT



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company Murphy Corporation Address 940 Petroleum Club Bldg, Denver 2, Colo.

Lessor or Tract Little Valley Unit Field Wildcat State Utah

Well No. 1 Sec. 29 T. 26S R. 20E Meridian County Grand

Location 1980 ft. {N. / S} of S Line and 660 ft. {E. / W} of W Line of Section 29 Elevation 5936 RKB (Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed Harold Dillon

Date August 26, 1960 Title Division Production Supt.

The summary on this page is for the condition of the well at above date.

Commenced drilling 5:30 PM April 4, 1960 Finished drilling August 18, 1960

OIL OR GAS SANDS OR ZONES

(*Denote gas by G*)

No. 1, from to No. 4, from to

No. 2, from to No. 5, from to

No. 3, from to No. 6, from to

IMPORTANT WATER SANDS

No. 1, from to No. 3, from to

No. 2, from to No. 4, from to

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
20"				18'	None				Conductor csg.
13 3/8"	48#	8 rd	H-40	229.35'	Halliburton				Surface csg.
9 5/8"	36&40#	8 rd	J-55	4200.15'	Halliburton	3756'	3900'	3756'	Intermediate csg.

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
20"	30.00'	Cmtd to surface	Hand		
13 3/8"	242.50'	250 sx reg cmt.	Pump & plug		
9 5/8"	4212.15'	350 sx 50-50 cmt & pozlin	Pump & plug		

PLUGS AND ADAPTERS

Heaving plug—Material ..... Length ..... Depth set .....

Adapters—Material ..... Size .....

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from 18 feet to 8600 feet, and from ..... feet to ..... feet

Dry hole digger was used from 0 feet to 18 feet, and from ..... feet to ..... feet

~~Cable tools were used from~~

DATES

....., 19..... Put to producing ....., 19.....

The production for the first 24 hours was 0 barrels of fluid of which 0 % was oil; 0 % emulsion; 0 % water; and 0 % sediment. Gravity, °Bé. .....

If gas well, cu. ft. per 24 hours None Gallons gasoline per 1,000 cu. ft. of gas None

Rock pressure, lbs. per sq. in. ..... Well plugged & abandoned 8-24-60.

EMPLOYEES

H. J. Kirby, Driller G. E. Lawson, Driller

G. W. Gray, Driller S. A. Bunckhalter, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
446'	798'		Chinle Shale
798'	1263'		Monkop
1263'	1343'		Coco Hino
1343'	2733'		Cotler
2733'	4216'		Upper Hermosa
4216'	7450'		Paradox Salt
7450'	8080'		Lower Hermosa
8080'	8250'		Ouray
8250'	8386'		Elbert
8386'	8578'		Devonian McCracken Sd.
8578'			Pre-Cambrian

FROM— TO— TOTAL FEET FORMATION

[OVER]

FORMATION RECORD—Continued

WELL HISTORY

9N/

LITTLE VALLEY UNIT NO. 1

GRAND COUNTY, UTAH

MURPHY CORPORATION - OPERATOR

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SUMMARY OF WELL HISTORY

WELL NAME AND NUMBER:	Little Valley Unit No. 1
FIELD:	Wildcat
LOCATION:	1980' FSL & 660' FWL Section 29, Township 26 South - Range 20 East
DRILLING UNIT:	
WORKING INTEREST:	26.1667%
REVENUE INTEREST:	21.1667%
ELEVATION:	5924' Ground 5936' RKB
WELL HEAD MARKER:	Top of 13 3/8" casing head collar. Casing head collar is 14.15' below RKB
CONTRACTOR:	Will I. Lewis Drilling Company
SPUDDED:	5:30 P.M. April 4, 1960
COMPLETED:	6:00 A.M. August 24, 1960
TOTAL DEPTH:	8600' Drillers Meas. (Note: Drilled to 8596' and logged. Drillers TD 8596' = Schl. TD 8592'. Later, 4' was drilled with rock bit making drillers TD 8600'.)
CASING:	20" Conductor @ 18' and cemented to surface. 13 3/8" casing @ 243.50' with 250 sacks. 9 5/8" casing @ 4212.15' w/350 sacks. Cut and pulled 3756' when P & A.
INITIAL PRODUCTION INTERVAL:	None. Well Plugged and Abandoned.
TUBING:	None. Well Plugged and Abandoned.
INITIAL POTENTIAL:	None. Well Plugged and Abandoned.
INITIAL ACID TREATMENT:	None. Well Plugged and Abandoned.
INITIAL FRAC TREATMENT:	None. Well Plugged and Abandoned.

WELL LOG DATA

TYPE OF LOG:	INTERVAL LOGGED:
McCullough Caliper Survey Log	242' to 3070'
Schlumberger Temperature Log	250' to 3912'
Schlumberger Gamma Ray-Neutron Log	50' to 8451'
Schlumberger Sonic Log	4216' to 8451'
Schlumberger Laterolog	4216' to 8450'
Schlumberger Dipmeter Log	4216' to 8451'
Schlumberger Gamma Ray-Neutron Log	8451' to 8596'
Schlumberger Sonic Log	8451' to 8592'
Schlumberger Laterolog	8450' to 8592'

LOG TOPS:

Chinle Shale	446'	Salt Base	7450'
Moenkopi	798'	Mississippian	7548'
Coconino	1263'	Ouray	8080'
Cutler	1343'	Elbert	8250'
Upper Hermosa	2733'	Devonian McCracken Sd.	8386'
Paradox Salt	4216'	Cambrian	8578'

DRILL STEM TEST RECORD

DST #1 - 6763' to 6805' - Straddle Packers - No water cushion. Tool opened at 4:15 PM with good blow. Shut in at 4:19 PM for ISIP. Re-opened tool at 4:44 PM. Gas to surface in 12 mins. Remained steady throughout test. Estimated 50,000 cubic feet per day. Closed tool at 4:55 PM 6/5/60. No fluid after 12 hr test. During test blowout preventers were closed to stop water flow from the upper zones. SIP 800# at surface. Opened blow line to pits. Flowed gas, oil, and salt water for 30 mins before pressure was depleted. Oil recovered is black 31.5 gravity sweet crude. Salt water flowed at the rate of 280 BPH with two to five percent live gas and oil. Recovered 728' light green oil (728' = 10 bbls) and 1997' of gas cut salt water (1997' = 28 bbls). Hydro 3370, ISIP 3370#, IFP 240#, FFP 940#, No final SIP; clock stopped. Bottom packer did not hold.

Production Test #2 - 6004' to 6044' - Lynes Straddle Packers: Tool open at 10:50 AM. Recovered new fluid to surface at 11:20 AM. Flowed well at calculated rate of 168 BPH of salt water with trace of oil and 3/4" choke with 175# FTP. Closed tool at 12:00 noon. 10 min SIP on surface 600#.

Production Test #3 - 6590' to 6630' - Lynes Straddle Packers: Filled drill pipe with fresh water to hydraulically set packers. Tool open for 30 mins. Received intermittent weak blow for 30 mins. Closed tool. This considered as dry test. The weak blow is believed caused by air working out of the load water.

Production Test #4 - 6220' to 6260' - Lynes Straddle Packers: Tool open 30 mins. Received weak blow for 10 mins, and no blow for 20 mins. Considered dry test.

Production Test #5 - 6430' to 6470' - Lynes Straddle Packers: Tool open for 15 mins with no blow. Considered dry test.

Production Test #6 - 6430' to 6983' - Lynes Straddle Packers: Tool open for 1 hr. Received small pencil size stream throughout test period. This flow believed to be coming from the zone tested on DST #1.

Production Test #7 - 6165' to 6205' - Lynes Straddle Packers: Tool open for 15 mins with no blow. Considered dry test.

Production Test #8 - 6165' to 6983' - Lynes Straddle Packers: Tool open for 30 mins. Recovered pencil size streams throughout test period. This flow believed coming from same interval as DST #1 and Production Test #6.

DRILL STEM TEST RECORD: (CONTINUED)

Production Test #9 - 6000' to 6040' - Lynes Straddle Packers: Tool open 70 mins. Received immediate strong blow. Flowed fresh water 31 mins, gas and oil cut mud 5 mins, salt water cut mud 2 mins, then salt water with trace of oil 35 mins. Closed tool and reversed out recovery which was salt water with trace of oil and gas.

DST #10 - 7550' to 7625': Tool opened with weak blow, died in 5 mins. Tool open 1½ hrs. IHP 5295#, ISIP 50# (30 mins), IFP 25#, FFP 25# after 1½ hrs, FSIP 25# (30 mins), FHP 5270#. Recovered 5' drilling mud.

DST #11 - 7630' to 7674': 3/4" bottom choke. Tool open with weak blow under 2" of water decreasing at end of test. Tool open 4 hrs. Recovered 276' gas and 324' oil and gas cut mud. No free water. IHP 5525#, ISIP 2565# (30 mins), IFP 50#, FFP 140#, FSIP 1905# (30 mins), FHP 5405#.

DST #12 - 7680' to 7701': Tool open 4 hrs with good blow throughout test. Recovered 1670' water and gas cut mud, 1800' salty sulphur water. (Salt 45,000 PPM & Wt 8.9#). ISIP 3940# (30 mins), FSIP 2585# (30 mins), IFP 450#, FFP 1685#, IHP 5685#, FHP 5665#.

COMPLETION DATA

CASING PROGRAM:

18' of 20" Conductor casing was set 12' below RKB with a dry hole digger.

Drilled a 9 5/8" hole to 485' and reamed 17 1/8" to 244' and set 7 joints (229.35') of 13 3/8" 48# H-40 8rd R-2 Casing, 14.15' below RKB at 243.50'. Cemented casing with 250 sacks regular cement and 2% $CaCl_2$. Good clean cement returns to surface. Plug down at 3:00 A.M. 4-9-60.

Drilled a 12 1/4" hole to 4218' TD. Ran and cemented 131 jts. (4200.15') of 9 5/8" 36# and 40# J-55 LT&C Range-2 casing as follows:

7 jts. 9 5/8" 40#	235.15'
123 jts. 9 5/8" 36#	3960.68'
1 jt. 9 5/8" 40#	4.32'
Total casing in hole	4200.15'
Landed below RKB	12.00'
Casing Set at	4212.15'

Cemented with 350 sacks of 50-50 cement and poslin, 2% gel and 24% salt. Bumped plug at 6:10 P.M. 5-24-60. Ran temperature survey and indicated top of cement at 3900'.

