Permit #: 20003

County: GENTRY

CONFIDENTIAL UNTIL:

Date Issued: 09-30-74

Date Cancelled:

Date Plugged: 11-20-74

OGC FORMS	Date Received
1	
2	
3	09-30-74
3i	
4	10-11-74
4i	
5	01-13-75
6	01-13-75
7	01-13-75
8	
11	
12	
Misc. Form 2	

	TYPE	ID #	Date Received
Logs			
Samples	chip		
	core		
Analyses	water		
	core		

Additional Submitted Data:

COMMENTS:

Stripped 10-27-81 da
MGS log # 27720

1

Form OGC - 3

MISSOURI OIL AND GAS COUNCIL

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL ☒ DEEPEN ☐ PLUG BACK ☐

NAME OF COMPANY OR OPERATOR The Anschutz Corporation DATE 9-26-74

1110 Denver Club Bldg (Address) Denver, Colo (City) 80202 (State)

DESCRIPTION OF WELL AND LEASE

Name of lease: Robert G. Quinn

Well number: #1

Elevation (ground): ~~980 est.~~ 990

WELL LOCATION ~~1860~~ 1980 ft. from (N) ~~(S)~~ sec. line ~~660~~ 820 ft. from (E) ~~(W)~~ sec. line

WELL LOCATION Section 18 Township 63N Range 31W

County: Gentry

Nearest distance from proposed location to property or lease line: 660 feet

Distance from proposed location to nearest drilling, completed or applied – for well on the same lease: _____ feet

Proposed depth: 3500'

Rotary ~~or Cable~~ tools

Approx. date work will start: Oct. 21, 1974

Number of acres in lease: 80 ac.

Number of wells on lease, including this well, completed in or drilling to this reservoir: 1

Number of abandoned wells on lease: 0

If lease, purchased with one or more wells drilled, from whom purchased: Name _____ Address _____

No. of Wells: producing _____ inactive _____ abandoned _____

Status of Bond

Single Well ☐ Amt. _____ Blanket Bond ☒ Amt. 30,000

☒ ON FILE ☐ ATTACHED

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone) use back of form if needed.

Proposed casing program:

amt.	size	wt./ft.	cem.
275'	8 5/8"	24 lb	to surface
to TD	5 1/2"	15.5 lb	150 SX

Approved casing – To be filled in by State Geologist

amt.	size	wt./ft.	cem.
O.K as proposed – w/minimum of 30' into Penn for Surface			

I, the undersigned, state that I am the geologist of the Anschutz (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature Henry Ohlen

Permit Number: 20003

Approval Date: 30 Sept 1974

Approved By: Wallace B. Hunt

☒ SAMPLES REQUIRED

☐ SAMPLES NOT REQUIRED

WATER SAMPLES REQUIRED @: any DST's

Note: This Permit not transferable to any other person or to any other location.

Remit two copies to: Missouri Oil and Gas Council P.O. Box 250 Rolla, Mo. 65401

One will be returned.

RECEIVED

SEP 30 19

MO. OIL & GAS COUNCIL

MISSOURI OIL AND GAS COUNCIL

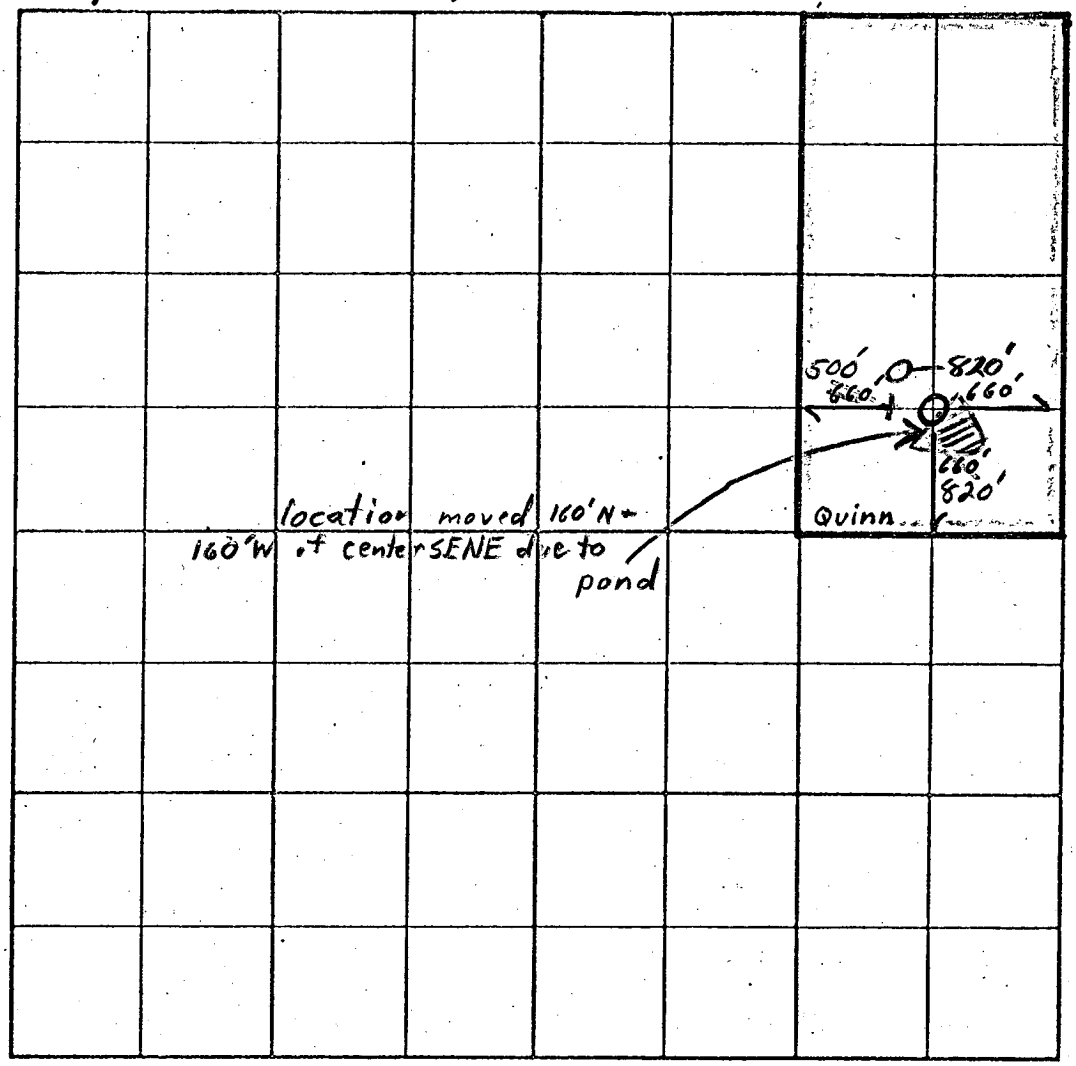
Form OGC - 4

WELL LOCATION PLAT

Owner: The Anschutz Corporation

Lease Name: Robert G. Quinn County, Gentry

1860 / 1980 feet from (N) (S) line and 820 / 660 feet from (E) (W) line of Sec. 18 Twp. 63N Range 31W



SCALE 1" = 1000'

REMARKS: DAVID SCHOOL AREA (#1)

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest lease and section lines, and from the nearest well on the same lease completed in or drilling to the same reservoir. If the location requested is not in conformance with the applicable well-spacing rules, show all off-setting wells to the proposed well. Do not confuse survey lines with lease lines. See rule 7 - 3 (b) for survey requirements.

Remit two copies to: Missouri Oil and Gas Council
P.O. Box 250 Rolla, Mo. 65401
One will be returned.

RECEIVED
OCT 11 1974
MO. OIL & GAS COUNCIL
(SEAL)

Registered Land Surveyor

MISSOURI OIL AND GAS COUNCIL

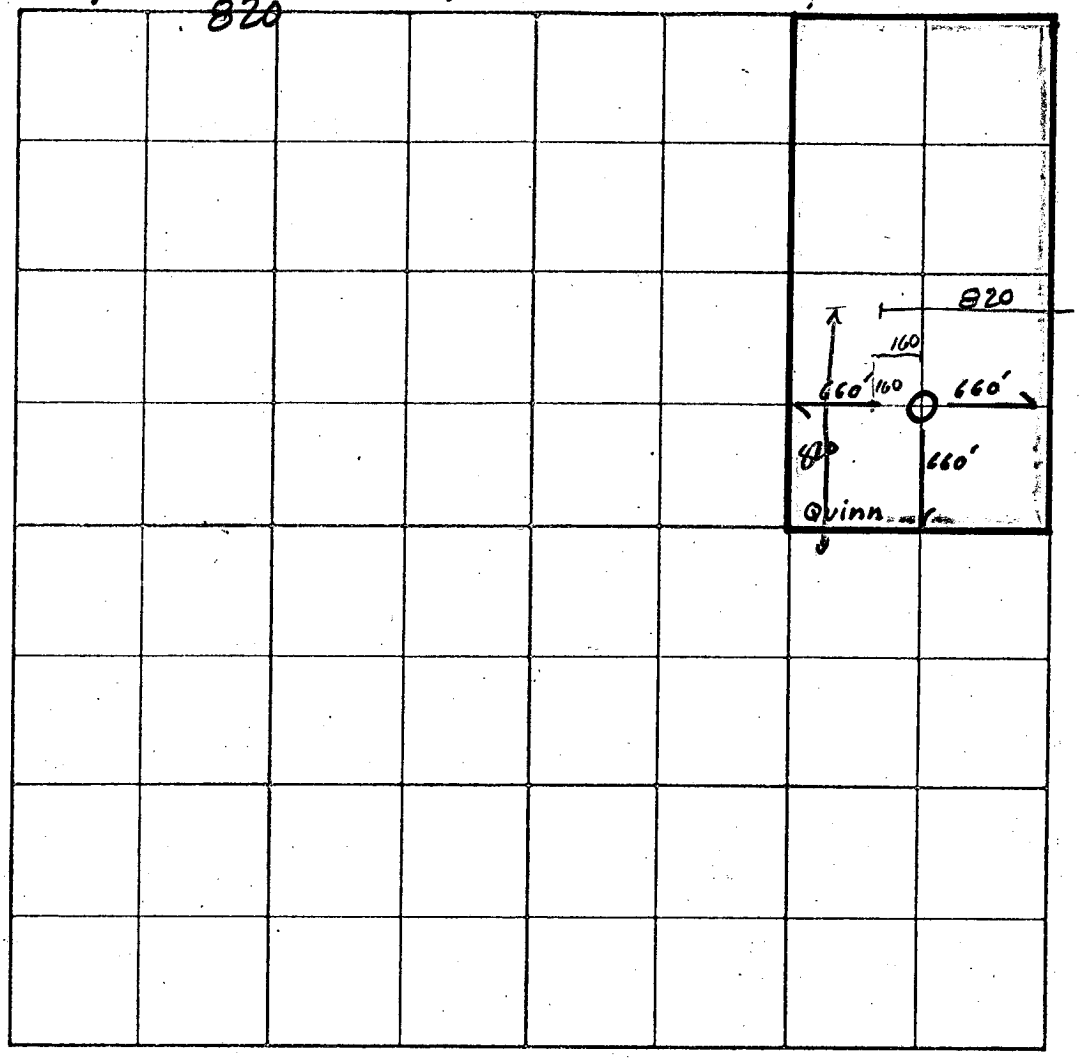
WELL LOCATION PLAT

Form OGC - 4

Owner: The Anschutz Corporation

Lease Name: Robert G. Quinn County, Gentry

~~1980~~ 1860 feet from (N) ~~(S)~~ line and 660 820 feet from (E) ~~(W)~~ line of Sec. 18 Twp. 63N Range 31W



SCALE
1" = 1000'

REMARKS: DAVID SCHOOL AREA (#1)

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest lease and section lines, and from the nearest well on the same lease completed in or drilling to the same reservoir. If the location requested is not in conformance with the applicable well-spacing rules, show all off-setting wells to the proposed well. Do not confuse survey lines with lease lines. See rule 7 - 3 (b) for survey requirements.

