

on Continental Aztec #1
NE 74 - NE 1/4 Sec 19 - Twp 15N - R 18E 9-5
Navajo County No Permit

P-11

County Navajo

Area Holbrook

Lease No. _____

Well Name Union Oil & Continental Aztec #1

Location NE NE NE Sec 19 Twp 15N Range 18E Footage 330 FNL; 330 FEL
LS Spud Completed Total *in Devonian*
Elev 6112 Gr 6127 KB Date 9-19-43 Abandon 12-31-43 Depth 3850 *(3227)*
Approx. Lost Hole.

Contractor: Manning and Brown Cost \$ _____

Drilled by Rotary
Cable Tool

Casing Size	Depth	Cement
<u>10 3/4</u>	<u>747</u>	

6127
3850
+2277

Production Horizon _____
Initial Production D&A

REMARKS Took 131 cores
" 63 DST's see file

Elec. _____ Sample Log
Logs None run Sample Descrip.
Applic _____ Plugging _____ Completion _____ Sample Set T-40, P-21E 557
to Plug _____ Record _____ Report _____ Cores 131 - have description

Water well - accepted by _____

Bond Co. _____
& No. _____

Bond Am't \$ _____ Cancelled _____ Date _____ Organization Report _____

Filing Receipt _____ Dated _____ Well Book _____ Plat Book _____
Loc. Plat _____ Dedication _____

PERMIT NUMBER none Date Issued _____

#9-5

ARIZONA STATE LAND DEPARTMENT
Sundry Notices and Reports on Wells

Lease or Permit No.

- Notice of intention to drill.....
- Notice of intention to change plans.....
- Notice of date for test of water shut-off.....
- Report on result of test of water shut-off.....
- Notice of intention to re-drill or repair well.....
- Notice of intention to shoot.....
- Subsequent record of shooting.....
- Record of perforating casing.....
- Notice of intention to pull or otherwise alter casing.....
- X Notice of intention to abandon well March 14, 1944 X
- Subsequent report of abandonment.....
- Supplementary well history Base of Coconino sand at 740'
- 10 3/4 casing cemented at 747'. Hole drilled to 3850' at
- which depth drill pipe was stuck. Upper 2250' of drill pipe
- recovered, remainder left in hole. Cement plug placed from
- 750' to 850' and steel cap screwed into the top of the
- Surface casing.
- (Indicate above by check mark nature of report, notice or other data)

Following is a (Notice of intention to do work) on land under (permit) described as follows:
(Report of work done) (lease)

Well No. 1 Aztec Land and Cattle Company (Called Aztec # 1)
Section 19 Township 15 North Range 18 East

The well is located 330' feet (S) of the NE Corner ~~line~~ and 330' feet
(W) of the NE Corner ~~line~~ of

Section 19 T. 15 N., R 18 E.
The elevation of the derrick floor above sea level is 6125 feet

DETAILS OF PLAN OF WORK

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

Set 10 3/4", 40.5 lb. Casing through Coconino sand at 747'. It is impossible to predict expected depths to objective sands.

Approved March 29, 1944
Date

Q. C. Williams
Arizona State Land Department

Company Union Oil Company of California
By *R. J. Evans*

Geologist
Title
Address Box 301, Holbrook, Ariz.

Address
NOTE:—Reports on this form to be submitted in triplicate to the Commissioner for approval.

The permit

UNION OIL COMPANY & CONTINENTAL OIL COMPANY - Aztec No. 1

Holbrook Area
Navajo County
Arizona

Location: 330' south and 330' west of northeast corner
Section 19-15N/18E, Gila & Salt River B. & M.

Elevation: 6112' ground, 6125' derrick floor, 6127' Kelly Bushing
(All depths measured from Kelly Bushing)

Spudded: September 18, 1943
Abandoned: December 31, 1943

Total Depth: 3650'

Rotary Tools: O-3850'
Casing Record: 10-3/4" cemented 747'
No electric log survey run