COMPLETION SUMMARY:

The Little Valley Unit #1 Well was spudded at 5:30 P.M. April 4, 1960. Prior to this date, 18' of conductor casing had been set with a dry hole digger. A 9 5/8" hole was drilled to 485' and reamed with a 17 1/8" reamer to 244'. Ran and cemented 13 3/8" surface casing at 243.50'. Plug down at 3:00 A.M. 4-9-60. W.O.C. Drilled out from under surface 4-11-60 drilling a 12 1/4" hole with air. Drilled to 3088' and lost circulation. Ran caliper log and found three lost circulation zones below 2700' at 2770', 2860', and 2975'. The upper and lower cavities were easily healed using Lynes Straddle packers and pumping in cement, diesel oil, and lost circulation material. After 785 sacks cement and approximately 300 sacks calseal along with gilsonite, gel, diesel oil, tuf plug, fiber seal, brush, and other lost circulation material, the zone at 2860' was squeezed off on the ninth squeeze job attempt. On the ninth squeeze job a nylon bag was set in the lost circulation section and filled with 120 sacks calseal. After allowing the calseal to set up the plug was drilled with returns. Drilled to 4218' and

ran and cemented 9 5/8" intermediate string of casing. Casing was set at 4212.15' and bumped plug at 6:10 P.M. 5-24-60. Ran temperature survey and indicated top of cement at 3900'. Drilled plug 5-28-60 with an 8 3/4" rock bit using salt water as drilling fluid; drilling lime, shale, and salt. Drilled to 6983' and had small show of oil and gas. Ran 8 production tests and a DST with no good indication of oil. Large salt water flow zones were controlled with 14# salt saturated mud. Shut in pressure at surface 600#. Salt water flows were calculated flowing at the rate of 168 BSWPH on a 3/4" choke with 175# flowing pressure, and 280 BSWPH open flow. Mudded up and drilled ahead to 7200' and cut Core #1. Drilled to 7625' and ran DST #10 7550' to 7625', recovered 5' of drilling mud. Went in hole and cut Core #2 7625' to 7674', recovered 49'. Core was generally tight with vuggy porosity and porous fracs which contained lost circulation material. No indication of water. Ran DST #11 7630' to 7674' and recovered 276' gas and 324' of oil and gas cut mud. No free water. Cut Core #3 7675' to 7694', recovered 19'. No show of water. Having great deal of lost circulation trouble in vugs and fractures. DST #12 7680' to 7701'. Recovered 1670' water and gas cut mud, and 1800' salty sulphur water. Went in hole and cut Core #4 7701' to 7760', recovered 59'. Cut Core #5 7760' to 7790', recovered 30'. Core wet. Drilled to 7839' and cut Core #6 7839' to 7849', recovered 10'. Core wet. Went in hole with rock bit with water courses removed and drilled to 7863'. Cut Core #7 7863' to 7865', recovered 1' and 2". Wet and no show. Drilled to 8016' with rock bit and cut Core #8 8016' to 8051', recovered 35'. Entire core wet. Drilled to 8130' and cut Core #9 8130' to 8136', recovered 5½'. Cut Core #10 8136' to 8163½', recovered 27½'. Cut Core #11 8163½'to 8175', recovered 11½'. Lost circulation at 8175' and 8180'. Drilled ahead with rock bit and lost circulation material in mud. (There was to much lost circulation material in the mud to core, and the water courses were cut out of the rock bit.) Cut Core #12 8210' to 8258' and core barrel jammed by lost circulation material. Recovered 48'. Cut Core #13 8358' to 8304', recovered 46'. Lost circulation at 8304'. Mixed lost circulation material and drilled with rock bit from 8304' to 8309'. Penetration too slow. Cut Core #14 at the rate of 1 to 2 hrs per foot from 8309' to 8316' and recovered 7'. N.S. and wet. Cut Core #15 at the rate of 1 hr per foot from 8316' to 8339' and recovered 23'. No show of oil, gas, or water. Cut Core #16 8339' to 8390' (penetration 30-40 MPF) and recovered 51'. Cut Core #17 8390' to 8398½' and lost circulation. Recovered 6.8' and ran rock bit and lost circulation material. Regained circulation and cut Core #18 from 8406' to 8439' and recovered 33', N.S. Cut Core #19 8439' to 8451' and recovered 9' dol, no show of oil, gas, or water. Strapped out of hole. S.L.M. 8451' = 8454'. Well started flowing salt water while pulling core with 13# mud in hole. Ran rock bit and conditioned mud to 13.2#; killed water flow and began losing a little mud. Pulled pipe and ran Schlumberger Gamma Ray-Neutron Log, Sonic Log, and Laterolog. Well began flowing. Made trip to condition mud.

Pure Oil Company decided to take over operations and drill approximately 100' more. Cut Core #20 from 8454' to 8469', recovered 15' dolomite and sandstone, N.S. Drilled from 8468' to 8486'. Cut Core #21 8486' to

8501' and recovered 14' dolomite and siltstone, N.S. Drilled to 8596' Drillers Meas. and logged well. 8596' Drillers Meas. = 8592' Log Meas. Conditioned hole and attempted to run DST 8456' to 8522' with straddle packers, packers failed. Reset packers at 8444' to 8522' and packers again failed. Ran bit, circulated and conditioned hole, and drilled 4'. Attempted DST 8403' to 8523' and packers failed. Pure Oil Company released well to Murphy Corporation at 4:00 P.M. 8-19-60.

Plugged well as follows:

Plug #1 8239' to 8370' with 50 sx., 3% HA-5
Plug #2 7540' to 7670' with 50 sx., 3% HA-5
Plug #3 6940' to 7070' with 50 sx., 3% HA-5

Pulled open ended drill pipe to 4213' and W.O.C. 5 hrs. Displaced mud with water. Flow tested well for 44 hrs flowing at the rate of 40 bbls salt water per hour with a trace of oil and gas.

Plugged well as follows:

Plug #4 5966' to 6103' with 50 sx., 3% HA-5
Plug #5 4141' to 4272' with 50 sx., 3% HA-5

Completed plugging at 6:45 P.M. 8-22-60. W.O.C. 3 hrs. Laid down drill pipe. Shot off 9 5/8" casing at 3756'. Laid pipe down and plugged well as follows:

Plug #6 202' to 243' with 15 sx.
Plug #7 Surface with 10 sx.

Rig was released at 6:00 A.M. 8-24-60. A permanent pipe marker and well sign was erected. Plans are to back fill pits in approximately 30 days or as soon as they dry out.

SURFACE EQUIPMENT RECORD

1. Well Head Equipment: None. Well Plugged and Abandoned

2. Lifting Equipment: None. Well Plugged and Abandoned

3. Compressor, Other Installations: None. Well Plugged and Abandoned

4. Storage Facilities: None. Well Plugged and Abandoned

SUB-SURFACE EQUIPMENT RECORD

1. Packers: None. Well Plugged and Abandoned

2. Depth Installed: None. Well Plugged and Abandoned

3. Rods: None. Well Plugged and Abandoned

4. Pump: None. Well Plugged and Abandoned

5. Gas Valves: None. Well Plugged and Abandoned

NORTHERN MUD COMPANY, INC.

365 PETROLEUM CLUB BUILDING

COMPLETE
DRILLING MUD SERVICE

110 16TH STREET
DENVER 2, COLORADO

Serving
NEW MEXICO
WASHINGTON
NO. DAKOTA
SO. DAKOTA
COLORADO
MONTANA
WYOMING
ARIZONA
OREGON
NEVADA
IDAHO
UTAH

WELL RECAP

Well Name: Little Valley #1

	Murphy Corp. Units	Murphy Corp. Amount	Pure Oil Units	Magcobar Amount
Magcogel	2163	$ 5,636.78	4	$ 10.42
Magcobar	13621	41,186.75	6316	19,014.37
Chip Seal	260	1,057.28	103	427.45
My Lo Jel	358	2,720.80	300	228.00
My Lo Jel Pres.	217	1,911.00	4	92.00
Driscose	92	3,827.20		
Mud Fiber	116	452.40	216	842.40
Cottonseed Hulls	145	652.50	4	18.00
Lime	415	913.00		
Magco Fiber	555	2,303.25	105	435.25
Fiber Seal	308	1,278.20	36	149.40
Cello Seal	173	1,332.10	350	2,695.00
Afrom	113	1,430.00		
Spersene	98	1,274.00	7	91.00
Quebracho	19	256.50	(2)	(27.00)
Soda Ash	97	824.50	6	51.00
Tuff Plug	82	984.00	48	576.00
Salt Gel	2209	6,502.41	671	1,975.17
Defoamer B.C.	5	150.00		
Super Plug	60	670.00		
Aluminum Sterate	2	37.50		
Caustic Soda	36	504.00	7	98.00
High Yield	155	441.44		
Hi Vis Driscose	16	665.60	24	360.00
Drilling Detergent	27	405.00		
Magco Mica	3	11.70	446	1,739.40
Sodium Bichromate	1	29.00		
Gypsum	(14)	(40.60)	14	40.60
Cement	475	950.00		
Magco Wool	33	153.45	16	74.40
Tech. Chem.	7	2,002.00		
Sure Check Tool	1	1,500.00		
Total Products	21848	$82,022.00	8675	$30,943.36
Drayage		9,221.50		3,288.38
Sales Tax		2,047.48		827.57
Grand Total		$93,290.98		$35,059.31

OFFICES:
- P. O. Box 1223 Billings, Montana
- P. O. Box 558 Casper, Wyoming
- P. O. Box 936 Farmington, New Mexico
- P. O. Box 1204 Williston, North Dakota

DRILLING MUD SUMMARY

A water base mud with gel and lime was used to drill the surface hole to 485'. Surface casing was set and plans were to drill to the top of the salt with air (expected at 4200'). Water was encountered at 642' and additional water was picked up at 1200'. Large amounts of soap were used in an effort to dry up water seepage. At 2300' the system was changed over to aerated lime water to reduce the use of soap. Lost circulation zones were encountered at 2770', 2860', and 2995'. These zones were filled with salt water. The upper and lower cavities were easily healed using Lynes packers and pumping cement, diesel oil, and lost circulation material into the cavities. 785 sacks of cement and approximately 300 sacks cal seal, lost circulation material, brush and tree branches were pumped into the lost circulation zone at 2860' with no results. This lost circulation material was spotted at the cavity in two joints of 8 5/8" casing on the end of the drill pipe and pumped into the cavity with pump pressure. On the ninth squeeze job attempt the zone was squeezed off with a nylon bag which was set in the lost circulation zone and filled with 120 sacks cal seal. After allowing the cal seal to set up, the plug was drilled with returns. Drilling was continued with aerated water to 4200'. An intermediate string of casing was set on top of the Salt Section and cemented. Salt water was used as drilling fluid while drilling the Salt Section. A strong flow of salt water was encountered at 6040'. The system was changed over to a salt water base mud at 6900' and continued to T.D. Since there were many lost circulation zones in the Salt Section and below, the mud weight had to be kept as low as possible. Mud weights lower than 13# would allow the salt water flow to kick. It is estimated that at least 2/3 of the total mud cost was spent combating lost circulation and water flows.