Remit two copies to: Missouri Oil and Gas Council
P.O. Box 250 Rolla, Mo. 65401
One will be returned.

(SEAL)

Registered Land Surveyor

MISSOURI OIL AND GAS COUNCIL

Form OGC-5

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

New Well [X] | Work-Over [ ] | Deepen [ ] | Plug Back [ ] | Same Reservoir [ ] | Different Reservoir [ ] | Oil [ ] | Gas [ ] | Dry [ ]

Owner: The Anschutz Corporation	Address: 1110 Denver Club Bldg. Denver, Colorado 80202
Lease Name: QUINN	Well Number: 1
Location: SE NE Sec. 18-63N-31W	Sec. — TWP-Range or Block & Survey
County: Gentry	Permit number (OGC3 number): 20003
Date spudded: 10-28-74	Date total depth reached: 11-17-74
Date completed, ready to produce: 11-20-74 D & A	Elevation (DF, RKB, RT or Gr.): 997 est. feet KB
Elevation of casing hd. flange: feet	Total depth:
P. B. T. D.	
Producing interval (s) for this completion	Rotary tools used (interval): From surface to TD; Drilling Fluid used: Mud
Cable tools used (interval): From ... to ...	
Was this well directionally drilled? NO	Was directional survey made?
Was copy of directional survey filed?	Date filed
Type of electrical or other logs run (list logs filed with the State Geologist): DIL, FDC, CNL, Dipmeter — Schlumberger	Date filed: Forwarded by Schlumberger

CASING RECORD

Casing (report all strings set in well—conductor, surface, intermediate, producing, etc.)

Purpose	Size hole drilled	Size casing set	Weight (lb./ft.)	Depth set	Sacks cement	Amt. pulled
Surface	12¼"	8 5/8"	24	321	250	None

TUBING RECORD

Size	Depth set	Packer set at
in.	ft.	ft.

LINER RECORD

Size	Top	Bottom	Sacks cement	Screen (ft.)
in.	ft.	ft.		

PERFORATION RECORD

Number per ft.	Size & type	Depth Interval

ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD

Am't. & kind of material used	Depth Interval

INITIAL PRODUCTION

Date of first production: D & A

Producing method (indicate if flowing, gas lift or pumping—if pumping, show size & type of pump:)

Date of test	Hrs. tested	Choke size	Oil prod. during test bbls.	Gas prod. during test MCF	Water prod. during test bbls.	Oil gravity API (Corr.)

Tubing pressure	Casing pressure	Calc'ted rate of Production per 24 hrs.	Oil bbls.	Gas MCF	Water bbls.	Gas—oil ratio

Disposition of gas (state whether vented, used for fuel or sold):

Method of disposal of mud pit contents: Pumped below surface casing.

CERTIFICATE: I, the undersigned, state that I am the Prod. Admin. of the Anschutz Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

George Mohr

Signature: George Mohr

JAN 13 1975

MO. OIL & GAS COUNCIL

Remit two copies: one will be returned.

THE ANSCHUTZ CORPORATION QUINN NO. 1

DETAIL OF FORMATIONS PENETRATED

Formation	Top	Bottom	Description*
Base of Drift	260		
Cherokee	592		
Mississippian	1164		
Kinderhook	1460		
Lime Creek	1478		
Hunton	1569		
Maquekota	2070		
Viola	2098		
Simpson	2312		
St. Peter	2382		
Arbuckle	2401		
Granite	3394		
Core #1	3385	3420	Core Data and Description forwarded by Core Lab.
DST #1	2260	2378	Straddle test of Lower Hunton (Test data forwarded by Halliburton).
			Mud Logging Report forwarded by Core Lab.

JAN 13 1975
MO. OIL & GAS COU

*Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:

Attach drillers log or other acceptable log of well if available.

This Well Completion or Recompletion report and well log shall be filed with the Missouri State Geologist not later than 30 days after project completion.

MISSOURI OIL AND GAS COUNCIL

Form OGC-6

NOTICE OF INTENTION TO ABANDON WELL

Name of Lease QUINN Date 12-31-74

Well No 1 is located 1980 feet from (N) (~~S~~) line and 660

feet from (E) (~~W~~) line of Section 18 Township 63N Range 31W

Gentry County The elevation of the ground at well site is 990 est.

feet above sea level.

Name and address of Contractor or Company which will do work is:

Drilling Contractor: Lohman-Johnson Pollution Control, Inc.
1302 Old National Bank Bldg.
Evansville, Indiana 47708

DETAILS OF WORK

(Indicate size, kind, and depth of plugs, where casing will be pulled, other pertinent details)

Well was drilled to TD of 3420' KB and completed as D & A. 8 5/8" 24# surface casing is set at 321 KB.
11-20-74 Set cement plugs as follows:

40 sks. 3350-3237'
25 sks. 2430-2350'
50 sks. 1250-1084'
35 sks. 360-260' across base of surface pipe.
5 sk. plug at top of surface pipe and top of pipe cut off below plow depth.

CERTIFICATE: I, the undersigned, state that I am the Prod. Admin. of the Anschutz Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

George Mohr

Signature George Mohr

JAN 13 1975

MO. OIL & GAS COUNCIL

Remit two copies to: Missouri Oil and Gas Council
P.O. Box 250 Rolla, Mo. 65401
One will be returned.

MISSOURI OIL AND GAS COUNCIL
PLUGGING RECORD

Form OGC-7

Owner: The Anschutz Corporation	Address: 1110 Denver Club Bldg. Denver, Colorado 80202		
Name of Lease: QUINN	Well No.: 1		
Location of Well: SE NE Sec. 18-63N-31W	Sec-Twp-Rge or Block & Survey	County: Gentry	
Application to drill this well was filed in name of: The Anschutz Corporation	Has this well ever produced oil or gas: NO	Character of well at completion (initial production) Oil (bbls/day)	Gas (MCF/day) / Dry?: YES
Date Abandoned: 11-20-74	Total depth: 3420	Amount well producing prior to abandonment. Oil (bbls/day)	Gas (MCF/day) / Water (bbls./day)

Name of each formation containing oil or gas. Indicate which formation open to well-bore at time of abandonment	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used Indicate zones squeeze cemented, giving amount cement.

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, ripped etc)	Packers and shoes
8 5/8"	321	NONE	321		

Was well filled with mud-laden fluid? YES

Indicate deepest formation containing fresh water. Drift

NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well:
See Attached plat		

Method of disposal of mud pit contents: Pumped below surface casing.

Use reverse side for additional detail

File this form in duplicate with

CERTIFICATE: I, the undersigned, state that I am the Prod. Admin. of the Anschutz Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature George Mohr