Contractor: Manning & Brown

LOG

<u>INTERVAL</u>	<u>LITHOLOGIC DESCRIPTION</u>
0-15	Kelly Bushing to ground.
15-25	Sandstone, tan to buff, fine to medium grained, hard to slightly friable.
25-30	Sandstone, as above, with considerable flesh-colored.
30-40	Sandstone, as above, with considerable flesh-colored, some calcareous cementation.
40-50	Limestone, light gray, finely sandy, with streaks of above sandstone.
50-60	Limestone, as above, with streak mushy white sand 55-60'.
60-150	No returns.
150-160	Sandstone, white, with slight yellowish cast, medium grained, friable to hard.
160-230	Sandstone, as above.
230-250	No returns.
250-260	Sandstone, as above.
260-261	Shale, red, hard.
261-750	No returns. Interval drilled like sandstone. Recovered several pieces of hard, dark brown shale off the bit at 610'.
750-860	Sand, red, fine to medium grained, very silty, occasional streaks of red sandy to clayey shale. Trace of gypsum and anhydrite.
860-880	Anhydrite, white with occasional veining of red.
880-890	Sand, red, silty, with anhydrite.
890-900	Anhydrite, and gypsum, white with occasional veining of red shale.
900-910	Anhydrite and gypsum, with red sandy shale and silty sand.
910-940	Shale, gray, sandy, considerable anhydrite and gypsum with trace of red silty sand.
940-990	Sand, red, silty, fine grained, with interbeds of gray, sandy shale, anhydrite and gypsum.
990-1010	Interbedded red silty sand; gray, sandy shale; reddish-brown, fine sandy shale; gypsum and anhydrite.
1010-1180	Sand, red and reddish-brown, fine to medium grained, silty, with interbeds of gypsum and anhydrite; gray to greenish-gray shale; and occasional streaks of red, sandy to clayey shale.
1180-1190	Anhydrite, white with occasional veining of red. Trace of red sandy, shale; red silty sand and gray shale.
1190-1220	Interbedded red silty sand; reddish-brown, sandy shale; anhydrite and gypsum; and a trace of gray shale.

Coconino

Superior

No permit

- 1220-1230 Anhydrite and gypsum, with thin streaks of gray and red silty sand and reddish-brown, finely sandy shale.
- 1230-1290 Interbedded red silty sand; reddish-brown, sandy shale; occasional streak of gray shale; gypsum and anhydrite. Trace of salt from 1270' to 1280'.
- 1290-1300 Salt, crystal, nearly pure, with trace of gray shale and anhydrite.
- 1300-1340 Interbedded anhydrite and gypsum; gray and reddish-brown shale; red silty sand; and salt.
- 1340-1550 Anhydrite, white with occasional red veining. Trace of red and gray shale and salt.
- 1350-1370 Interbedded anhydrite and gypsum; gray and reddish-brown, finely sandy shale; red silty sand; and salt.
- 1370-1390 Anhydrite and gypsum, white with occasional red veining. Trace of gray and reddish-brown shale.
- 1390-1410 Salt, crystal, clear. Practically pure.
- 1410-1430 Shale, reddish-brown, fine, sandy, with interbeds of gray shale, salt, anhydrite and gypsum.
- 1430-1440 Limestone, gray to grayish-tan, very shaly, with minor amount of gray sand and anhydrite.
- 1440-1450 Shale, gray to grayish-tan, very limy, with occasional streaks of gray, shaly limestone. Minor amount of gray sand and anhydrite.
- 1450-1500 Sand, red to reddish-brown, silty, with thin interbeds of red, reddish-brown, fine, sandy shale. Trace of gypsum and anhydrite.
- 1500-1510 Interbedded red and reddish-brown, silty sand and sandy shale, salt and anhydrite.
- 1510-1560 Salt, crystal, white, nearly pure, with minor amount of red shale, sand and anhydrite.
- 1560-1610 Salt, as above, with interbeds of red and reddish-brown, silty sand and finely sandy shale.
- 1610-1690 Salt, as above, with lesser interbeds of red, reddish-brown and gray silty sand.
- 1690-1700 Limestone, gray-black, very shaly, and gray-black, very limy shale. Some stain.
- 1698-1733 Cored (See core description)
- 1730-1760 Interbedded reddish-brown, fine-grained, silty sand and red to reddish-brown shale.
- 1760-1810 Sand, reddish to reddish-brown, fine to medium grained, silty, with minor amounts of salt and red and gray sandy shale.
- 1810-1830 Salt, crystal, white, nearly pure.
- 1830-1840 Shale, gray to tannish-gray, limy, with salt, red and gray sand.
- 1840-1859 Salt, crystal, white, clear, nearly pure.
- 1850-1860 Shale, gray, very limy, and salt.
- 1860-1870 Sand, grayish-tan, silty.
- 1870-1880 Shale, grayish-tan, very limy, with minor amount of grayish-tan sand.
- 1878-1898 Cored (See core description)
- 1900-1925 Shale, gray, very limy and dolomitic. Occasional streak of gray, shaly limestone.
- 1925-2040 Sand, reddish-brown, fine-grained, silty, with thin interbeds of gray and reddish-brown, sandy shale and salt.
- 2040-2060 Salt, white, crystal, with minor amount of reddish-brown, silty sand.