Ground | Big hat W/C | Utah | 27 | 26S | 20E | Murphy Corporation

COUNTY San Juan | FIELD | STATE | SEC. | TOWNSHIP | RANGE | OPERATOR

Wm. L. Lewis Drlg Co | Little Valley Unit | 4-54 | 8-3-66 | Kirby

CONTRACTOR | LOC. 1450' FSL | SPUD | US | INTER. | COMP. | TOOL PUSHER

TOOL JOINTS: 4½ FH | SIZE & TYPE: 5½ | OD

DRILL COLLARS: 19 | NO.: 6¼, 7¾, 2¼ | OD: Air Well 21SP | ID: oil Well 21SP

PUMP NO. 1: 7¾x18 | PUMP NO. 2: 7¾x18

Western Equipment DIVISION

SALESMAN

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT 1000 LBS	RPM	VERT DEV.	PUMP PRES.	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT	MUD VIS	REMARKS Tops
1	9⅞	Reed	YS1			250	250	23½	8/1	100	¼	300						70	
2	9⅞	HTC	OSC1		63315	488	238	16½	30	100	¼	300						65	
1	12¼	Reed	HO			244	244	21	8/11	100	¼	300							
		Set	244'	of	13⅜	csg	w/300	sks	Bulk	cement									
1	12¼	Reed	YM1			778	534	30½	20	90		300	Air						
2	12¼	Sec	M4L			1481	703	23¾	30	90	¾	300	Air						
3	12¼	CP	EHS			1943	462	36¾	30	90		300	Air						Cutting 1.5
4	12¼	Reed	YM1			2318	375	24	30	90	1¼	300	Air						Formation 1440
5	12¼	HTC	W7		45055	2564	236	19½	40	100	1¼	300	Air						Reef 2594
6	12¼	Reed	YM		Retip	2644	90	10	40	75		300	Air						Formation 1560
7	12¼	Sec	M4L			2729	85	10½	40	100		300	Air						Cement 2754
8	12¼	Smith	T2			2784	55	11	40	100		250	Air						
9	12¼	HTC	W7		45063	2889	105	15¾	40	100	2	250	Air						
10	12¼	Sec	J6			3042	133	17½	40	100	3	300	Air						
11	12¼	CP	ES2		Rebuilt	3058	16	1	40	100	3	300	Air						

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT 1000 LBS	RPM	VERT DEV.	PUMP PRES	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT	MUD VIS	REMARKS
12	12¼	CP	EHW		Retip	3231	145	18¾	30	100	3°	300	HOATIC	Fish +	6 1/8	Lost			DAYS
13	12¼	HTC	OWC		47841	3415	181	29¾	30	70	2¾	300							
14	12¼	HTC	W7	3/4	24829	3586	174	30¾	40	70	2¾	300						5/16	
15	12¼	Reed	YS1			3704	118	33¾	40	70	2¾	300							
16	12¼	HTC	W7RT		47203	3748	44	20½	30	70	2¾	300							
17	12¼	HTC	W7		51771	3860	112	21¼	30	70		300						5-18	
			OWV			3970	110	22	40	70		300							Intermediate 4180
			OWC			4052	82	20	40	70		300							Cement
			YH			4175	123	24	39	90	2¾	150	34	5	16	water	Lost		
			WR			4176	1	2¾	Running on Cone										
22	8¾		W7R			4220												5/23	

Ran 4220' of 9⅝" csg

1	8¾	HTC	OSC6	3/4	22000	4539	339	20½	15	95	3°	1400	45	5½					
2	8¾	HTC	OSC6J	3/4	21450	4903	344	21¼	2	100	5°	1400	50	5½					
3	8¾	HTC	OSC6J	Dual	11683	5269	366	19½	2	100	4°	1400	50	6½	Fish			5/4	DST
4	8¾	HTC	OSC6J	3/4	24551	5622	353	28	10	100	4°	1400	50	8½	Fish	6½			DST
5	8¾	HTC	OSC	Dual	11677	6041	419	20	10	100	4½	1350	50	5½					DST
6	8¾	HTC	OSC		11639	6902	861	25½	2	100		1400	50	5½				6/5/60	DST

FORM 77 REV. 2-57 PRINTED IN U.S.A.

COUNTY	FIELD	STATE	SEC.	TOWNSHIP	RANGE	OPERATOR
		Utah	29	36S	20E	

WILL I LEWIS DRILLING — WILDCAT

CONTRACTOR	LOC.	SPUD	TD	RIGS	COMP.	TOOL PUSHER

TOOL JOINTS SIZE & TYPE OD — DRILL COLLARS NO. OD ID — PUMP NO. 1 — PUMP NO. 2

DIVISION — FALLSMAN

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT 1000 LBS	RPM	VERT DEV.	PUMP PRES.	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT	MUD VIS	REMARKS
7	8¾	HTC	OSC1C		11574	6983	81	3	40	100	3	1100	55	5½			42	52	135 FPM
8	8¾	HTC	W7		93010	7200	17	3	40	100	3	1100	55	5½			34	54	6-11-60
1	8¾	OHS	Core			7230	30	14½	26	100		1200	50	5½			36	50	
9	8¾	CP	EMIV		201057	7296	66	13	40	85		1000	50	5½			37	56	
10	8¾	HTC	OWV		25014	7421	125	22	45	70	2	1000	50	5½			39	59	130 FPM
11	8¾	HTC	OWJ		23981	7469	48	21½	40	70		1400	55	5½			40	45	
12	8¾	HTC	OSCJ		27274	7484	25	9½	40	70		1400	55	5½			43	46	
13	8¾	REED	YS		201166	7506	22	15¾	40	70		1000	54	5½			43	46	
14	8¾	HTC	OWV		25852	7528	22	13½	40	70		1000	54	5½			42	48	6-18 DST
15	8¾	HTC	OWC		67479	7549	21	14	40	70	2	1000	54	5½			35	47	135 FPM
16	8¾	HCS	J2		532265	7557	8	5	45	70		1000	54	5½			44	47	[illegible]
17	8¾	HTC	W7R		26479	7596	39	27¾	45	70	1½	1000	55	5½			44	50	
18	8¾	REED	YH		101655	Hit	Bottom	26	Hours	Core				5½					
19	8¾	HTC	W7		65360	7602	6	7¾	45	70		1000	54	5½			44	54	
20	8¾	HTC	W7R-2		70396	7625	22	20	55	70		800	50	5½			46	50	

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT 1000 LBS	RPM	VERT DEV	PUMP PRES	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT	MUD VIS	REMARKS
2	8¾	OHS	DIA		Core	7674	49	49	44	70		600	55	5½			36	58	DST
21	8¾	HTC	W7R-2		73569	7675	50	20	45	70	1½	1100	55	5½			36	62	
3	8¾	CHIS	DIA		Core	7693	18	8½	24	56		1200	55	5½			36	64	DST
22	8¾	HTC	W7R-2	RR	23569	7701	8	6½	35			1250	57	5½			37	110	Palahite
4	8¾	CHIS	DIA		Core	7760	59	25¾	30	60		1250	57	5½			36	110	
5	8¾	CHIS	DIA		Core	7789	29	11¼	30	60		800	55	5½			34	80	135 FPM
23	8¾	REED	YH			7819	30	13¼	55	60		800	55	5½			34	85	
24	8¾	REED	YH			7839	20	8	55	60		1250	57	5½			34	95	
6	8¾	CHIS	DIA		Core	7849	10	13	25	60		800	55	5½			34	96	
25	8¾	HTC	W7R-2		RR	7863	14	13	45	70		1000	56	5½			35	110	
7	8¾	CHIS	DIA		Core	7865	2	1½	30	70		500	54	5½			35	125	
26	8¾	REED	YH			7898	33	16½	55	70		500	54	5½			38	64	
27	8¾	REED	YH			7939	41	18¾	55	70		750	54	5½			38	68	
28	8¾	HTC	W7		93055	7971	32	20½	55	70		750	54	5½			32	65	
29	8¾	REED	2GNW			7984	13	10½	55	70		750	54	5½			33	68	
30	8¾	REED	YH			8016	32	23	55	70		750	54	5½			32	68	
8	8¾	CHIS	DIA		Core	8051	35	17½	25	60		1500	50	5½			32	60	
31	8¾	REED	YH			8095	44	24	55	60		800	54	5½			33	83	
32	8¾	REED	YH			8118	23	9½	55	60		500	54	5½			41	84	
33	8¾	REED	YH			8130	12	10	55	60		800	50	5½			42	86	7-16

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COUNTY	FIELD	STATE	SEC.	TOWNSHIP	RANGE	OPERATOR
		UTAH	29	26S	20E	

CONTRACTOR	LOC.	SPUD	US	INTER.	COMP.	TOOL PUSHER
WILL I LEWIS DRL. CO.	LITT LE VALLEY #1					

TOOL JOINTS SIZE & TYPE OD | DRILL COLLARS NO. OD ID | PUMP NO. 1 | PUMP NO. 2

DIVISION | SALESMAN

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT. 1000 LBS	RPM	TEST DEV.	PUMP PRES.	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT.	MUD VIS.	REMARKS
9	8 3/4	DHS	CORE		CORE	8136	6	6 3/4	26	60		1200	48	5 1/2			124	60	125 FPM
10	8 7/16	CHIS	CORE		CORE	8163	27	25	26	60		1200	48	5 1/2			125	63	
11	8 7/16	CHIS	CORE		CORE	8175	12	9 1/4	26	65		1200	52	5 1/2			124	62	
34A	8 3/4	REED	YH			8180	5	5	55	65		300	54	5 1/2			128	48	
35	8 3/4	REED	YH			8210	30	18 1/2	55	65		1000	54	5 1/2			123	50	
12	8 7/16	CHIS	DIA		CORE	8304	94	58	26	60		1000	48	5 1/2			133	58	DOLOMITE 7-22
36	8 3/4	REED	YH			8309	5	3 3/4	55	70		450	48	5 1/2			133	85	
13	8 7/16	CHIS	DIA		CORE	8316	7	10 1/2	26	70		1200	52	5 1/2			133	65	DOLOMITIC
14	8 7/16	CHIS	DIA		CORE	8339	23	25	26	70		1000	52	5 1/2			130	65	DOLOMITIC SAND
15	8 7/16	CHIS	DIA		CORE	8390	51	34 1/2	25	70		1000	48	5 1/2			132	65	
16	8 7/16	CHIS	DIA		CORE	8398	8	8	25	70		1200	48	5 1/2			131	66	
37	8 3/4	REED	YH			8406	8	5 1/4	55	70		500	48	5 1/2			130	60	
17	8 7/16	CHIS	DIA		CORE	8439	33	23 3/4	25	70		1200	48	5 1/2			131	55	
18	8 7/16	CHIS	DIAMOND		CORE	8454	15	6 3/4	25	70		1200	48	5 1/2			132	53	
														T.D.	8-1-60				

COUNTY	FIELD	STATE	SEC.	TOWNSHIP	RANGE	OPERATOR
GRAND		UTAH	29	26S	20E	Pure Oil-Murphy

CONTRACTOR	LOC.	SPUD	US	INTER.	COMP.	TOOL PUSHER
Will I Lewis	Little Valley #1	4-5-60			8-24-60	