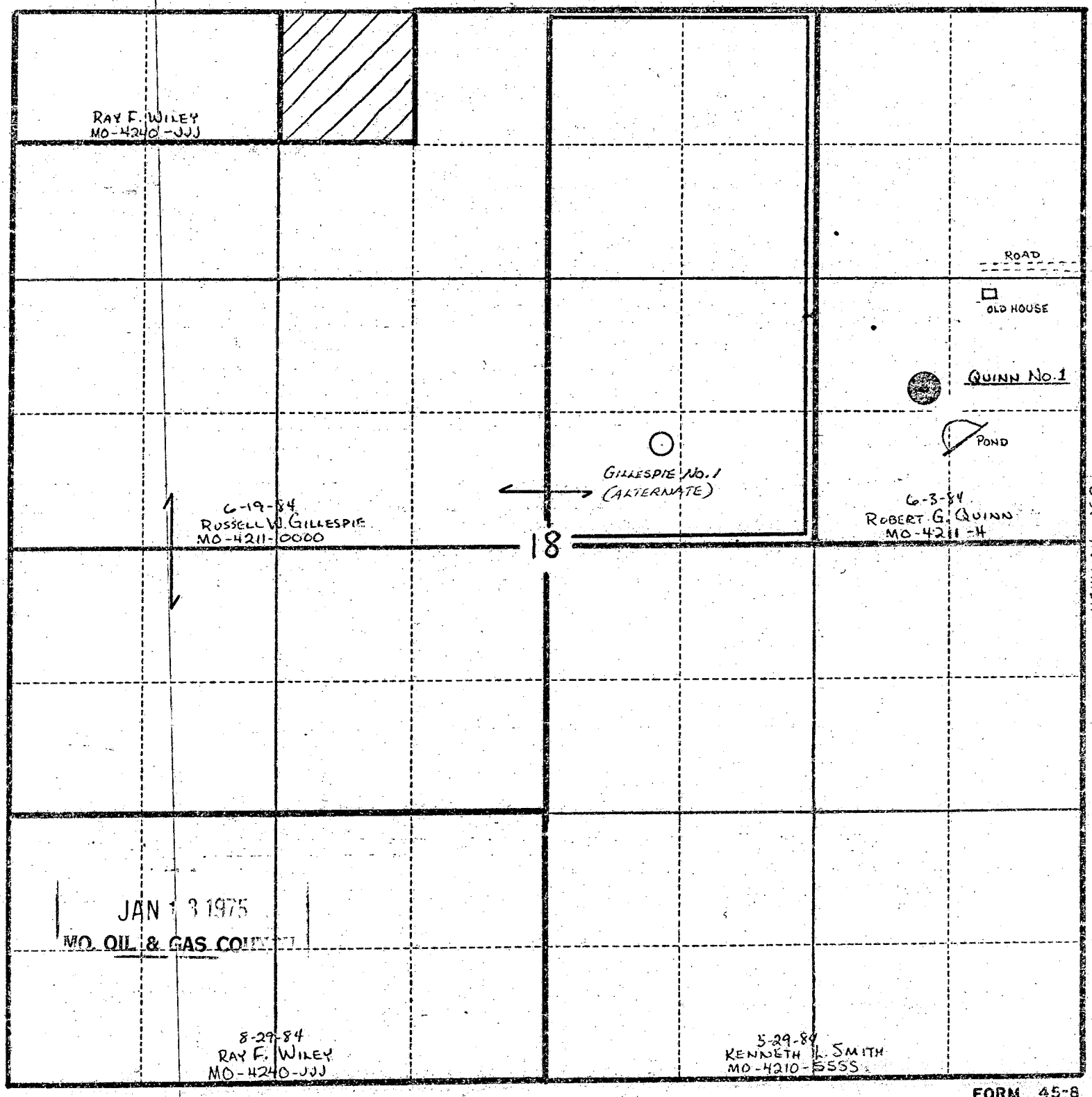
JAN 13 1975

MO. OIL & GAS COUNCIL

Remit two copies; one will be returned

QUINN No. 1 - 160' N & W OF C SE/4 NE/4 SEC. 18-T63N, R31W

Township 63 N, Range 31 W, County GENTRY, State MISSOURI



FORM 45-8

#1 - DAVID SCHOOL AREA

Anschutz Corporation - Quinn

Ge-1 Description of core chips and cuttings, 1/24/75, E.B.K.

Depth	
3300'	Fine grained, red, dolomitic siltstone. Well sorted, angular to subrounded quartz grains, some secondary overgrowths, in iron oxide stained dolomitic groundmass. Black mica flakes are random. Some chips contain abundant green chloritic or glauconitic pellets. The sample also contains individual grains of rounded quartz.
3310'	Dolomitic siltstone. Same as above but somewhat less iron stained. Pyrite, kaolinized feldspars.
3320'	Fine siltstone, gray, with pyrite, glauconite, and kaolinized feldspar.
3330'	Very fine grained, gray, dolomitic siltstone.
3340'	Medium grained, gray sand. Quartz sand grains are rounded and frosted, some are faceted. Few of the sand grains are stained red. Trace of kaolin, pyrite.
3360'	Medium grained, gray sand and sandstone. Includes fragment of fresh pink orthoclase and kaolinized feldspar.
3380'	Zone of deep weathering. Hematitic and chloritic alteration products.
3395'	Weathered, pink granitic rock. Feldspars, quartz, chloritized mica, sericite, hematite.
3396'	Do.
3397'	Zone of deep weathering. Hematitic, chloritic, sericitic alteration products.
3400'	Do.
3401'	Do.
3403'	Weathered, pink granitic rock.
3404'	Dark reddish gray, weathered, micaceous rock.
3405'	Fine grained, red granitic rock. Orthoclase, quartz, biotite.
3409'	Do. +plagioclase. --Spl.
3414'	Do. Biotite is preferentially oriented.
3415'	Weathered or altered granitic rock with sericite.
3417'	Fresh, pink granitic rock with sparse bands of biotite. --Spl.
3420'	Do. --Trace of pyrite.

KILPATRICK ASSOCIATES INC.
CHEMISTS & ENGINEERS

2740 So. PLATTE RIVER DRIVE, ENGLEWOOD, COLORADO 80110
P. O. BOX 1067 • AREA CODE 303 • TELEPHONE 789-9130

WATER ANALYSIS REPORT

TO: The Anschutz Corporation
1110 Denver Club Building
Denver, Colorado 80202

Results Reported (date) 12/19/74 by W. H. Kilpatrick
Laboratory Number D 3617 Job Number
Sample Taken (date) by
Sample Received (date) 12/11/74 by W. H. Kilpatrick

LOCATION WHERE SAMPLE WAS TAKEN

Company The Anschutz Corporation Lease Well No. Quinn #1
SE NE Sec. 18 TWP 63N Range 31W Survey
District Field County Gentry State Missouri
Producing Formation Viola 2260' - 2378' Top
Remarks: (type of sample and where in system it was taken)

CHEMICAL AND PHYSICAL PROPERTIES

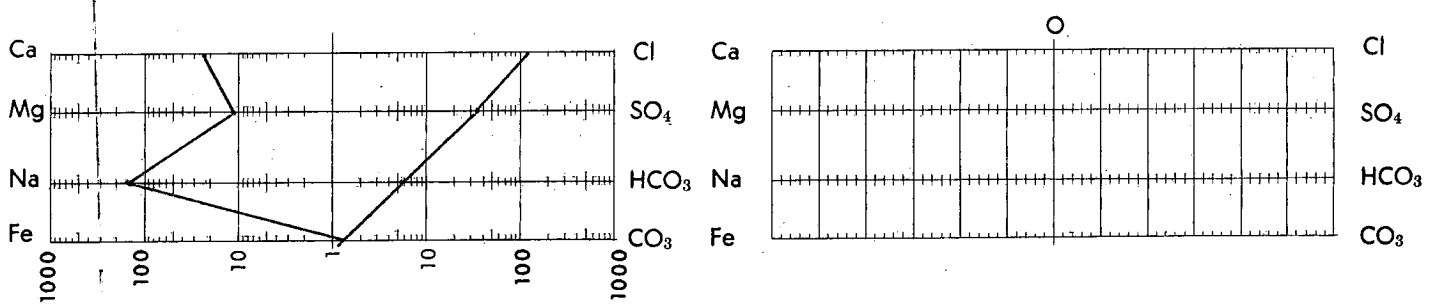
Temp. at Collection °F. pH 6.9 @ 68 °F Resistivity 1.08 (ohm meters)@ 68 °F
Specific Gravity @ °F. H_2S mg/l. O_2 mg/l. Free CO_2 mg/l.
Total Alkalinity 6840 mg/l($CaCO_3$). Total Hardness 1710 mg/l($CaCO_3$). Turbidity
Total Dissolved Solids (By Evaporation) 9152 mg/l. (By Calculation) 11657 mg/l. Total Suspended Solids mg/l.
Dissolved Iron mg/l(Fe). Total Iron 1.8 mg/l(Fe).

	mg/l	MEQ/l		mg/l	MEQ/l
Calcium (Ca)	460	23.0	Chloride (Cl)	3980	112.1
Magnesium (Mg)	136	11.2	Sulfate (SO_4)	1660	34.6
Sodium (Na)	3550	154.3	Bicarbonate (HCO_3)	353	5.8
Potassium (K)	260	6.6	Carbonate (CO_3)	0	
Barium (Ba)	-		Hydroxide (OH)	0	
Lithium (Li)	1	-			
Total Cations		195.1	Total Anions		152.5

REMARKS:

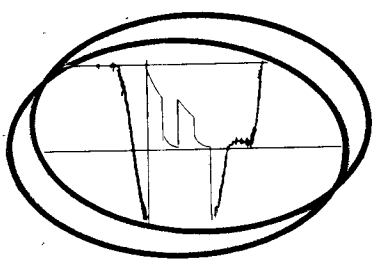
Note: All results are reported as the constituent named unless otherwise noted.