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- 2060-2070 Sand, reddish-brown, fine-grained, silty, with considerable salt and minor amount of gray, very limy shale.
- 2070-2080 Salt, with interbeds of reddish-brown, silty sand.
- 2080-2100 Interbedded, reddish-brown, fine-grained, silty sand and reddish-brown, fine, sandy shale.
- 2100-2110 Salt, with some reddish-brown, fine-grained, silty sand.
- 2110-2160 Sand, red and reddish-brown, fine-grained, silty with minor amounts of salt and reddish-brown, sandy shale.
- 2160-2170 Sand, grayish-tan, silty with interbeds of gray, limy shale.
- 2170-2180 Limestone, grayish-tan, very silty, with some grayish-tan, limy shale.
- 2180-2310 Sand, reddish-brown, fine-grained, silty, with minor amounts of reddish-brown and gray, fine, sandy shale. Occasional trace of salt, anhydrite and gypsum.
- 2310-2330 Shale, gray, very limy, and reddish-brown, silty sand.
- 2330-2510 Shale, reddish-brown, very fine, sandy, and sand, reddish-brown, very shaly; some medium-grained, red sand; considerable porous anhydrite and trace of gray shale.
- 2510-2520 Sand, red and reddish-brown, silty, with considerable anhydrite and minor amount of gray shale.
- 2520-2590 Shale, reddish-brown, fine, sandy, and sand, reddish-brown, very shaly; some medium-grained, red, silty sand. Trace of gray shale and anhydrite.
- 2590-2710 Sand, red and reddish-brown, fine-grained, silty with reddish-brown and brown, fine, sandy, slightly limy shale; trace of gray shale and anhydrite.
- 2709-2717 Cored (See core description)
- 2720-2870 Shale, reddish to purplish-brown, fine, sandy, streaks of slightly limy, and red and reddish-brown, silty sand; some gray and brown shaly limestone and a trace of anhydrite.
- 2876-2911 Cored (See core description)
- 2910-3020 Shale, reddish to purplish-brown, limy, with some red and reddish-brown, silty sand. Trace of gray and brown, shaly limestone.
- 3020-3050 Sand, red and reddish-brown, silty, and shale, purplish to reddish-brown, limy. Trace of gray and brown limestone.
- 3057-3850 Cored (See core description)

Total Depth 3850'

No permit

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CONTINENTAL OIL COMPANY

Denver, Colorado
October 20, 1943

ARIZONA

Navajo County
Holbrook Area

330' SNL, 330' WEL,
Sec. 19-15N-18E

Aztec #1

Drilling red sand,
shale and gypsum
© 795 feet.
Cemented surface
pipe @ 745 feet.

Copy to:

Mr. O. C. Williams ✓
Mr. T. W. Cabeen
Mr. James E. Babbitt

The permit

February 7, 1944

Continental Oil Company
1755 Glenarm St.
Denver, Colorado

Attn: Mr. H. P. Macaulay, Supt.

Dear Mr. Macaulay:

I deeply appreciate your letter of January 26 regarding the Astec No. 1 well log. There is no particular hurry about this matter and my purpose in writing Mr. Price was to obtain an assurance of the receipt of said log when the proper time came, in order that the law be complied with any my files complete.

Thanking you for your kindness and with all good wishes, I remain

Sincerely yours,

O. C. Williams
State Land Commissioner.

OCW:bg

the permit

9-5



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CONTINENTAL OIL COMPANY

Denver 2, Colorado
January 25, 1944

RECEIVED
JAN 25 1944
STATE LAND DEPT.
OF ARIZONA

Mr. O. C. Williams
State Land Commissioner
Phoenix, Arizona

Dear Mr. Williams:

Mr. Price has referred to me your request for a log of the recently completed Aztec No. 1 well, located in the NE $\frac{1}{2}$ of Section 19, Township 15 North, Range 18 East, Navajo County, Arizona.

Unfortunately, we have not as yet been furnished with this log by the Union Oil Company of California, who are our partners in this venture, and inasmuch as the entire handling of these operations were under their jurisdiction we must await the time that they furnish us complete information regarding the well.

You may rest assured that promptly upon receipt of such information we will forward you a complete log and all data necessary to complete your records. We are very sorry that we are unable to furnish you this information at this

No permit

LC

Mr. O. C. Williams
Page 2

writing, but we will be glad to do so as quickly as possible.

Yours very truly,

H. P. Macauley
H. P. Macauley
Superintendent
Rocky Mountain Division
Land Department

HPM-0

No permit

from the file from State Land Dept. Files

Under Continental - Aztec #1 -

40' Best Mckenzi?

40 - between 60 and 150 Karab? (60-150' No returns)

between 60 and 150 to below 261 Cronins

261 - 750 No returns

750 - 3228 Supas

3228 - 3772 Penna?