TOOL JOINTS SIZE & TYPE OD | DRILL COLLARS NO. OD ID | PUMP NO. 1 | PUMP NO. 2

DIVISION | SALESMAN

NO.	SIZE	MAKE	TYPE	JET	SERIAL	DEPTH OUT	FEET	HOURS	WT. 1000 LBS	RPM	TEST DEV.	PUMP PRES.	No. 1 SPM	No. 1 LINER	No. 2 SPM	No. 2 LINER	MUD WT.	MUD VIS.	REMARKS
18	8 3/4	DIA	Core			8454	15	6 3/4											
19		DIA	Core			8468													
		Reed	YHW			8480													
	8 3/4	HTC	W7R		78160														
					7816														
	8 3/4	HTC	W7R		75368														
		8-24-60	COMP.		8600	TD													

Log Tops Chinle 446, Moenkopi 1788, Cocomino 2632, Cutler 3343, Hermosa 2233, Paradox 3350, Paradox SALT 4216, Base Paradox SALT 5450, Miss 7548, Ouray 8090, Elbert 8250, McCracken 8386

DIAMOND CORE BIT RECORD

Core No.	From	To	Footage	Hours	Size	Make	Ser. No.
1	7200'	7230'	30'	14½	8 5/8"	D&S	C-16740
2	7625'	7674'	49'	49	8 5/8"	D&S	C-16740
3	7675'	7694'	19'	8½	8 11/16"	Christensen	C-1738
4	7701'	7760'	59'		8 11/16"	Christensen	C-1738
5	7760'	7790'	30'		8 11/16"	Christensen	C-1738
6	7839'	7849'	10'		8 11/16"	Christensen	C-1738
7	7863'	7865'	2'		8 11/16"	Christensen	C-1738
8	8016'	8051'	35'		8 11/16"	Christensen	C-1738
9	8130'	8136'	6'		8 5/8"	D&S	C-16740
10	8136'	8163½'	27½'		8 11/16"	Christensen	C-1738
11	8163½'	8175'	11½'		8 11/16"	Christensen	C-1738
12	8210'	8258'	48'		8 11/16"	Christensen	C-1738
13	8258'	8304'	46'		8 11/16"	Christensen	C-1738
14	8309'	8316'	7'		8 11/16"	Christensen	C-1738
15	8316'	8339'	23'		8 11/16"	Christensen	C-1738
16	8339'	8390'	51'		8 11/16"	Christensen	C-3550
17	8390'	8398½'	8½'		8 11/16"	Christensen	C-3550
18	8406'	8439'	33'		8 11/16"	Christensen	C-3550
19	8439'	8451'	12'		8 11/16"	Christensen	C-3550
20	8454'	8469'	15'		Core cut by Pure Oil Company		
21	8486'	8501'	14'		Core cut by Pure Oil Company		

FUTURE POSSIBLE PRODUCING INTERVALS

None.

SAMPLE DESCRIPTIONS

0-40	Ss, med g, sub ang, frosted, f-p cem, sl fri, wht-buff, few scat org gs.
40-60	Some lt red and finer g, SAA.
60-100	The f g rd is well cem, hd, f g.
100-140	SAA, incr in rd ss.
140-200	80% rd ss AA, 10% wht ss.
200-480	100% ss, lt org-rd, sub ang, well cem, sl fri.
	Chinle Sample Top 465
480-500	40% slst rd, 60% ss AA.
500-600	100% slst rd, (VPS 520-540).
600-660	100% slst rd brn.
	Shinarump Sample Top 640
660-680	Slst, gry to gry brn, sl sdy, fri pyr, some dk gry calc slst.
680-710	SAA, but blue-gry to lt gry some rd, slty ls, gry.
710-730	Slst, rd-gry to blue gry; 10% ls AA.
730-750	100% slst rd, tr ls AA, mica.
750-790	SAA, less ls.
790-820	Slst, 100%, dk rd-brn, v sl calc.
	Moenkopi Sample Top 795
820-860	SAA, non calc, sl hdr.
860-910	SAA, gry rd-brn, f.
910-1020	SAA, hdr, sl calc or lmy wht-gry, fri pyr.
1020-1050	SAA, dkr rd-brn, almost shly.
1050-1090	SAA, lt as before.
1090-1100	SAA, but v calc (10% ls).
1100-1110	SAA, but v dk rd brn, sl calc.
1110-1120	30% ls wht to gry, dns, 70% slst AA.
1120-1140	Slst AA, sl calc and sdy.
1140-1180	SAA, no sd, sl mica.
1180-1190	SAA, slty-v f g ss, calc.
1190-1240	Slst, sl mica, rd brn, sl calc and sl strk w/ls.
1240-1250	100% ss, f g, sub ang, v lt org.
	Coconino Sample Top 1245
1250-1270	50% ss, f g, sub ang, v lt to dk rd; 50% slst AA.

1270-1280	SAA f-m g ss about 80%.
1280-1300	SAA, 90% ss lt rd.
1300-1310	20% ss; 80% rd mica slst.
1310-1320	50% ss; 50% slst AA.
1320-1350	SAA but v mica and gyp dk rd.
1350-1360	SAA more sd less gyp and mica.
1360-1380	80% ss, rd-org, some dk g, sl calc, gyp, poor sort.

Cutler (Organ Rock) Sample Top 1360

1380-1390	SAA, few c g ang.
1390-1410	SAA, rd brn.
1410-1430	SAA, tr v mica dk gry slst, gyp.
1430-1440	SAA, lot gyp and mica, tr ls wht.
1440-1450	SAA, some mica, tr ls wht.
1450-1460	95% ss, wht-pk, f-v f g, 5% slst, tr gyp.
1460-1470	SAA, wht-lt rd.
1470-1520	50-50 ss and slst AA dk rd.
1520-1530	SAA, org c g.
1530-1540	SAA, org f g.
1540-1580	SAA, rd.
1580-1590	90% slst rd-brn; 10% ss AA.
1590-1600	50% slst rd-brn; 50% ss AA.
1600-1610	80% slst, rd brn; 20% ss.
1610-1620	SAA, slst to gry grn.
1620-1640	50-50 ss and slst, rd, v mica.
1640-1680	80% ss dk org, v f g, sl gyp; 20% slst.
1680-1750	SAA, lt org.
1750-1840	SAA, org-rd.
1840-1850	SAA except v c, ang. v mica (xanth.) sl gyp.
1860-1920	SAA, org, f g.
1920-1930	SAA, lt org w/lot of wht g.
1930-1950	40% ls gry dns; 40% ss; 20% slst.
1950-1960	SAA, ls dkr.
1960-1970	90% ss org; 10% slst; tr pyr.
1970-2000	SAA, tr ls; lt org.
2000-2010	SAA, dk rd.
2010-2020	SAA, f g, lt org, v gyp.
2020-2100	SAA, sl gyp and mica.
2100-2140	SAA, org-rd.
2140-2150	100% ss, dk org.
2150-2260	NR
2260-2270	90% slst, rd brn-grn m'fl; 10% ls, gry grn blue.
2270-2330	NR
2330-2340	100% slst, rd, mica, tr pyr, ls wht.
2340-2350	50% slst; 50% ss, r-sub r, rd, fair sorting.
2350-2390	90% slst; 10% ls vcl; tr ss.
2390-2400	100% ss, org-rd, some wht, sub ang-ang, f sorting.

2400-2410	SAA, tr mica.
2410-2420	90% AA, 10% slst.
2420-2440	Slst vcl, vps.
2440-2480	Slst, dk gry, sl sdy and calc, some mica.
2480-2520	Vcl slst, tr ls.
2520-2530	SAA, tr ss.
2530-2540	SAA, tr ss.
2540-2550	SAA, tr ls.
2550-2570	SAA, v mica.
2570-2580	SAA, tr ls, loose sd g.
2580-2600	SAA, tr cht.
2600-2610	Vcl slst brn rd-mott, tr ls wht.
2610-2630	SAA, tr pyr.
2630-2660	SAA, tr cht (VPS 2650-2660).
2660-2680	SAA, tr cht.
2680-2710	SAA, no cht.
2710-2740	SAA, tr cht, brn.

Upper Hermosa Sample Top 2733

2740-2750	10% ss wht f g; 90% slst AA, tr ls.
2750-2760	SAA, more ls brn gry.
2760-2800	SAA, tr pyr.
2800-2830	Slst, vcl, sl lmy, VPS.
2830-2860	80% ls wht, sdy-slty, some dns, 20% slst.
2860-2900	SAA, ls dkr, not as sdy.
2900-2910	50-50 ls and slst AA.
2910-2940	100% ls wht-blk, dns-s g, blk ss slty and mica, tr pyr.
2940-2970	SAA, v mica, sl dy and mostly dk, some v gran.
2970-3010	SAA, less gran, dk gry brn.
3010-3040	SAA, more lt mtx (lot of motld slst up hole).
3040-3050	SAA, VPS.
3050-3080	Missing.
3080-3100	LS AA and wht ckhy cem mtx/gils.
3100-3130	Ls, wht to tan, dns.
3130-3140	VPS
3140-3150	SAA, but lot dk mica ls.
3150-3200	SAA, some brn and gran.
3200-3230	Ls, dk gry, slty, mica, sl gran-xln, some dns.
3230-3240	Ls AA but ltr and dns.
3240-3260	Ls, lt gry, dns, tr mica.
3260-3280	SAA, dkr.
3280-3300	SAA, tr cht brn.
3300-3360	60% ls AA; 40% ss v lmy, mica vcl (VPS 3310-3360).
3360-3400	SAA, cleaner tr cht.
3400-3440	SAA, mostly dk ls, tr cht wht-tan, less ss 20% (VPS 3410-3440).
3440-3450	90% ls tan-dk gry, dns-sl gran, 10% ss AA.
3450-3500	100% ls AA, tr cht.

3500-3520	SAA, 10% ss, limy, mica.
3520-3540	SAA, no ss.
3540-3550	SAA, tr ss and cht.
3550-3560	Either chky ls or cem mtx, VPS.
3560-3570	Missing.
3570-3580	VPS, everything.
3580-3590	Missing.
3590-3600	VPS.
3600-3660	Missing.
3660-3670	VPS, cem mtx.
3670-3680	Ls, dk, dns, lot cht tan, brn.
3680-3690	SAA, 10% cht, dk mang nod.
3690-3700	Lot of slst is smpl, VP, prob AA.
3700-3730	SAA, pur sh slst, VPS.
3730-3740	SS 50%, lmy, sl mica wht, 50% ls, dns-gran tan, tr gyp.
3740-3770	SAA, more dns ls.
3770-3780	NR
3780-3960	LS, ss, slst, sh, VPS.
3960-4014	Ls, ten-dk gry, dens, sl sdy ls and cht, 25%, tan, tr mica.
4014-4031	SAA.
4031-4040	NR
4040-4050	SAA, less cht, tr pyr.
4050-4070	NR
4070-4100	Ls, dns-sdy, lt gry and tan-dk gry, some gran, sl tr rd, tr cht.
4100-4140	NR
4140-4150	Ls AA, not as sdy, sl xln, tr pyr, tr cky ls, some cht.
4150-4160	SAA, no shows or porosity.
4160-4170	SAA.
4170-4380	NR

Paradox Salt (Log Top) 4216

4380-4390	95% sh, blk, sl calc, mica, some dk gry; ls 5% wht-gry, brn, mica, sl gran, tr gyp, arag, anhy.
4390-4410	40% ls, v gran, looks well cem, prob f p&p, some gd, lt gry-sl grn cast; 40% dolo, sl anhy, xln-dns, tr xln anhy, 10% sh AA.
4410-4420	NS.
4420-4430	40% ls AA; 40% anhy wht; 20% sh blk AA.
4430-4440	50% ls AA; 30% anhy sl dolo; 20% sh blk AA.
4440-4450	30% ls AA; 50% anhy sl dolo; 20% sh blk AA.
4450-4490	Salt 100%, tr sh.
4490-4510	SAA, tr dolo, brn dns.
4510-4530	75% ls, dolo, buff, v f gran, 25% anhy.
4530-4540	30% salt; ls and anhy AA.
4540-4550	80% sh blk AA; 15% ls, dolo, tan, v f gran 5% anhy.
4550-4580	SAA, (10% cement).
4580-4590	50% ls AA; 50% sh AA; tr c grn ss.
4590-4620	Salt.