CHART OF WATER CHARACTER—MEQ PER LITER



Formation Testing Service Report

CONFIDENTIAL

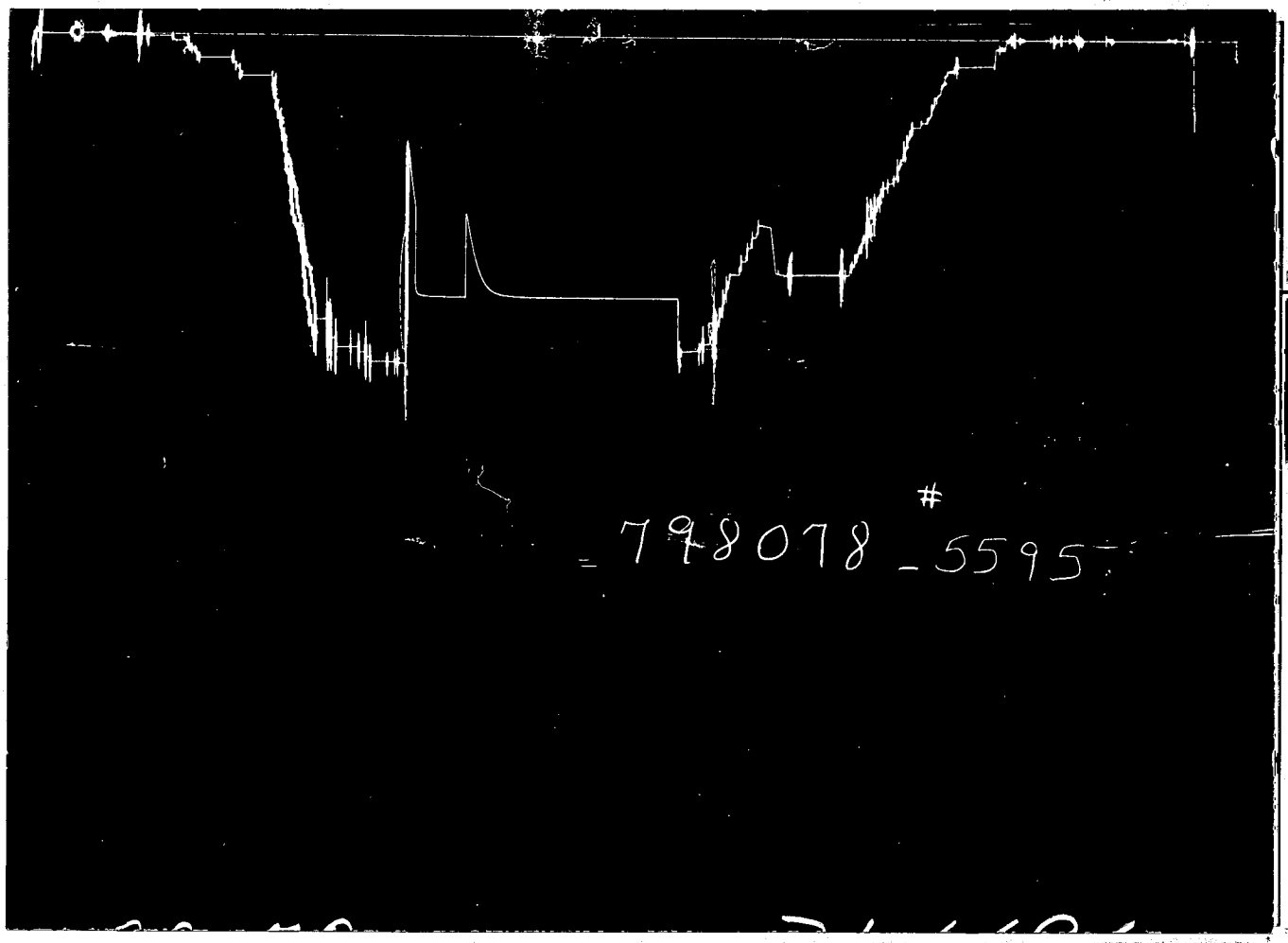


NOV 1 6 1974
MO. OIL & GAS COUNCIL

CONFIDENTIAL

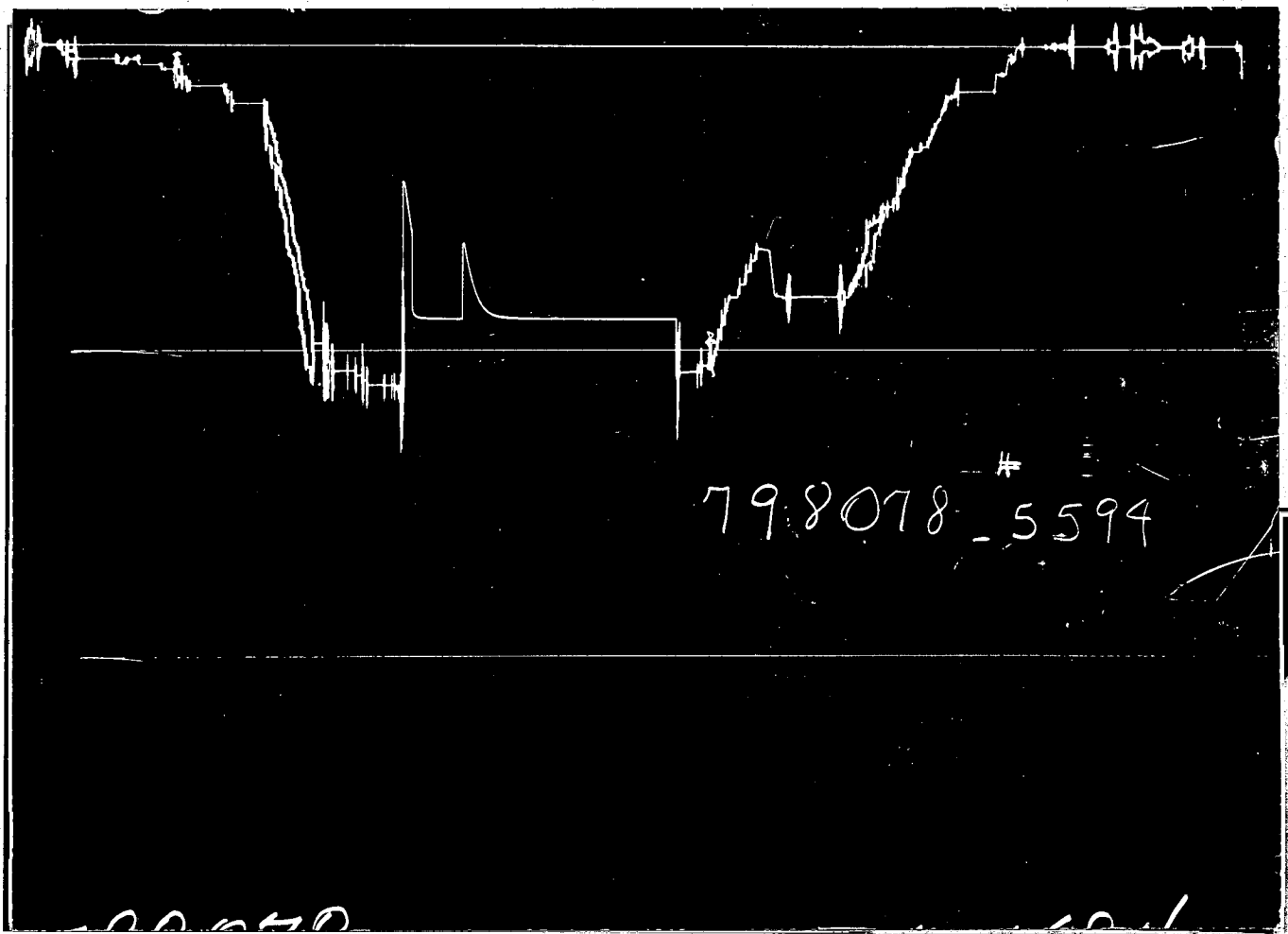
HALLIBURTON SERVICES
DUNCAN, OKLAHOMA

Lease Name	R. QUINN
Well No.	1
Test No.	1
Tested Interval	2260' - 2378'
Lease Owner/Company Name	THE ANSCHUTZ CORPORATION INCORPORATED



PRESSURE

TIME



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

FLUID SAMPLE DATA

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

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

Mud Weight 9.1 vis 40 cp

Date 11-7-74 Ticket Number 798078
Kind of Job OPEN HOLE Halliburton District EL DORADO
Tester BUTCHER Witness PURSWELL
Drilling Contractor LOHMAN AND JOHNSON RIG # 15 NM S

EQUIPMENT & HOLE DATA

Formation Tested Hunton Dolomite
Elevation Kelly Bushing - 980' Ft.
Net Productive Interval Approx. 100' Ft.
All Depths Measured From Kelly Bushing
Total Depth 2378' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 175' I.D. 2.375"
Drill Pipe Length 2050' I.D. 3.826"
Packer Depth(s) 2256' - 2260' Ft.
Depth Tester Valve 2239' Ft.

Cushion TYPE NONE AMOUNT Ft. Depth Back Pres. Valve NONE Surface Choke 1/4" Bottom Choke 3/4"

Recovered 270' Feet of water cut drilling mud
Recovered 1690' Feet of water - not salty
Recovered Feet of
Recovered Feet of
Recovered Feet of

Remarks Tool opened with a strong blow throughout the entire 5 minute first flow. Closed tool for a 30 minute first closed in pressure. Tool reopened with a strong blow for the first 20 minutes of the 37 minute flow. Took a 90 minute second closed in pressure. SEE PRODUCTION TEST DATA SHEET FOR REMAINDER OF THE REMARKS...

TEMPERATURE	Gauge No. 5595 Depth: 2241' Ft.	Gauge No. 5594 Depth: 2374' Ft.	Gauge No. Depth: Ft.	TIME
Est. 92 °F.	12 Hour Clock	12 Hour Clock	Hour Clock	Tool Opened 233 A.M. P.M.
	Blanked Off NO	Blanked Off YES	Blanked Off	Opened Bypass 345 A.M. P.M.
Actual °F.	Pressures	Pressures	Pressures	

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		1058	1054	-	1122				
First Period	Flow Initial	359	339	-	452			———	———
	Flow Final	538	553	-	619			5	5
	Closed in	847	839	-	897			30	30
Second Period	Flow Initial	571	576	-	656			———	———
	Flow Final	839	839	-	897			37	37
	Closed in	847	840	-	899			90	90
Third Period	Flow Initial							———	———
	Flow Final								
	Closed in								
Final Hydrostatic		1009	1011	-	1074			———	———

Legal Location Sec. - Twp. - Rng. 18 - 63N - 31 W
Lease Name K. QUINN
Well No. 1
Test No. 1
Tested Interval 2200' - 2378'
Field Area WILDCAT
Mea. From Tester Valve
County GENTRY
State MISSOURI
Lease Owner/Company Name THE ANSCHUTZ CORPORATION INCORPORATED

FORM 181-R1—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 96671 10M 8/74

4

Casing perfs. _____ Bottom choke 3/4" Surf. temp _____ °F Ticket No. 798078

Gas gravity _____ Oil gravity _____ GOR _____

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

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

Date 11-6-74 Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
11-7-74 1120					Truck called out...
600 AM					On location.
930					Making up the tools and
1000					picking up same..
1000					Going in the hole - bottom with test
					tools.
1030					With collars - 87'
1100					Picking up top test tools.
1130					Going in the hole..
228					Sliding tool to the bottom - 10'
233					Tool slid to bottom...
233					Tool opened with a fair blow.
235					Good blow in 12" of water.
237					Had a strong blow.
238					Closed tool.
308					Opened tool - fair blow.
310					Strong blow in 12" of water
320					No gas to the surface.
330					Blow was getting weaker.
338					Opened a 1" valve.
340					Had a very weak blow.
343					No blow with 1" open
345					Closed tool
515					Off bottom...

Casing perfs._____ Bottom choke._____ Surf. temp._____ °F Ticket No. 708078

Gas gravity._____ Oil gravity._____ GOR_____

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

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED_____

Date Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks PAGE # 2
615					Dropped reversing bar..
620					Water reversing..
700					Finished - pulled pipe...

Gauge No.	5595	Depth	2241'	Clock No.	7101	12 hour	Ticket No.	798078

	First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.000	339	.000		553	.000	576	.000		839					
1	.0074	385	.0067		825	.0477	737**	.605		840					
2	.0148	425	.0134		831	.0818	802								
3	.0222	468	.0201		834	.1159	825								
4	.0296	513	.0268		835	.1500	833								
5	.0370	553	.0335		836	.1841	837								
6			.0402		836	.2182	838								
7			.0469		837	.2520	839								
8			.0536		837										
9			.0603		838										
10			.0670		838										
11			.0939		838										
12			.1208		839										
13			.1477		839										
14			.1746		839										
15			.2020		839										

Gauge No.	5594	Depth	2374'	Clock No.	7047	12 hour

0	.000	452	.000		619	.000	656	.000		897					
1	.0076	461	.0067		884	.0475	799**	.610		899					
2	.0152	499	.0134		889	.0814	860								
3	.0228	542	.0201		892	.1153	882								
4	.0304	584	.0268		894	.1492	891								
5	.0380	619	.0335		894	.1831	894								
6			.0402		895	.2170	896								
7			.0469		895	.2510	897								
8			.0536		896										
9			.0603		896										
10			.0670		897										
11			.0939		897										
12			.1208		897										
13			.1477		897										
14			.1746		897										
15			.2020		897										
Reading Interval	1		*			5									

REMARKS: * FIRST 10 READINGS = 1 MINUTE EACH - NEXT 5 READINGS = 4 MINUTES EACH. ** INTERVAL = 7 MINUTES. Minutes

FORM 183-RI—PRINTED IN U.S.A.