4620-4630	60% ls AA, vug; 10% dolo anhy xln; 30% sh.
4630-4640	90% ls AA, vug; 10% dolo anhy xln; tr sh.
4640-4650	SAA, some rexlg of salts (?) poss dead oil stain, no fluor.
4650-4660	60% ls AA; 20% dolo; 20% anhy; poss dead oil stain, no fluor, no cut.
4660-4760	Salt.
4760-4770	Salt, tr blk sh.
4770-4780	Salt, tr blk sh; tr dolo, suc, tan, no show.
4780-4790	90% dolo, suc, sl mica, no show; 10% anhy.
4790-4800	SAA, dolo fairly soft.
4800-4820	25% ls, buff, vug, no show; 50% dolo; 25% anhy.
4820-4830	75% anhy; 25% dolo; tr ls.
4830-4910	Salt.
4910-4930	Salt, occ g of sylv.
4930-4940	Salt, some org colored, fe.
4940-4980	Salt, lot org colored, tr sh and dolo.
4980-4990	Salt, not as org.
4990-5030	Salt, break in flakes instead of gs.
5030-5070	SAA, gran again.
5070-5090	SAA, tr sh.
5090-5100	90% salt; 5% sh; 5% dolo brn, no shows, v f g-dns.
5100-5110	SAA, tr anhy.
5110-5180	Salt.
5180-5190	20% dolo AA; 80% salt; tr anhy, sh.
5190-5200	Salt.
5200-5210	40% dolo AA; 60% salt.
5210-5260	Salt.
5260-5270	20% dolo shly; 80% salt.
5270-5280	20% dolo shly; 10% sh; 70% salt.
5280-5290	70% dolo some sl anhy; 10% anhy; 10% sh; 10% ls gran buff-tan; dk and vug, wht.
5290-5320	SAA, tr salt.
5320-5330	Salt, wht, tr blk sh.
5330-5420	Salt, sl org.
5420-5430	Salt, tr dolo tan.
5430-5440	80% dolo, sl motld tan and wht, some sl anhy, 10% anhy, wht; 10% ls wht g-cky; tr sh, tr vug por.
5440-5450	70% dolo AA; 5% anhy wht; 10% ls AA; 15% sh.
5450-5460	SAA, incr in anhy.
5460-5470	90% salt; 10% dolo.
5470-5590	Salt.
5590-5600	10% salt; 60% dolo; 10% any; 20% sh.
5600-5610	70% dolo; 10% ls; 10% anhy; 10% sh, tr salt.
5610-5620	50% dolo; 10% ls; 10% anhy; 30% salt, tr sh.
5620-5630	60% salt; 40% dolo, tr anhy, sh.
5630-5640	60% sh blk; 10% salt; 30% dolo, anhy, dns-gran, sl vug.
5640-5680	Salt.
5680-5690	70% dolo, sl anhy, 10% sh, 10% salt; 10% anhy.
5690-5700	80% salt; 10% sh.
5700-5720	SAA, some anhy, dolo.

5720-5730	Salt.
5730-5750	Salt, sl org.
5750-5880	Salt.
5880-5890	100% sh, blk.
5890-5900	80% sh, blk; 20% salt.
5900-5910	80% salt, 20% sh.
5910-5960	Salt.
5960-5970	Salt, tr sh and anhy dolo.
5970-5980	80% sh; 20% salt, tr anhy.
5980-6020	Salt, tr sh.
6020-6030	95% sh, blk; 5% anhy dolo, no shows, tr pyr, salt.
6030-6050	70% sh, blk; 10% anhy dolo, no shows; 20% salt, tr pyr.
6050-6060	70% salt, 30% sh; tr dolo pyr, ? fluor on salt.
6060-6070	Salt, sl fluor, NC.
6070-6080	Salt, tr sh, 20% blk sh.
6080-6100	Salt, tr sh, no shows; sl fluor in salt, NC.
6100-6110	Salt, stn on salt will not fluor or cut (fe stn).
6110-6120	Salt, (some sylvite) poss d o on salt, clear salt has tr fluor, NC.
6120-6160	Salt, cloudy salt, no fluor, clear salt has tr fluor, NC.
6160-6180	SAA, but fluor v faint.
6180-6190	Salt, 30% sh w/tr sh and anhy, fluor, NC, tr pyr, some pk salt, tr dolo, fluor, NC.
6190-6200	SAA, tr gran salt, no fluor, NC.

(At 6075 circulated because oil showed on tank 1 hour and 20 minutes after trip. Samples to 6200 are not contaminated by oil shows or were flushed clean by salt water.)

6200-6210	Salt, sm gran sl dolo anhy salt, f por, sl fluor, NC.
6210-6220	Salt, 20% gran, 80% flakes.
6220-6230	Salt, tr blk sh w/d o .
6230-6270	Salt, 20% blk sh, 80% salt, some gran; looks stnd but no fluor or cut.
6270-6280	Salt, v faint fluor.
6280-6430	Salt, v faint fluor.
6430-6440	Salt, all flakes and chunks, v faint fluor.
6440-6450	Salt, all flakes and chunks, tr d o (?) and fe stn.
6450-6460	Salt, 50% gran, no fluor.
6460-6470	Salt, tr sh, looks like d o, no cut or fluor.
6470-6490	Salt, 50% gran salt, tr d o, no cut or fluor.
6490-6500	Salt, all flakes, v faint fluor.
6500-6560	Salt.
6560-6570	Salt, tr fluor.
6570-6590	Salt, non fluor.
6590-6600	Salt, tr fluor.
6600-6610	Salt, less fluor (30-40%).
6610-6620	Salt, fluor, lt stn, NC.
6620-6660	Salt, tr fluor, tr lt stn, NC.
6660-6700	SAA, w/v gd cut.
6700-6710	SAA, all chips, no gran salt.

6710-6730	SAA, tr d o stn; v lt fluor, sl cut on clear salt.
6730-6770	SAA, less fluor.
6770-6780	SAA, tr blk sh. Salt w/gd fluor flakes-m g xln-dns; tr ls, dns dk brn, f-p fluor and cut; tr sh blk, anhy (after washing salt out, no fluor).
6780-6790	30% sh blk sl calc (?) fluor and cut; 70% salt, dns, sm gran AA, gd stn fluor and cut; tr anhy, ls, and dolo; lot rexl salt.
6790-6800	90% salt mostly m g xln sl vug, sm por, gd fluor, f cut; 10% sh blk, sl calc in part; tr brn ls, dns-anhy.
6800-6810	60% sl dolo salt w/tr anhy (?) sm xln por few vugs, gd stn, cut and fluor; 20% sh blk; tr ls AA, stn.
6810-6820	70% v sl dol salt AA, gd cut; 20% lg clear salt; 10% sh, tr anhy.
6820-6830	90% v sl dol salt AA, tr ls dns, brn, no shows on ls.
6830-6840	Salt, sm gran AA, mostly flakes and chunks; v lt stn, f fluor on clear, gd on cloudy grans, f-g cut, tr anhy and dolo and ls w/fair fluor and cut.
6840-6860	Salt, v gd stn globu.
6860-6890	Salt, gd stain and fluor, less cut.
6890-6970	Salt, gd stain, fluor and cut.
6970-6980	25% ls, tan dns, tr gran wht, 10% dolo, nod dk brn; 50% sh blk and red; 10% slst; tr rd ss c g; 5% anhy.
6980-6983	60% ls tan-dk gry-brn, dns-sl gran, 5% dolo lt gry, some anhy dk gry gran; 20% sh blk and rd; tr anhy; tr ss c g, rd, loose sd grns, 5% slst rd; tr blk sh mott calc or dolo.
6983-7010	Missing.
7010-7020	20% ls AA; 10% dolo AA; 10% anhy wht; 40% sh AA; 20% slst rd sl mica; tr pyr loose sd grns.
7020-7030	60% ls AA, sm dk brn; 10% dolo sm anhy or slty; 30% sh and slst blk and rd; tr pyr, v gran ls, vcl.
7030-7040	SAA, sm ls v c xln dk brn, sh v carb.
7040-7050	50% ls AA, mostly dns and tan-lt gry; 10% dolo AA; 30% sh and slst; tr lse sd g pyr; 10% anhy.
7050-7060	SAA, tr wht cht.
7060-7070	SAA, tr brn gry cht.
7070-7080	50% salt; 10% ls AA; 5% dolo; 5% anhy; 25% sh; 5% rd slst.
7080-7090	60% ls, dns-sl gran, sm sdy; 20% dolo dk brn nod-lt gry, no show, no p&p; 20% sh blk rd, tr xln ls, anhy, lot cht wht-brn, rd ss c g.
7090-7100	60% ls AA, mostly dns and sdy; 10% anhy cht; 30% sh, tr pyr, lot chky dolo (?) tr xln por (?).
7100-7110	70% ls AA; 10% anhy; 20% sh tr pyr, lot chky dolo (?) tr xln por (?), tr dolo.
7110-7120	10% dolo, lt gry; 20% anhy, wht mott; 50% ls AA, some xln; 10% sh AA, tr salt.
7120-7130	SAA, little more salt.
7130-7140	50% ls dns-xln, tan-brn; 10% dolo gran brn, lt gry; 10% anhy; 30% sh blk; tr pyr.
7140-7150	SAA, tr cht.
7150-7160	SAA, tr gran mica ls, tr cht.