SPECIAL PRESSURE DATA

LITTLE'S 96673 75C 8/74

TICKET NO. 798078

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	5 3/4"	2.75"	1'	
Reversing Sub				
DOUBLE PIN	5 3/4"	2.75"	1'	
Water Cushion Valve				
Drill Pipe	4½" XH	3.826"	2050'	
Drill Collars	6"	2.375"	175'	
Handling Sub & Cross-over Assembly	4½"		4'	
Dual CIP Valve	5"	.87"	5'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	2239'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.75"	4'	2241'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1.00"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1.50"	4'	2256'
Distributor				
Packer Assembly	6 3/4"	1.50"	4'	2260'
Flush Joint Anchor				
Cross-over Assembly	5 3/4"	2.75"	2'	
CHANGE OVERS				
Blanked-Off B.T. Running Case				
Drill Collars	6"	2.375"	87'	
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
CHANGE OVERS	5 3/4"	2.75"	2'	
Flush Joint Anchor	5"	3.84"	22'	
Blanked-Off B.T. Running Case	5"	2.75"	4'	2374'
Total Depth				2378'

FORM 187-R1—PRINTED IN U.S.A.

EQUIPMENT DATA

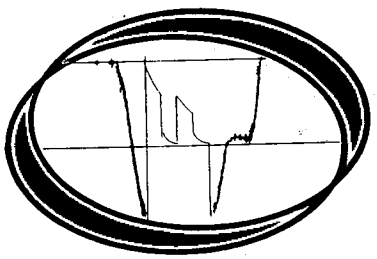
LITTLE'S 96676 75C 8/74

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b_1	= Approximate Radius of Investigation (Net Pay Zone h_1)	Feet
D.R.	= Damage Ratio	——
El	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h_1	= Net Pay Thickness	Feet
K	= Permeability	md
K_1	= Permeability (From Net Pay Zone h_1)	md
m	= Slope Extrapolated Pressure Plot (Psi^2/cycle Gas)	psi/cycle
OF_1	= Maximum Indicated Flow Rate	MCF/D
OF_2	= Minimum Indicated Flow Rate	MCF/D
OF_3	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF_4	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_F	= Final Flow Pressure	Psig.
P_{ot}	= Potentiometric Surface (Fresh Water*)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q_1	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	——
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.

Formation Testing Service Report



QUINN
Lease Name

1
Well No.

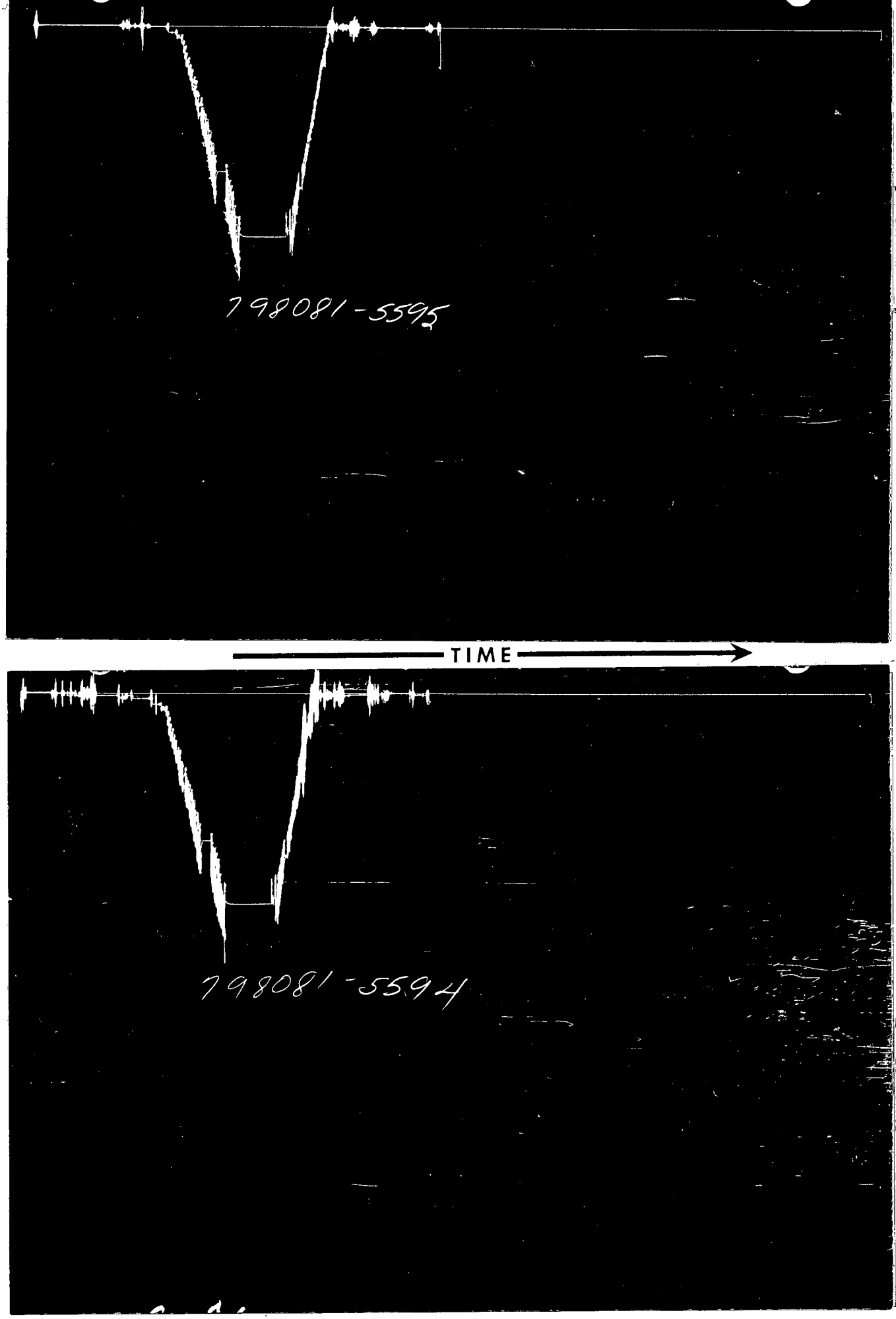
2
Test No.

2250 - 2290'
Tested Interval

THE ANSCHUTZ CORPORATION INCORPORATED
Lease Owner/Company Name

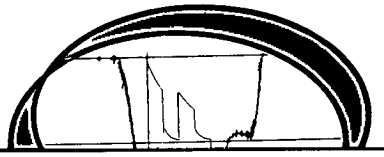
RECEIVED
DEC 0 6 1974
MO. OIL & GAS COUNCIL

HALLIBURTON SERVICES
DUNCAN, OKLAHOMA



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

Formation Testing Service Report



FLUID SAMPLE DATA

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

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

Mud Weight _____ vis _____ cp

Date 11-19-74 Ticket Number 798081
Kind of Job STRADDLE OPEN HOLE Halliburton District EL DORADO
Tester W.E. BUTCHER Witness MR. PURSWELL
Drilling Contractor LOHMAN & JOHNSON DRILLING COMPANY SM

EQUIPMENT & HOLE DATA

Formation Tested -
Elevation - Ft.
Net Productive Interval 40' Ft.
All Depths Measured From Kelly bushing
Total Depth 3420' Plug back Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 116' I.D. 2.375"
Drill Pipe Length 2101' I.D. 2.764"
Packer Depth(s) 2250-2290' Ft.
Depth Tester Valve 2233' Ft.

Cushion TYPE _____ AMOUNT _____ Ft. Depth Back Pres. Valve _____ Surface Choke 1/4" Bottom Choke 3/4"

Recovered _____ Feet of _____
Recovered _____ Feet of _____
Recovered _____ Feet of _____
Recovered _____ Feet of _____
Recovered _____ Feet of _____

Meas. From Tester Valve

Remarks Went in hole with tools, tool at 2238'...could not get to formation.

Cement plug back over formation. Came out of the hole. Unsuccessful test.

TEMPERATURE	Gauge No. 5595 Depth: 2235 Ft.	Gauge No. 5594 Depth: 2281 Ft.	Gauge No. 1715 Depth: 2298 Ft.	TIME
	12 Hour Clock	12 Hour Clock	12 Hour Clock	Tool A.M.
Est. °F.	Blanked Off no	Blanked Off no	Blanked Off yes	Opened P.M.
2286'				Opened A.M.
Actual 83 °F.	Pressures	Pressures	Pressures	Bypass P.M.

	Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic								
First Period Flow Initial							———	———
First Period Flow Final	No readings available....did not reach desired depth.							
First Period Closed in								
Second Period Flow Initial							———	———
Second Period Flow Final								
Second Period Closed in								
Third Period Flow Initial							———	———
Third Period Flow Final								
Third Period Closed in								
Final Hydrostatic							———	———

Legal Location Sec. - Twp. - Rng. 18 63 N 31 W
Lease Name QUINN
Well No. 1
Test No. 2
Tested Interval 2250 - 2290'
Field Area WILDCAT
County GENTRY
State MISSOURI
Lease Owner/Company Name THE ANSCHUTZ CORPORATION INCORPORATED

FORM 161-R1—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 96671 10M 8/74

TICKET NO. 798081

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	5 3/4"	2.75"	1'	
Reversing Sub Double pin	5 3/4"	2.75"	1'	
Water Cushion Valve				
Drill Pipe	4½"	2.764"	2101'	
Drill Collars	6"	2.375"	116'	
Handling Sub & Choke Assembly	4½"		4'	
Dual CIP Valve	5"	.87"	5'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	2233'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.75"	4'	2235'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1.50"	4'	2250'
Distributor				
Packer Assembly				
Flush Joint Anchor	5"	3.84"	30'	
Pressure Equalizing Tube				
~~Blanked-Off B.T.~~ AP Running Case	5"	3.75"	4'	2281'
Drill Collars				
Anchor Pipe Safety Joint				
~~Packer Assembly~~ Temp recorder	5"		2'	2286'
~~Distributor~~ Blanked off sub	5"	3.84"	1'	
Packer Assembly	6 3/4"	1.50"	4'	2290'
Anchor Pipe Safety Joint				
Side Wall Anchor	5"		6'	2293'
Drill Collars				
Flush Joint Anchor	5"	3.84"	1'	
Blanked-Off B.T. Running Case	5"	2.75"	4'	2298'
Total Depth				3420'

EQUIPMENT DATA

LITTLE'S 96676 75C 8/74

TEMPERATURE RECORDER CHART

10° each circle

OF_3 = Theoretical Open Flow Potential with/Damage Removed Max. . . . . MCF/D

OF_4 = Theoretical Open Flow Potential with/Damage Removed Min. . . . . MCF/D

P_s = Extrapolated Static Pressure . . . . . Psig.

P_F = Final Flow Pressure . . . . . Psig.

P_{ot} = Potentiometric Surface (Fresh Water*) . . . . . Feet

Q = Average Adjusted Production Rate During Test . . . . . bbls/day

Q_1 = Theoretical Production w/Damage Removed . . . . . bbls/day

Q_g = Measured Gas Production Rate . . . . . MCF/D

R = Corrected Recovery . . . . . bbls

r_w = Radius of Well Bore . . . . . Feet

t = Flow Time . . . . . Minutes

t_o = Total Flow Time . . . . . Minutes

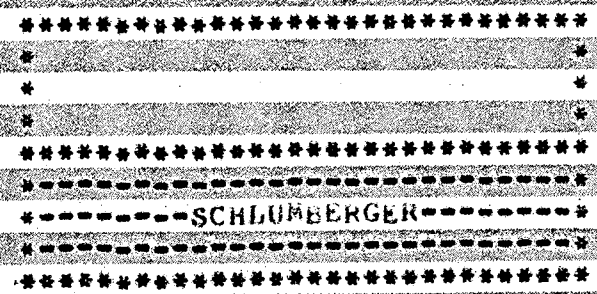
T = Temperature Rankine . . . . . °R

Z = Compressibility Factor . . . . . ——

μ = Viscosity Gas or Liquid . . . . . CP

Log = Common Log

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.



DIPMETER CLUSTER CALCULATION LISTING

ANSCHUTZ CORP. ET AL

QUINN NO. 1

WILDCAT

GENTRY COUNTY, MISSOURI

RUN NO. ONE JOB NO. 02273

CORRELATION LENGTH 4 FT.

STEP LENGTH 2 FT.

SEARCH ANGLE 30 DEG. X2

20-NOV-74

Schlumberger

DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST =4
1402.0	6.0	289	1.4	8	7.9	8.1	1
1404.0	8.4	176	1.3	6	7.8	8.0	3
1406.0	8.0	163	1.2	7	7.6	7.8	3
1408.0	16.6	149	1.2	11	7.6	7.7	1
1410.0			1.2	10	7.6	7.7	
1412.0			1.2	11	7.6	7.8	
1414.0			1.2	17	7.4	7.7	
1416.0			1.3	19	7.2	7.7	
1418.0			1.3	15	7.3	7.8	
1420.0			1.3	14	7.9	7.9	
1422.0			1.2	16	8.1	8.0	
1424.0			1.2	14	8.1	8.0	
1426.0			1.2	14	8.1	8.0	
1428.0			1.2	13	8.1	8.1	
1430.0			1.2	12	8.0	8.0	
1432.0	15.9	123	1.2	12	7.9	7.9	3
1434.0	0.8	276	1.2	12	8.0	7.9	2
1436.0	8.0	325	1.2	13	8.0	7.9	4
1438.0	6.9	327	1.2	13	8.0	7.9	4
1440.0	3.7	299	1.2	14	8.0	7.9	4
1442.0	2.2	133	1.2	16	8.0	8.0	4
1444.0	1.9	201	1.3	17	8.0	8.1	4
1446.0	5.9	314	1.2	17	8.1	8.1	4
1448.0	1.6	279	1.2	16	8.1	8.1	2
1450.0	1.4	283	1.2	14	8.1	8.1	2
1452.0	6.2	129	1.2	13	8.1	8.2	2
1454.0	4.4	299	1.2	14	8.1	8.1	2
1456.0	1.1	154	1.2	16	8.1	8.1	4
1458.0	4.7	129	1.2	16	8.0	8.1	4
1460.0	5.6	135	1.3	14	8.1	8.2	4
1462.0	5.6	147	1.3	14	8.4	8.4	4
1464.0	1.0	107	1.3	14	8.6	8.7	4
1466.0	1.3	111	1.3	14	8.6	8.8	4
1468.0	2.2	109	1.3	14	8.7	9.0	4
1470.0	1.2	232	1.3	15	8.9	9.1	2
1472.0	0.7	120	1.3	15	8.9	9.1	4
1474.0	0.8	159	1.3	15	9.1	9.2	4
1476.0	1.0	161	1.3	6	9.6	9.2	4
1478.0	0.9	163	1.3	4	9.4	9.1	4
1480.0	7.4	111	1.3	10	8.2	8.7	4
1482.0	6.6	109	1.2	11	7.8	8.2	4
1484.0	3.5	108	1.3	15	7.9	8.1	4
1486.0	13.5	24	1.3	14	8.1	8.2	2
1488.0	22.0	167	1.3	11	8.2	8.2	1
1490.0	22.6	170	1.3	10	8.3	8.3	1

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST =4
1492.0			1.3	12	8.4	8.4	
1494.0			1.2	14	8.4	8.6	
1496.0			1.2	14	8.5	8.7	
1498.0			1.2	12	8.6	8.6	
1500.0			1.2	10	8.6	8.5	
1502.0			1.2	8	8.5	8.6	
1504.0			1.2	8	8.6	8.6	
1506.0			1.2	9	8.6	8.5	
1508.0	3.1	174	1.2	9	8.6	8.6	4
1510.0	2.0	162	1.2	10	8.6	8.6	4
1512.0	2.1	173	1.2	10	8.5	8.5	4
1514.0	1.9	135	1.2	10	8.5	8.5	4
1516.0	0.2	121	1.2	10	8.7	8.6	4
1518.0	0.3	207	1.2	9	8.7	8.7	4
1520.0	0.8	184	1.2	9	8.6	8.7	4
1522.0	1.2	189	1.2	8	8.6	8.7	4
1524.0	2.3	218	1.2	8	8.5	8.6	4
1526.0	1.7	292	1.2	9	8.5	8.6	4
1528.0	1.7	296	1.2	9	8.4	8.6	4
1530.0	0.3	338	1.2	9	8.5	8.6	2
1532.0			1.2	9	8.5	8.6	
1534.0	0.2	81	1.2	7	8.4	8.5	4
1536.0	0.6	212	1.2	6	8.1	8.2	4
1538.0	4.3	352	1.2	7	8.1	8.1	4
1540.0	5.2	13	1.2	8	8.4	8.4	4
1542.0	3.7	210	1.2	8	8.5	8.6	4
1544.0	2.7	208	1.2	6	8.5	8.6	4
1546.0	1.0	185	1.2	5	8.5	8.6	4
1548.0	1.3	157	1.2	6	8.4	8.5	4
1550.0	3.1	114	1.2	6	8.3	8.4	4
1552.0	2.5	60	1.1	6	8.3	8.3	4
1554.0	2.2	80	1.1	6	8.4	8.4	4
1556.0	0.7	169	1.1	6	8.5	8.4	4
1558.0	0.7	240	1.1	6	8.5	8.5	4
1560.0	0.9	13	1.1	6	8.5	8.4	4
1562.0	2.5	298	1.1	8	8.4	8.4	4
1564.0	0.3	202	1.1	7	8.3	8.4	4
1566.0	2.9	164	1.1	7	8.3	8.3	4
1568.0	4.9	133	1.1	8	8.3	8.3	4
1570.0	1.4	167	1.0	8	8.3	8.3	4
1572.0	0.7	123	1.1	8	8.3	8.3	4
1574.0	1.7	54	1.1	8	8.3	8.3	4
1576.0	1.0	54	1.1	8	8.3	8.3	4
1578.0	2.2	19	1.1	8	8.3	8.4	4
1580.0	0.9	218	1.1	7	8.2	8.2	4

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST	QUAL. INDEX =4
1582.0	8.1	343	1.1	6	8.2	8.1	4	
1584.0	3.9	353	1.0	6	8.2	8.1	4	
1586.0			1.0	7	8.0	8.1		
1588.0	6.7	219	1.0	6	7.9	8.0	4	
1590.0	7.9	219	1.0	5	7.8	8.0	4	
1592.0	5.9	183	1.0	5	8.0	8.1	4	
1594.0	6.0	184	1.0	5	7.9	8.2	4	
1596.0	4.1	290	1.1	6	7.7	8.1	4	
1598.0	4.5	282	1.1	8	7.6	8.1	4	
1600.0	2.6	209	1.1	9	7.6	7.9	4	
1602.0	4.9	201	1.1	8	7.8	7.8	4	
1604.0	4.6	152	1.0	8	8.0	7.9	4	
1606.0	4.7	142	1.0	7	8.1	8.1	4	
1608.0	5.1	250	1.0	7	8.1	8.2	2	
1610.0	11.0	204	0.9	7	8.1	8.2	2	
1612.0	1.2	190	0.9	8	7.7	8.0	2	
1614.0	1.0	253	0.9	5	7.4	7.6	4	
1616.0	1.6	229	1.0	360	7.5	7.6	4	
1618.0	2.4	187	1.0	358	7.6	7.8	4	
1620.0	0.6	222	1.0	357	7.6	7.9	4	
1622.0	0.6	260	1.0	355	7.6	7.8	4	
1624.0	0.7	61	1.0	355	7.6	7.8	4	
1626.0	0.9	72	1.0	354	7.7	8.0	4	
1628.0	2.2	280	1.0	354	8.0	8.2	4	
1630.0	2.1	274	1.1	357	8.0	8.2	4	
1632.0	3.6	237	1.0	358	8.0	8.2	4	
1634.0	5.6	186	0.9	359	8.0	8.0	4	
1636.0	5.1	198	0.9	1	7.7	7.8	4	
1638.0	7.6	255	0.9	2	7.5	7.7	4	
1640.0	3.4	290	0.9	0	7.8	8.0	4	
1642.0	0.9	227	0.9	358	8.1	8.1	4	
1644.0	2.2	237	0.9	357	8.1	8.2	4	
1646.0	0.6	209	1.0	358	8.1	8.2	4	
1648.0	0.4	243	1.0	358	8.1	8.1	4	
1650.0	0.3	215	0.9	357	8.0	8.1	4	
1652.0	2.4	323	0.9	358	7.9	8.1	1	
1654.0			1.0	1	8.0	8.2		
1656.0			1.1	3	8.2	8.4		
1658.0	5.4	119	1.0	1	8.1	8.3	3	
1660.0	3.4	129	1.0	359	8.0	8.1	3	
1662.0	5.8	93	0.9	359	8.0	8.1	1	
1664.0	6.8	80	0.9	358	8.1	8.1	1	
1666.0	0.3	212	0.9	357	8.2	8.2	4	
1668.0	1.1	350	1.0	355	8.1	8.1	4	
1670.0	4.1	346	1.0	357	8.1	8.1	4	