7160-7165	(Circulating) 50% ls tan-brn, dns-g; 10% dolo lt gry; 5% anhy; 200% slst lt gry, rd, gry, pur, org; 15% sh blk.
7165-7176	20% ls AA; 40% sh blk; 20% slst AA; 15% dolo lt gry; anhy 5%.
7176-7185	60% salt; 10% ls AA; 10% sh blk; 20% slst vcl; tr anhy.
7185-7190	90% salt; 5% sh and slst; 5% ls AA.
7190-7195	(Circulating) 50% salt; 30% sh blk; 10% dolo; 10% ls AA; tr slst anhy. And, 70% salt; 20% anhy salt; 10% sh blk; tr ls.
7195-7200	95% salt; 5% sh blk; tr ls.
7200-7201	Core #1 - Salt, sm dk strks and occ random frac 6-8" apart.
7201-7211	SAA, dk strks are h salt.
7211-7212	Mostly dk salt.
7212-7213	Salt.
7213-7214	45% frac or xln plane.
7214-7215	Salt.
7215-7217	Almost all dk salt.
7217-7218	17.5-18% dk salt.
7218-7219	Salt.
7219-7220	Salt.
7220-7221	Salt.
7221-7223	Dk salt.
7223-7227	Dk salt.
7227-7230	50-50% dk and clear salt.
7230-7235	60% salt; 20% sh blk; 10% ls slty gry; 10% dolo dk brn; tr rd slst.
7235-7240	75% salt; 5% dolo, dk brn, sl gran; 10% ls v slty lt gry; 10% sh blk; tr rd slst.
7240-7245	30% salt; 30% ls v slty gry-dk gry; 5% ls dk brn, sl gran; 30% sh blk, carb; 5% anhy.
7245-7250	30% salt; 30% ls, slty, gry-gry brn, gd por in part, 5% anhy; 30% sh blk calc in part, 5% slst vcl.
7250-7255	60% salt; 20% sh blk calc; 10% ls v slty lt gry; 5% anhy, tr bent.
7255-7265	90% salt; 5% sh blk calc in part; 5% ls, slty lt gry; tr slst anhy.
7265-7270	20% salt; 40% bent wht; 30% ls v slty gry-brn, some por; 10% sh blk; tr anhy and slst rd.
7270-7275	50% bent wht-dk gry; 10% sh blk, 20% ls v slty; 10% salt; 10% anhy.
7275-7280	40% bent dk gry, sm wht; 30% sh blk calc; 10% ls v slty; 10% anhy.
7280-7285	75% bent wht-gry; 10% ls v slty brn-gry; 10% sh blk calc; 5% anhy.
7285-7295	SAA.
7295-7300	35% bent wht-gry; 25% sh blk calc, 15% v slty ls gry; 10% ls dk brn, dns-gran sl slty; 15% salt; tr anhy and dolo, ls crm dns.
7300-7310	20% bent; 20% sh blk sl calc; 30% slst brn sl calc; 5% ls gry sl por; 25% salt w/tr pyr w/ln; tr ls, dns dk brn, slst, rd and org.
7310-7311	(Circulating) 50% salt; 20% bent; 25% sh blk; 10% ls v slty gry; tr crm buff ls dns-sl chky; vcl slst, sm dk brn ls, sl dns, no foss.
7311-7320	50% bent wht gry; 30% salt; 10% blk sh; 5% slst brn pyr; 5% ls v slty; tr ls crm.
7320-7335	90% salt; 5% sh; 5% ls v slty.
7335-7340	50% bent; 40% salt; 5% sh; 5% ls v slty.
7340-7345	25% bent; 70% salt; 5% sh; 5% ls v slty.

7345-7350	80% sh blk; 15% bent; 5% ls slty, tr anhy.
7350-7355	60% salt; 25% sh blk; 5% ls v slty; tr crs sd g. ls brn dns, 10% bent wht.
7355-7370	75% salt; 10% sh blk; 5% calc; 5% ls dk brn dns-lt gry v slty; 10% bent wht; tr pyr, slst rd, anhy.
7370-7375	80% salt; 15% sh; 5% ls.
7375-7385	100% salt; tr blk sh.
7385-7390	SAA, w/tr ls f-gd fluor, ? cut.
7390-7400	SAA.
7400-7415	75% salt; 20% bent wht-gry; 5% sh blk; tr ls AA.
7415-7420	90% salt; 5% sh blk; 5% ls brn-gry.
7420-7425	25% salt; 20% sh blk; 30% bent; 20% ls v slty, tr anhy, brn slst.
7425-7430	40% bent, gry-wht; 20% sh blk; 30% ls v slty; 10% salt; tr dolo tan anhy; anhy wht.
7430-7435	90% salt; 10% sh blk, tr ls slty.
7435-7440	75% bent; 15% sh blk; 10% ls v slty; tr cm ls anhy dolo, salt.
7440-7450	80% bent; 10% sh; 10% ls slty; tr AA.
7450-7475	70% bent; 10% salt; 10% sh blk; 10% ls slty gry-brn to dns, tr AA.
7475-7480	80% bent gry, sm wht; 10% sh blk; 10% ls, slty gry, dns-sl gran, dk brn; try anhy.
7480-7485	25% salt; 40% bent; 20% ls v slty gry; 15% sh blk.

<u>Lower Hermosa Sample Top</u> 7450

7485-7490	10% salt; 40% bent, 30% sh blk sl calc; 10% slst brn.
7490-7495	90% dolo gry-dk gry mostly gran, sm dns, sm sl anhy; 10% sh blk; tr ls slty gry, anhy, bent gry, red slst.
7495-7500	40% bent gry-wht; 30% sh blk sl calc; 30% dolo tan-brn, sl anhy; tr ls v slty, anhy, salt, brn slst.
7500-7505	30% bent; 30% sh blk sl calc; 30% dolo AA; 10% ls v slty; try anhy.
7505-7510	80% salt; 10% sh blk; 10% bent; tr dolo anhy.
7510-7515	20% salt; 30% bent; 40% sh blk; 10% ls v slty.
7515-7520	60% bent; 15% salt; 20% sh blk; 5% dolo gran brn.
7520-7525	50% bent; 20% sh blk; 10% dolo dns-gran brn; 20% slst brn; tr anhy, slty ls.
7525-7530	95% dolo, lt-dk gry, gran, sm dns brn, sl slty and mica, no por; 5% sh blk; tr anhy brn, slst, red slst, bent slty ls.
7530-7535	SAA, tr crm sug ls, sm brn ls looks just like dolo.
7535-7545	80% bent; 5% salt; 10% dolo sl anhy, brn, gran; 5% sh blk.
7545-7550	20% bent; 60% dolo gran-dns, lot of dk nod dolo, sm tan ls dns; 10% slst brn; 10% sh; tr anhy, slty anhy ls w/vug, cht tan, pyr, salt, ly sh blk and wht.

<u>Mississippian Sample Top</u> 7548

7550-7555	20% bent; 30% ls crm buff dns-sl gran, sm chky; 40% cht tan wht; 10% sh, blk; tr dolo dns brn, anhy.

7555-7560	80% ls, dns tan, chky wht, gran buff-sl mott, sl xln-tan-brn; tr indist foss, no por or show; 15% cht tan fresh wht; 5% sh blk, sl calc, tr dolo dk brn nod-c g, ls v slty.
7560-7565	65% ls mostly chky wht, dns tan, 25% bent; 10% sh blk, tr salt, cht, slty ls, anhy, dolo gran dk brn.
7565-7570	75% ls chky-dns w/sharp edger, sm gran; 15% sh blk; 10% bent; tr wht cht and tan.
7570-7575	SAA, tr dolo anhy, fe stan on sm of chky ls, sl fluor and NC.
7575-7580	SAA, sm chky ls has blu-gran cast; tr v slty ls and sm anhy is f xln and slty.
7580-7585	70% ls, 50/50 chky-dns, sm gran tr blu-gry chky ls; 10% cht tan-wht; 20% sh blk sl calc, sm brn slst, tr anhy and bet (most bent washed out).
7585-7590	25% bent (washed out first); 30% sh blk; 70% ls mostly chky, sm dns; tr cht wht, brn dolo, gran waxy sh.
7590-7595	SAA, but ls less in %; most samples caving 3 cones off w/in last 5'.
7595-7600	70% ls, tan dns-v sl xln w/tr of calcite filled fracs, no stain or fluor, tr styolites, sm chky wht ls, sm slty gry; 10% dolo v gran, brn sl anhy, nod dk brn; 15% sh blk, lot cht, brn-tan, tr loose sd g, blu sh, rd ss.
7600-7605	SAA, tr wht cht and xln calcite (many pieces have glossy sheen, is sunlight, one side).
7605-7610	80% ls mostly chky wht, rest dns tan; lot of v slty gry ls, soft, looks like stain in sunlight, ? fluor, NC; tr gran brn ls, xln, calcite, rd slst, cht tan-wht; 20% sh blk, sm min fluor on dns ls.
7610-7615	SAA, more cht (less sheen).
7615-7625	SAA, more cht (more sheen).
7625-7626	<u>Core #2</u> - Ls, dns w/occ f xln face, tan-gry, one fract, no oil, no por.
7626-7627	Ls, dns-med xln, sm v c xln, tan, foss 1 brach, large blu gry sh inclusion.
7627-7628	Ls, dns-med xln, tan, one ¼" solid calc filled fract, styol, surf, dk grn-gry sh, no oil.
7628-7629	Ls, vdns, micro healed fract, dk gry-brn-gry, NS.
7629-7630	Ls, dns-c xln in part, tan-dk gry, slickenside, blu gry sh inclusion, no oil, 1 frac.
7630-7631	Ls AA, 1 frac w/ xln calc on face 1/8" - 1/4" tk bleeding oil start of single 4' frac; styol not bleeding oil.
7631-7632	Ls AA, 1 frac filled w/blu gry sh, 2% h ln.
7632-7633	SAA, tr h ln frac and isol ppt por w/in smpl.
7633-7634	Ls AA, 1 frac w/lost circ, 2% frac, bleeding oil on all fracs.
7634-7635	Ls, f xln w/specks of blk sh, 10% small vugs, tan-dk gry, bleeding oil, foss, 5% fract and small vugs.
7635-7636	Ls, dns-f xln V 2-5% frac bleeding oil; small vugs; tan-gry.
7636-7637	SAA, some frac open knife blade tk.
7637-7638	Ls, v c xln, tan, 2% frac, occ vug tooth pick, in size, bleeding oil.
7638-7640	SAA, w/styol, no bleeding oil, occ vug tooth pick size bleeding oil.
7640-7641	Ls, c xln, lot of blk calc mat incl tr small vugs, scat fluor, 2% frac occ vug.
7641-7642	SAA, w/blu gry sh scat w/in, 2-5% frac, scat vug up to match head size.
7642-7643	Ls, dns, tan, lot of blu-gry and blk calc mat thruout; 5% frac occ vug.