Schlumberger

DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST	QUAL. INDEX =4
1852.0	4.9	338	1.1	355	8.4	8.5	4	
1854.0			1.1	352	8.5	8.6		
1856.0			1.2	349	8.6	8.6		
1858.0			1.2	349	8.7	8.6		
1860.0			1.2	350	8.7	8.6		
1862.0	8.2	119	1.2	350	8.7	8.7	2	
1864.0	2.5	277	1.2	350	8.6	8.7	2	
1866.0	2.9	196	1.2	350	8.6	8.6	4	
1868.0	2.0	260	1.2	350	8.7	8.6	4	
1870.0	2.0	260	1.2	351	8.7	8.7	4	
1872.0	13.4	206	1.2	350	8.7	8.7	4	
1874.0	13.4	202	1.2	348	8.6	8.7	4	
1876.0	11.3	150	1.2	346	8.6	8.6	4	
1878.0	2.9	196	1.2	346	8.7	8.8	4	
1880.0	7.5	193	1.3	346	8.7	8.9	4	
1882.0	4.6	105	1.3	346	8.7	9.0	2	
1884.0	1.9	151	1.2	346	8.7	9.0	2	
1886.0	3.9	63	1.2	347	8.7	9.1	4	
1888.0			1.3	347	8.7	9.1		
1890.0	28.1	85	1.2	349	8.6	9.1	3	
1892.0	28.5	83	1.3	351	8.6	9.0	3	
1894.0	17.7	43	1.3	351	8.5	9.0	1	
1896.0	25.1	28	1.3	348	8.5	9.0	1	
1898.0	22.1	27	1.3	346	8.4	8.9	3	
1900.0	21.6	19	1.3	346	8.4	8.8	1	
1902.0			1.4	345	8.4	8.8		
1904.0			1.5	342	8.5	8.8		
1906.0			1.5	341	8.5	8.8		
1908.0	10.2	308	1.5	341	8.5	8.9	3	
1910.0	10.3	308	1.5	342	8.5	8.9	3	
1912.0			1.5	342	8.6	8.9		
1914.0			1.5	341	8.6	8.9		
1916.0			1.5	341	8.6	8.9		
1918.0	8.5	9	1.6	341	8.6	9.0	1	
1920.0	2.4	39	1.6	342	8.6	9.0	1	
1922.0	1.6	225	1.6	342	8.6	9.0	1	
1924.0	1.6	224	1.6	343	8.6	9.0	1	
1926.0	2.4	205	1.6	343	8.6	9.0	1	
1928.0			1.7	342	8.5	8.9		
1930.0			1.7	344	8.5	8.7		
1932.0			1.6	345	8.6	8.8		
1934.0			1.6	342	8.6	8.9		
1936.0			1.7	341	8.5	8.9		
1938.0			1.7	342	8.5	8.9		
1940.0			1.8	342	8.5	8.9		

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST =4
1942.0			1.8	342	8.5	8.8	
1944.0	8.8	358	1.8	341	8.4	8.7	3
1946.0	7.6	351	1.8	343	8.3	8.5	3
1948.0	4.1	358	1.7	344	8.3	8.4	1
1950.0	12.9	265	1.8	345	8.3	8.3	1
1952.0			1.7	346	8.1	8.3	
1954.0			1.7	346	8.1	8.3	
1956.0			1.8	347	8.1	8.3	
1958.0	7.1	294	1.8	346	8.1	8.3	1
1960.0	4.1	272	1.8	344	8.1	8.3	1
1962.0	9.6	291	1.8	343	8.2	8.5	3
1964.0	8.5	288	1.9	343	8.4	8.7	3
1966.0			1.9	345	8.6	8.9	
1968.0			1.9	346	8.6	8.7	
1970.0	7.2	276	1.9	346	8.2	8.3	2
1972.0	3.9	309	1.9	345	7.9	8.2	4
1974.0	1.9	332	1.9	345	8.0	8.2	4
1976.0	1.7	316	2.0	346	8.2	8.4	4
1978.0	2.9	205	2.0	346	8.4	8.7	4
1980.0	3.0	197	2.0	347	8.4	8.7	4
1982.0	1.2	151	2.0	347	8.2	8.6	4
1984.0	1.9	227	2.0	344	8.0	8.5	4
1986.0	2.0	182	2.0	343	7.9	8.2	4
1988.0	7.8	153	2.0	344	7.7	7.9	4
1990.0	5.6	149	2.0	344	7.7	7.8	4
1992.0			2.0	345	7.7	7.8	
1994.0	9.7	82	2.0	347	7.7	7.7	2
1996.0	2.6	266	2.0	346	7.7	7.7	4
1998.0	6.4	161	2.0	343	7.5	7.7	4
2000.0	3.6	161	2.0	344	7.6	7.9	4
2002.0	2.5	166	2.0	350	7.8	8.2	4
2004.0	2.1	296	2.0	351	7.9	8.3	4
2006.0	2.0	235	2.0	348	8.0	8.3	4
2008.0	2.0	136	2.0	347	8.1	8.5	2
2010.0	2.7	191	2.0	346	8.0	8.6	4
2012.0	3.5	197	2.0	346	8.0	8.7	4
2014.0	4.3	202	2.0	345	8.2	8.8	4
2016.0	3.4	215	2.0	347	8.3	8.9	4
2018.0	2.9	221	2.0	349	8.2	8.9	4
2020.0	2.4	196	2.1	349	8.1	9.0	4
2022.0	2.9	196	2.0	348	8.0	8.9	4
2024.0	3.0	167	2.0	346	8.0	8.9	4
2026.0	2.5	176	2.1	346	8.1	8.9	4
2028.0	2.3	197	2.0	346	8.0	8.8	4
2030.0	2.9	205	2.0	346	8.0	8.8	4

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST =4
2032.0	3.5	230	2.0	346	8.0	8.8	4
2034.0			2.1	347	8.1	8.7	
2036.0			2.1	347	8.2	8.7	
2038.0			2.1	346	8.2	8.8	
2040.0			2.1	345	8.2	8.8	
2042.0			2.1	346	8.3	8.7	
2044.0			2.1	346	8.3	8.7	
2046.0			2.1	347	8.3	8.6	
2048.0			2.1	349	8.4	8.6	
2050.0			2.1	348	8.4	8.6	
2052.0			2.1	345	8.5	8.5	
2054.0			2.1	345	8.5	8.4	
2056.0	0.4	190	2.1	346	8.5	8.3	4
2058.0	1.7	210	2.1	346	8.5	8.3	4
2060.0	1.8	203	2.1	345	8.6	8.3	4
2062.0	2.3	170	2.1	346	8.7	8.3	2
2064.0	4.3	90	2.2	345	8.7	8.3	2
2066.0	2.0	157	2.1	345	8.7	8.5	2
2068.0	2.6	165	2.1	345	8.6	8.6	4
2070.0	1.1	237	2.1	344	8.6	8.6	2
2072.0	2.0	186	2.1	344	8.6	8.5	2
2074.0	1.9	79	2.1	344	8.6	8.4	2
2076.0	6.1	208	2.1	344	8.5	8.4	4
2078.0	4.2	197	2.1	344	8.6	8.4	4
2080.0	3.5	191	2.2	345	8.6	8.3	4
2082.0	5.9	203	2.2	344	8.6	8.4	4
2084.0	2.9	171	2.2	344	8.5	8.4	4
2086.0	2.1	177	2.2	348	8.5	8.4	4
2088.0	3.4	196	2.3	348	8.5	8.4	4
2090.0	4.6	189	2.3	345	8.6	8.5	4
2092.0	5.3	194	2.3	345	8.6	8.5	4
2094.0	5.7	185	2.2	345	8.6	8.5	2
2096.0	4.7	200	2.2	345	8.6	8.6	4
2098.0	5.0	204	2.2	346	8.6	8.6	4
2100.0	6.1	197	2.2	347	8.4	8.5	4
2102.0	6.5	202	2.3	349	8.4	8.5	4
2104.0	5.7	247	2.3	349	8.5	8.7	3
2106.0	7.8	222	2.2	348	8.7	8.9	3
2108.0	8.1	267	2.2	350	8.8	8.9	1
2110.0			2.2	349	8.8	8.8	
2112.0			2.2	348	8.6	8.7	
2114.0			2.3	348	8.1	8.4	
2116.0			2.3	346	7.8	8.2	
2118.0	7.3	114	2.3	345	7.9	8.2	1
2120.0	4.2	216	2.3	348	8.0	8.2	1

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST =4
2122.0	8.2	279	2.3	349	7.9	8.2	1
2124.0	11.7	101	2.3	349	8.0	8.2	1
2126.0	9.0	230	2.3	348	8.0	8.2	1
2128.0	9.0	231	2.3	349	8.0	8.1	1
2130.0			2.3	351	7.9	7.9	
2132.0			2.3	352	7.8	7.6	
2134.0			2.3	351	7.9	7.6	
2136.0			2.3	351	7.9	7.9	
2138.0	9.2	37	2.3	349	7.7	7.9	1
2140.0	2.4	211	2.3	347	7.4	7.8	1
2142.0			2.4	346	7.2	7.8	
2144.0	2.6	98	2.4	345	7.3	7.8	1
2146.0	3.8	148	2.4	345	7.3	7.7	3
2148.0	5.1	139	2.4	347	7.3	7.6	3
2150.0	5.3	140	2.4	348	7.4	7.6	4
2152.0	1.3	230	2.3	348	7.6	7.9	2
2154.0			2.4	348	7.9	8.1	
2156.0	8.1	134	2.3	349	7.9	8.3	2
2158.0	1.7	1	2.4	348	8.1	8.3	4
2160.0	2.0	195	2.4	349	8.2	8.3	4
2162.0	3.1	149	2.3	350	8.2	8.3	4
2164.0	0.9	173	2.3	350	8.1	8.2	4
2166.0	2.4	352	2.3	349	8.2	8.2	2
2168.0	4.0	228	2.4	349	8.1	8.1	2
2170.0			2.4	349	7.9	8.0	
2172.0			2.5	350	7.9	7.9	
2174.0			2.6	353	7.9	7.8	
2176.0			2.5	354	7.9	7.8	
2178.0			2.5	352	7.9	7.8	
2180.0			2.5	351	7.8	7.8	
2182.0			2.5	352	7.5	7.8	
2184.0			2.5	353	7.3	7.8	
2186.0			2.6	353	7.5	7.7	
2188.0			2.6	353	7.7	7.7	
2190.0			2.6	353	7.5	7.6	
2192.0			2.5	352	7.4	7.6	
2194.0			2.6	351	7.5	7.6	
2196.0			2.7	352	7.7	7.7	
2198.0			2.7	352	7.8	7.8	
2200.0	18.9	27	2.7	354	7.7	7.8	1
2202.0	20.0	18	2.7	356	7.5	7.6	1
2204.0			2.7	357	7.5	7.4	
2206.0			2.5	355	7.5	7.4	
2208.0			2.5	354	7.4	7.3	