7643-7644	Ls AA, v gd series of parallel fracs ½" tk scat match head vugs, foss; bleeding oil; 5% frac.
7644-7645	SAA, sm vugs ¼-½".
7645-7647	SAA, but fewer frac 20%, vugs smaller.
7647-7648	Ls, v dns-sl xln, dk gry 20%, frac.
7648-7649	Ls, v dns, dk gry, blk calc mat, sl fluor, 2% frac.
7649-7650	SAA, but occ frac.
7650-7651	Ls, dns, tan, tr pyr, sm blk calc inclus, no frac.
7651-7653	SAA, sm blu gry sh inclus, no frac.
7653-7654	SAA, sh slicken sided, no frac.
7654-7656	SAA, but cglic in part, no frac.
7656-7657	SAA, but few healed h ln calc frac, no oil.
7657-7658	SAA, but few healed h ln calc frac, sm blu gry sh inclus, sl bleeding oil.
7658-7659	SAA, but few healed h ln calc frac, sm blu gry sh inclus, sl bleeding oil.
7659-7660	SAA, but few healed h ln calc frac, sm blu gry sh inclus, sl fossif.
7660-7662	SAA, sl more frac but sh filled.
7662-7663	Ls, v c xln, tan, v foss, 2-3 frac, scat bleeding oil.
7663-7664	SAA, but 2-5 frac.
7664-7665	SAA, but 2-5 frac, sm seat vugs tooth pick size.
7665-7667	Ls, AA, v badly broken, frac 5-10.
7667-7670	Ls, c xln, tan styol and frac 5%; styol 8-12" apart.
7670-7671	Ls v dns, gry pyr, 2-5 frac.
7671-7672	Ls, dns-c xln, tan, 2-5 frac.
7672-7675	NR.
7675-7676	Core #3 - Ls, m-c xln, tan-gry, no por.
7676-7678	Ls, c xln-gran, grans are dns, tr sh inclus.
7678-7679	SAA, less sh inclus.
7679-7681	Ls, c xln-gran, grans are dns, tr sh inclus.
7681-7682	SAA, but mostly xln, v c.
7682-7683	Ls, m-c xln, tan, tr sh inclus.
7683-7684	Ls, m xln, gry, lot of sh inclus.
7684-7685	SAA, but w/"viens" of dns ls.
7685-7686	Ls, gran-sl xln, ool (?), sm ppt por, foss imprint, fluor is fair on non-frac.
7686-7687	Ls dns-c xln, tr ppt por.
7687-7688	SAA, w/few gd vugs, f fluor on fresh surf.
7688-7689	SAA, but no por.
7689-7690	Ls c xln-sl dns l/pt, tan, no por.
7690-7691	SAA, but tr vug por.
7691-7692	Ls c xln-sl dns l/pt, tan, no por.
7692-7693	Ls, m xln, lot of sh inclus, f vug por.
7693-7694	Ls, dns-sl v f xln, tr por (one v gd vug), tan, no fluor.
7694-7701	NR.
7701-7705	Core #4 - Ls, dns-f xln, tan, foss, no por.
7705-7706	Dolo, dns, dk gry, sl frac, anhy inclus.

7706-7709	Dolo, dns-v f xln, tr h ln frac and ppt por.
7709-7711	Ls, dns-m xln, sm c indiv xls, tr sh inclus.
7711-7712	SAA, more sh inclus.
7712-7719.5	SAA, no sh, tan-dk gry.
7719.5-7722.5	Dolo, dns-v f xln, dk gry brn-blk, tr vug por, sm gd, no fluor.
7722.5-7727	Ls, dns-c xln, sl frac, styol, sm gd vug por.
7727-7729	Dolo, dns-sl gran, brn-blk, tr cem frac.
7729-7732	SAA, lighter, tr por.
7732-7733	Dolo, dns-sl xln, tr por, tan-gry, tr anhy inclus.
7733-7734	Dolo, dns-v g xln, gd vug por thruout, xln lined, tr frac, foss, gry-blk, tr anhy inclus, wet, no fluor.
7734-7740	SAA, sm carb mat in vugs.
7740-7741	SAA, less por.
7741-7748	SAA, gd por.
7748-7750.5	SAA, but only tr por.
7750.5-7757	Ls, dns-c xln, tan, no por.
7757-7759	SAA, but v c xln, more frac.
7759-7760	NR.
7760-7765	Core #5 - Ls, dns-v c xln, tan, no por.
7765-7768.5	SAA, foss cast.
7768.5-7770	Dolo, dns-v f xln, tan-gry, f-gd vug por.
7770-7778	Ls AA.
7778-7779	SAA, but more dns.
7779-7784	SAA, c xln.
7784-7789	Dolo AA, gry brn-blk, sm v gd vug por.
7789-7795	10% dolo AA, 70% ls dns tan; 20% slty ls, tr anhy.
7795-7800	NR.
7800-7839	SAA, tr rd slst, ls dns-gran.
7839-7840	Core #6 - Dolo, dns, dk gry-blk, no por.
7840-7841	Dolo, dns-c xln, gry-blk, tr vug por.
7841-7849	Dolo, m-c xln, wht-lt gry, gd por at top, excellent 1/pt thruout 41.5, 43, 45, 46.5 to 49, no frac.
7849-7863	NS.
7863-7865	Core #7 - Dolo, dns-sl xln, v gd vug por at top, f-gd at bottom, tr cem frac, dk gry, wet.
7865-7866	NR.
7866-7870	40% dolo, wht, m-c xln, gry, grn, 20% vug-pp por; 10% anhy; 10% ls, wht cky; 20% sh, gry-grn-blk; tr cht.
7870-7875	50% dolo, SAA; 20% sh, SAA; 10% anhy, SAA, 10% ls, SAA; 10% cht, pk-wht.
7875-7880	60% dolo, SAA and brn, f g, w/tr stn; 20% sh, SAA; 10% ls, SAA; 10% cht, SAA.
7880-7885	70% dolo, brn, dns, chty, por reduced to 10%; 20% sh, SAA; 10% cht, SAA.
7885-7890	80% dolo, brn-gry, dns-f g, 20% por; 10% sh, SAA; 10% cht, SAA.
7890-7895	70% dolo, brn, dns-f g, 10% por; 10% sh, SAA; 20% salt.
7895-7900	80% dolo, brn-gry, chty-f g, 10% por; 10% sh, SAA; 10% cht, SAA.
7900-7905	80% dolo, brn-gry, chty-f g, tr por; 10% sh, SAA; 10% cht, SAA; tr anhy.

7905-7910	80% dolo, brn-gry, chty, wht c xln, 30% por; 10% sh, SAA; 10% cht, SAA; tr anhy.
7910-7915	80% dolo, SAA, 10% por; 10% sh, SAA; 10% cht, SAA; tr anhy.
7915-7920	70% dolo, SAA, 10% por; 10% ls, brn, oolitic, m xln; 10% sh, SAA; 10% cht, SAA.
7920-7925	80% dolo, SAA, 10% por; 10% ls, SAA; 10% sh, SAA; tr cht.
7925-7930	80% dolo, SAA, 20% por; 10% ls, SAA; 10% sh, SAA; tr cht.
7930-7935	70% dolo, SAA, 10% por; 20% ls, brn, m xln, wht chky; 10% sh, SAA.
7935-7940	80% dolo, brn, dns-f xln, wht; 10% sh, blk-gry; 10% cht, wht, tripo; tr ls, brn, dns; tr sd, c g, red, shy, mat.
7940-7945	60% dolo, SAA, 10% por vug; 20% ls, tan, dns-foss; 10% sh, SAA; 10% cht, SAA.
7945-7950	70% dolo, brn, chty, wht, c xln, tr por; 20% ls, wht, chky, brn, dns; 10% sh; tr sd, c g, red, shy mat.
7950-7955	70% dolo, SAA, 10% por; 10% ls, SAA; 10% sd, c-m g, clear red; 10% cht, trip, Clear.
7955-7960	50% dolo, brn-wht, SAA; 10% ls, SAA; 20% sh; 20% cht, vcl, tr f sd and anhy.
7960-7970	70% dolo, wht, c xln, gry-brn; 10% ls, wht, chky; 10% sh, gry-blk; 10% cht, vcl, tripo.
7970-7980	10% vug por; SAA, chty dolo; tr clear, well round sd.
7980-7985	80% dolo, wht-gry, m-c xln, brn, f g, 10% vug por; 10% sh, blk, tr sdy sh; 10% cht, clear, pk.
7985-7990	70% dolo, wht-gry-tan, m-c xln, blk residue on dolo, dead oil (?); 10% ls, tan, dns, lith; 10% sh, blk; 10% cht, vcl; tr sd.
7990-8016	SAA.
8016-8020	<u>Core #8</u> - Sl lmy dolo, dk gry and brn, f-m xln w/scatt sm cht inclus; vert & horiz fracs w/few fracs filled w/blk residue.
8020-8033	Sl lmy dolo, lt gry-m gry, f-m xln w/few scatt gry sh strks; 2" of gry sh at 8029'; few scatt fracs and sm vug.
8033-8052	Sl lmy dolo, f xln-f gran, lt gry-wh; scatt fracs and gd vug por from 8048-8051'.
8052-8060	80% dolo, brn-wht, f xln-f gran, sm sdy dolo; 10% sh, blk and gry; 10% ls, brn, dns, tr clear qtz xl.
8060-8065	SAA, tr sd, litho-cht.
8065-8070	60% dolo, SAA; 30% ls, wht, chky-tan dns; 10% sh, SAA.
8070-8075	60% dolo, brn-wht, f-m xln and f gran; 30% ls, wht chky, tan dns; 10% sh, blk.
8075-8080	SAA, dolo sl lmy, tr f g sd.

<u>Sample Top Ouray</u> 8080

8080-8085	60% dolo, SAA; 40% ls, SAA.
8085-8090	60% dolo, SAA; 40% ls, SAA/-tr anhy, tr sol.
8090-8095	50% dolo, SAA; 50% ls, SAA.
8095-8100	70% dolo, SAA; 30% ls, SAA.
8100-8105	70% dolo, brn, f gran lmy; 30% ls, SAA.
8105-8110	80% dolo, SAA; 20% ls, SAA; tr f g lmy sd.
8110-8115	40% dolo, SAA; 60% ls, buff-f gran, foss-dolomitic.

8115-8120	Dolo 70%, SAA; 20% ls, wht, chky, lt tan-dns; 10% sh, blk.
8120-8125	50% dolo, SAA; 20% ls, SAA; sh gry-grn-v lmy, tr f g sd, tr cht.
8125-8130	40% dolo, SAA; 40% ls, lt tan, suc, foss, gry-shy; 20% sh, SAA.
8130-8136	Core #9 - V dns-f g dolo, brn sl lmy, scat gry sh ptg of blu-grn tint; few horiz frac w/slty taste.
8136-8163	Core #10 - Dolo, sl lmy, f-m xln, dns silic, sl foss w/scatt blu-grn sh ptg; few scatt horiz fracs.
8163-8164	Core #11 - Ls, sl dns-f xln, tan-gry.
8164-8165	SAA.
8165-8172	SAA, w/blk sh ptg.
8172-8175	SAA, sl csr g, foss imprt.
8175-8185	50% ls, dns-m and sm gran xln tan; 40% dolo, dns-v xln, tr por, brn-tan; 10% sh, blu blk; tr cht and anhy.
8185-8195	90% dolo, dns-c xln, buff-gry; 10% ls; tr sh.
8195-8210	SAA, more sh.
8210-8214	Core #12 - Dolo, dns-v f xln, dk gry-blk.
8214-8218	Dolo, dns-v f xln, lt gry-dk gry, calc inclus.
8218-8223	SAA, w/blk sh ptg.
8223-8227	SAA, w/calc and anhy inclus.
8227-8230	SAA, w/blu sh ptg.
8230-8234	SAA, w/blu sh ptg and tr anhy.
8234-8236	SAA, w/blue sh ptg and try anhy, tr h ln fract.
8236-8237	Ls, dns, brn irreg frac.
8237-8239	Dolo, dns-v f xln, dk gry-blk, fract cem w/anhy.
8239-8241	Dolo, dns-v f xln, lt gry, blu sh ptg, tr pyr.
8241-8242	Dolo, dns, brn gry, tr h ln frac.
8242-8243	Sh, blue grn, sl calc.
8243-8244	SAA, but dk grn-blk.
8244-8245	Dolo, dns-v f xln, dk gry-blk, blu grn cast.
8245-8246	Ls, dns-suc (micro xln) grn sh ptg, slicken.
8246-8248	SAA, but dkr.
8248-8250	SAA, but dns dk gry.