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST	QUAL. INDEX #4
1792.0	2.2	2	1.2	352	8.0	8.1	4	
1794.0	2.0	353	1.2	351	8.0	8.1	4	
1796.0	1.3	36	1.2	350	8.0	8.1	4	
1798.0	1.5	63	1.2	351	8.1	8.3	4	
1800.0	3.5	95	1.2	354	8.4	8.5	4	
1802.0	0.2	146	1.2	355	8.4	8.4	4	
1804.0	1.1	146	1.1	354	8.4	8.3	2	
1806.0	5.9	360	1.1	352	8.4	8.4	4	
1808.0	0.8	348	1.1	352	8.4	8.4	4	
1810.0	3.3	33	1.2	349	8.3	8.3	2	
1812.0	4.5	3	1.2	347	8.3	8.4	4	
1814.0	2.9	17	1.2	348	8.4	8.5	4	
1816.0	8.4	353	1.2	349	8.4	8.5	4	
1818.0	6.7	339	1.2	349	8.5	8.5	4	
1820.0	9.3	345	1.2	348	8.5	8.5	4	
1822.0	5.2	21	1.2	349	8.5	8.5	4	
1824.0	1.7	73	1.2	349	8.5	8.5	4	
1826.0	4.2	145	1.2	348	8.4	8.4	4	
1828.0			1.2	346	8.3	8.4		
1830.0	0.9	115	1.2	343	8.3	8.4	4	
1832.0	2.4	25	1.3	343	8.3	8.3	4	
1834.0	3.8	27	1.3	345	8.3	8.3	4	
1836.0	0.8	146	1.4	350	8.4	8.2	4	
1838.0			1.5	354	8.3	8.2		
1840.0			1.5	347	8.0	8.0		
1842.0			1.5	342	8.0	8.0		
1844.0	10.7	52	1.4	340	8.2	8.1	2	
1846.0	2.7	85	1.3	339	8.3	8.3	4	
1848.0	4.8	335	1.3	339	8.4	8.5	4	
1850.0	5.1	334	1.3	339	8.5	8.6	4	
1852.0			1.3	340	8.6	8.6		
1854.0			1.3	339	8.7	8.7		
1856.0			1.3	339	8.8	8.6		
1858.0	7.3	125	1.3	338	8.7	8.6	4	
1860.0	4.9	128	1.4	336	8.7	8.6	2	
1862.0	5.4	272	1.4	337	8.8	8.6	2	
1864.0			1.5	337	8.7	8.6		
1866.0	4.9	218	1.5	337	8.7	8.6	4	
1868.0	4.9	215	1.5	337	8.8	8.6	4	
1870.0	13.4	203	1.5	337	8.8	8.7	4	
1872.0	9.7	191	1.5	336	8.7	8.7	4	
1874.0	9.4	149	1.5	336	8.7	8.7	4	
1876.0	12.1	220	1.6	337	8.7	8.8	4	
1878.0	14.0	229	1.6	337	8.8	8.9	2	
1880.0			1.5	338	8.8	9.0		

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST =4
1882.0	23.9	112	1.4	337	8.8	9.0	1
1884.0	3.2	121	1.4	337	8.8	9.0	1
1886.0	3.3	120	1.4	337	8.8	9.0	1
1888.0	27.8	95	1.4	338	8.8	9.0	1
1890.0	27.8	96	1.5	339	8.7	9.0	1
1892.0	22.1	105	1.5	340	8.7	9.0	3
1894.0	22.3	102	1.6	340	8.6	9.0	3
1896.0	5.0	139	1.7	340	8.6	8.9	1
1898.0	5.1	137	1.7	340	8.5	8.8	1
1900.0	2.6	309	1.6	339	8.4	8.9	1
1902.0	5.6	8	1.7	339	8.4	8.9	1
1904.0	10.1	304	1.7	339	8.5	8.9	1
1906.0	10.6	297	1.7	338	8.5	9.0	1
1908.0	11.5	293	1.7	338	8.5	9.0	3
1910.0	14.5	14	1.7	338	8.6	9.0	3
1912.0	14.5	12	1.6	338	8.6	9.0	3
1914.0	9.8	241	1.6	339	8.6	9.0	1
1916.0	3.3	280	1.6	340	8.6	9.1	1
1918.0	3.2	277	1.7	339	8.7	9.1	1
1920.0	7.0	256	1.7	338	8.6	9.0	1
1922.0	3.6	220	1.6	336	8.6	9.0	3
1924.0			1.6	335	8.6	9.0	
1926.0	1.5	225	1.6	335	8.6	8.9	1
1928.0			1.7	336	8.6	8.7	
1930.0	7.5	113	1.7	337	8.8	8.8	1
1932.0			1.8	338	8.7	8.9	
1934.0			1.7	338	8.6	8.9	
1936.0	7.3	112	1.7	338	8.6	8.9	1
1938.0			1.8	338	8.6	8.9	
1940.0			1.8	338	8.6	8.9	
1942.0			1.8	337	8.5	8.7	
1944.0	6.5	316	1.8	338	8.4	8.6	3
1946.0	6.9	26	1.9	338	8.5	8.6	1
1948.0	18.0	279	1.8	339	8.5	8.5	1
1950.0			1.8	339	8.3	8.3	
1952.0			1.7	340	8.2	8.4	
1954.0			1.7	341	8.2	8.4	
1956.0	5.9	287	1.7	343	8.1	8.3	1
1958.0	5.6	282	1.8	344	8.2	8.3	1
1960.0	9.1	305	1.8	343	8.3	8.5	3
1962.0	8.5	305	1.8	343	8.4	8.7	4
1964.0	3.5	171	1.8	343	8.7	8.9	2
1966.0	1.2	45	1.8	344	8.7	8.8	2
1968.0	8.3	234	1.8	344	8.3	8.4	2
1970.0			1.9	343	8.0	8.2	

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST =4
1972.0	1.8	349	1.9	345	8.1	8.2	4
1974.0	1.7	329	1.9	347	8.2	8.3	4
1976.0	3.0	205	2.0	346	8.4	8.6	4
1978.0	2.3	198	2.0	345	8.4	8.7	4
1980.0	2.3	276	1.9	345	8.3	8.7	4
1982.0	2.2	231	1.9	348	8.2	8.6	4
1984.0	1.9	208	1.9	351	8.0	8.4	4
1986.0	5.8	159	1.8	350	7.8	8.0	4
1988.0	6.6	139	1.8	351	7.8	7.8	4
1990.0	6.1	330	1.8	352	7.8	7.8	2
1992.0	3.0	323	1.8	352	7.7	7.7	2
1994.0	4.0	226	1.8	353	7.7	7.7	4
1996.0	8.1	166	1.9	352	7.6	7.8	4
1998.0	11.1	163	1.9	350	7.7	7.9	4
2000.0	2.8	185	1.9	351	7.9	8.1	4
2002.0	1.4	316	1.9	351	7.9	8.3	4
2004.0	0.8	295	1.9	353	8.1	8.3	4
2006.0	2.1	198	2.0	354	8.2	8.4	4
2008.0	2.9	200	2.0	355	8.2	8.6	4
2010.0	3.3	202	1.9	356	8.1	8.6	4
2012.0	3.2	205	1.9	356	8.2	8.8	4
2014.0	4.6	230	2.0	355	8.3	8.9	4
2016.0	3.7	234	2.0	355	8.3	9.0	4
2018.0	1.8	192	2.0	356	8.3	9.0	4
2020.0	5.0	158	2.0	355	8.1	9.0	4
2022.0	3.1	184	2.0	355	8.1	8.9	4
2024.0	2.6	185	1.9	354	8.1	8.8	4
2026.0	2.6	192	2.0	353	8.1	8.8	4
2028.0	2.4	215	2.0	354	8.1	8.8	4
2030.0	3.0	239	2.0	353	8.1	8.8	4
2032.0	1.5	210	2.0	351	8.2	8.7	3
2034.0	1.9	185	2.0	352	8.3	8.7	1
2036.0	2.1	178	2.0	354	8.3	8.7	1
2038.0			2.0	354	8.3	8.7	
2040.0	0.2	260	2.0	354	8.4	8.6	1
2042.0	2.5	121	2.0	354	8.4	8.6	1
2044.0	5.5	178	2.0	352	8.4	8.6	1
2046.0			2.1	352	8.4	8.6	
2048.0			2.1	354	8.5	8.6	
2050.0	5.9	243	2.0	354	8.5	8.6	1
2052.0	1.2	179	2.0	353	8.5	8.7	1
2054.0	2.5	154	2.0	354	8.4	8.7	1
2056.0	2.2	206	2.0	355	8.3	8.6	3
2058.0	1.3	211	2.0	355	8.3	8.7	3
2060.0	0.8	196	2.0	355	8.3	8.6	3

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DEPTH	FORMATION DIP	FORMATION DIP AZI.	BOREHOLE DEV.	BOREHOLE DEV. AZI.	BOREHOLE DIAM 1-3	BOREHOLE DIAM 2-4	QUAL. INDEX BEST =4
2062.0	3.1	123	2.0	355	8.3	8.8	2
2064.0	4.3	68	2.0	355	8.3	8.8	2
2066.0			2.0	354	8.4	8.9	
2068.0	2.0	180	2.0	354	8.5	8.8	4
2070.0	1.3	163	2.0	354	8.4	8.9	2
2072.0			2.1	354	8.3	8.9	
2074.0	3.4	205	2.1	354	8.3	8.7	2
2076.0	4.0	201	2.1	353	8.3	8.7	4
2078.0	3.5	195	2.1	354	8.3	8.7	4
2080.0	3.1	187	2.1	355	8.4	8.7	4
2082.0	5.1	198	2.1	356	8.4	8.7	4
2084.0	2.5	195	2.1	355	8.3	8.7	4
2086.0	3.6	196	2.1	355	8.3	8.7	4
2088.0	4.4	192	2.1	355	8.4	8.8	4

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