Elbert Sample Top 8250

8250-8251	Ls, dns dk gry grn and tr blk sh ptg.
8251-8254	Dolo, f-m xln scatt blu sh inclus.
8254-8255	Dolo, m xln, well developed, gry, blu sh ptg.
8255-8256	SAA, mostly sh.
8256-8258	Dolo, dns-suc dk gry.
8258-8260	Core #13 - Dolo, dns, v shly, rd grn blu.
8260-8268	Dolo, v f xln, suc, tan sh ptg, styol.
8268-8270	SAA, v shly blu grn rd ptg.
8270-8272	SAA, sh slicken.
8272-8273	Dolo, w/less sh, dns tan-gry.
8273-8274	Dolo, v shly.
8274-8275	Dolo, dns-sl gran, dk gry, shly blu gry-blk.
8275-8281	Dolo, dns, dk gry, sh ptg, tr scatt sd grs.
8281-8286	Dolo, dns, tan-gry, v shly, ptg blu rd grn, slicken.

8286-8290	Dolo, dns-suc, tan-brn gry.
8290-8292	Dolo, dns, v shly, rd, grn blu, scatt c sd gs.
8292-8294	SAA, less shly.
8294-8295	SAA, but v shly and sl sdy.
8295-8297	Ss, m g, clear-wht, sub rd, p-f sorting, well cem, NS.
8297-8298	SAA, but f g, well sorted.
8298-8300	SAA, f-m g, sorting less cem.
8300-8301	SAA, tr xl overgrw.
8301-8302	SAA, m-c g, f-well sorted, sl fria, gd p&p, NS.
8302-8303	SAA, but f cem.
8303-8304	SAA, fria.
8304-8309	NR.
8309-8310	Core #14 - Ss, f-m g, f sorting, sub rnd-sub ang, little cem suf hd.
8310-8311	SAA, but m-c f por.
8311-8312	SAA, f-m.
8312-8313	SAA, f-m hd.
8313-8314	SAA, m-c, sl fria.
8314-8315	SAA, f-m hd.
8315-8316	SAA, f-m hd, sl fria, tr pyr (?).
8316-8317	Core #15 - Ss, m g, poorly sorted, well cem, sl fria, sub ang, wht, silic cem.
8317-8320	SAA, but wht-lt gry, hd.
8320-8321	SAA, v well cem but not as hd.
8321-8322	SAA, w/v thin stks of blu gry sh.
8322-8325	Dolo, dns, gry-brn; stks of v c ss, well rnd, well cem wht-gry at top.
8325-8328	Dolo, dns, gry-brn, thin blu gry sh ptg.
8328-8330	Dolo, suc-dns, brn, occ sh inclus.
8330-8332	Dolo, dns, brn-blu gry, h ln frac.
8332-8333	Dolo, suc-dns, brn, occ sh incl.
8333-8335	Dolo, dns, brn, occ ang sd g, c, clear-smoky.
8335-8337	Ss, m-c g, sub ang-sub rnd, well cem hd, sil, sl glauc, wht-gry, gran; stks of dns blu gry dolo.
8337-8339	Dolo, dns-v f xln, brn, sl anhy, few h ln fract.
8339-8340	Core #16 - Dolo, f formed xln, brn sl h ln frac.
8340-8341	Dolo, dns-v f xln, brn blu grn sh ptgs.
8341-8345	SAA, sh v sl dolomi.
8345-8347	Dolo, f formed xln.
8347-8348	Dolo, dns, brn, few blu grn sh ptgs.
8348-8350	Dolo, f formed xln.
8350-8355	Dolo, SAA, but w/anhy inclus.
8355-8358	Dolo, f xln, tan-brn, tr blu grn and rd sh, few scatt sdy stks, v c.
8358-8363	SAA, no sh, tr anhy inclus.
8363-8365	Dolo, v f xln, 3 in stks of v c poorly sorted ss, tr grn rd and grn dolo cem.
8365-8370	Dolo, f xln, brn, tr anhy.
8370-8375	Dolo, dns, tan-brn.
8375-8377	SAA, brn.
8377-8383	Dolo, dns, scat v c-m g ss, r-a, stk grn and rd sh.

8383-8385	Dolo, f-m xln, gry-rd and grn-gry.
8385-8390	Dolo, dns, tan, w/strks of grn and rd sh scatt, f-c sd g, r-a.
	McCracken Sample Top 8386 (Log Top)
8390-8393	Core #17 - Dolo, dns, gry rd, alter w/bands of f xln dolo gry-tan, few scatt sd gs, c, blu grn sh ptgs.
8393-8395	Dolo, dns-v g xln, gry-rd, few scatt, c sd gs.
8395-8396.8	Dolo, f xln, gry-rd-tan, grn sh scatt in thin strks, poss glauc.
8396.8-8406	NR.
8406-8407	Core #18 - Dolo, m-c xln, tan-pk, scatt sd gs, m-c, few strks of glauc ss.
8407-8411	Dolo, dns-f xln, pk, sl glauc, scatt sd gs, m-c g, clear-dk gry (10% sand).
8411-8419	SAA.
8419-8428	SAA, v little-no sd.
8428-8431	Ss, v dolo, tan-sl pk, sub ang-sub rnd, poor sorted, m-v c, scatt psb, strks of glauc.
8431-8432	SAA, but sdy dolo.
8432-8433	SAA, sl sdy dolo sprks of glauc.
8433-8436	Ss, f-m g, clear-wht and gry, a-r, f-well cem, v sl dolo, v glauc.
8436-8439	SAA, but f g well cem.
8439-8451	Core #19 - Dolo, dns-f xln, tan-pk, glauc strks.
8451-8454	NR.
8454-8469	Core #20 - Dol, rd brn, dns-f xln, no por, v glauc, v frac; ss, gry, f g, dol, sl glauc, vug, low por and perm, NS, v frac.
8469-8486	NR.
8486-8501	Core #21 - Ss, gry and grn, f g, dolo, v glauc, tite, NS, v frac; slst, v g, ss reworked w/lam dolo, tite, NS, vert fracs.
8501-8515	Ss, gry, v f-c g, clay filled, sl glauc, no por, uneven-pp fluor, no stn or odor.
8515-8520	Dolo, dk gry, dns-v f xln, slty, no por, no shows.
8520-8535	SAA, w/ss dk gry, f g, glauc, tite.
8535-8540	NS.
8540-8560	Dolo, AA.
8560-8565	Ss, lt gry, v f-f g, glauc, dolo, no por.
8565-8570	Dolo dk gry dns-f xln, slty glauc, no por, no shows w/ss AA.
8570-8600	Dolo AA, w/some ss AA.
	Cambrian Sample Top 8579
8600'	Total Depth

CORE DESCRIPTIONS

For Core Descriptions, See Sample Descriptions.

CA-20

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company MURPHY CORPORATION Formation MC CRACKEN File RP-3-1218
Well # 1 LITTLE VALLEY UNIT Core Type DIAMOND CONVENTIONAL Date Report 7/25/60
Field LITTLE VALLEY Drilling Fluid Analysts ENGLISH
County GRAND State UTAH Elev. 5936'KB Location SEC 29 T26S R20E

Lithological Abbreviations

SAND-SD, SHALE-SH, LIME-LM, DOLOMITE-DOL, CHERT-CH, GYPSUM-GYP, ANHYDRITE-ANHY, CONGLOMERATE-CONG, FOSSILIFEROUS-FOSS, SANDY-SDY, SHALY-SHY, LIMY-LMY, FINE-FN, MEDIUM-MED, COARSE-CSE, CRYSTALLINE-XLN, GRAIN-GRN, GRANULAR-GRNL, BROWN-BRN, GRAY-GY, VUGGY-VGY, FRACTURED-FRAC, LAMINATION-LAM, STYLOLITIC-STY, SLIGHTLY-SL/, VERY-V/, WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE: OIL	RESIDUAL SATURATION PER CENT PORE: TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
1	8295-96	0.04	3.2	0.0	65.6	Sandstone
2	8296-97	0.10	7.0	0.0	71.3	Sandstone
3	8297-98	0.13	8.4	0.0	71.4	Sandstone
4	8298-99	0.68	11.9	0.0	62.1	Sandstone
5	8299-8300	1.0	10.0	0.0	63.2	Sandstone
6	8301-02	0.06	6.9	0.0	44.9	Sandstone
7	8302-03	5.5	6.2	0.0	50.1	Sandstone
8	8303-04	1.6	6.9	0.0	71.2	Sandstone

SERVICE NO. 8 NO INTERPRETATION OF RESULTS

		MAX.	90°				
1	7638-39	0.4	0.2	1.8	15.1	69.7	Limestone
2	7643-44	0.4	0.2	1.9	8.6	81.8	Limestone
3	7648	1.4	0.8	6.8	25.3	24.2	Limestone
4	7664-65	68	<0.1	2.8	6.9	89.9	Limestone, Vertical Fracture.
5	7734-35	2.5	0.1	8.8	0.0	93.5	Limestone
6	7786-87	*0.8		11.3	1.6	83.7	Limestone, Vertical Fracture.
7	7847.5-48.5	24	1.7	15.9	2.1	84.3	Limestone, Dolomitic
8	7863-64.0	18	2.1	10.4	3.2	92.3	Limestone, Dolomitic

SERVICE NO. 8 - A NO INTERPRETATION OF RESULTS

* MATRIX PERMEABILITY

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

awp

MURPHY CORPORATION

EL DORADO, ARKANSAS

September 23, 1960

PLEASE REPLY TO OUR
DIVISION OFFICE

940 Petroleum Club Building
110 Sixteenth Street
Denver 2, Colorado

Oil & Gas Conservation Commission
State of Utah
Room 310 Newhouse Building
Salt Lake City, Utah
Attn: Mr. Feight

United States Geological Survey
457 Federal Building
Salt Lake City, Utah
Attn: Mr. Donald F. Russell

Gentlemen:

Attached are two corrected copies of the Well Log Data on our Little Valley Unit #1, Grand County, Utah.

Please discard Page 5 in the Well History Book and put this corrected copy in its place.

Yours very truly,

MURPHY CORPORATION

James M. Freeman
by rn

James M. Freeman
Division Production Clerk

JMF:rn
Attachments