3772 - 3822 Redwall

3822 - 3850 Martin

3850 - TD 3850

the permit

Union-Carbonatal

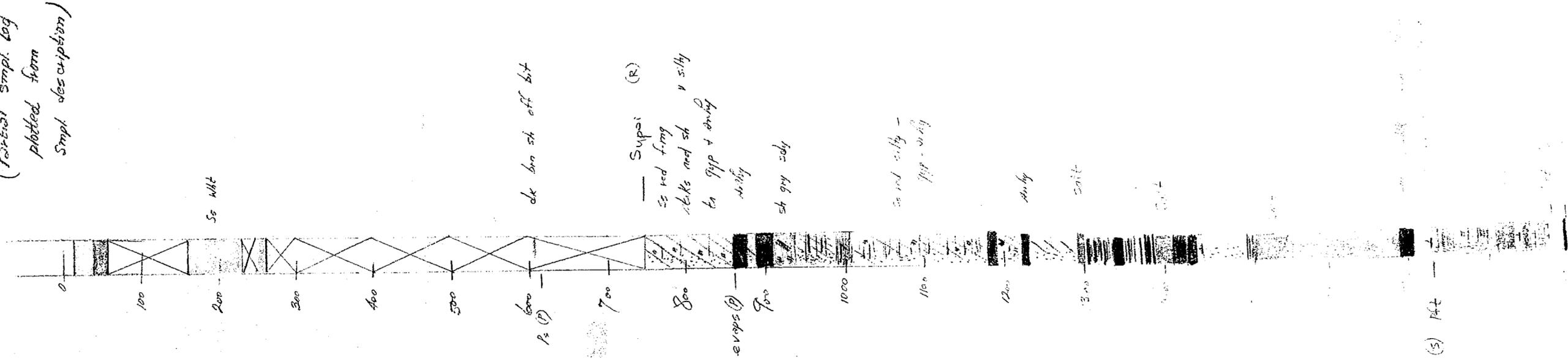
#9-5

#1 Aztec

Sec 19-15N-18E

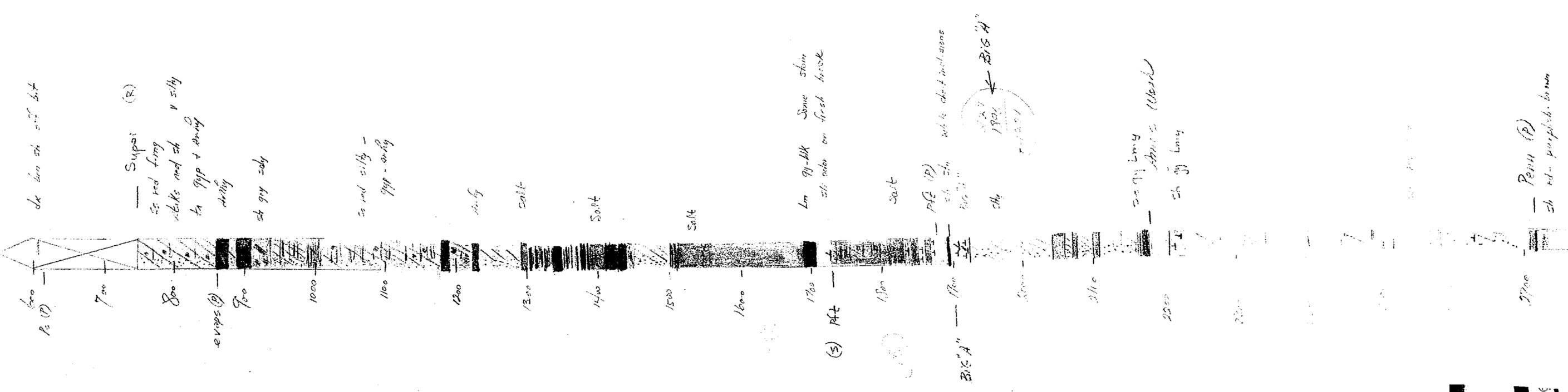
(Partial smpl. log plotted from Smpl. description)

(Mariposa Co.)



(5) 14+

UNION-CARBONATE



NO PERMISSION-
 NO PERMIT

UNION OIL COMPANY & CONTINENTAL OIL COMPANY - Astec No. 1

Holbrook Area
Navajo County
Arizona

CORE DESCRIPTION

<u>Core No.</u>	<u>Interval</u>	<u>Recovery</u>	<u>Lithologic Description</u>
1	1698-1703	5'	6" <u>Limestone</u> , gray, crystalline 1' <u>Limestone</u> , dark gray to black, very shaly, good odor, yellowish-brown cut in CCl_4 . 2' Interbedded gray, limy shale and gray crystalline limestone; fair stain and odor. Dips 2° to 4° . 1 1/2' <u>Limestone</u> , gray, hard, dense, semi-crystalline; good stain, slight odor; no porosity; calcite filled vugs ? or fossils ?
2	1703-1713	9'	3' <u>Limestone</u> , as last described. 6' <u>Shale</u> , gray, hard, dense, dolomitic ? Streaks are micromicaceous; slight odor on fresh fracture.
3	1713-1723	8 1/2'	<u>Shale</u> , blue-gray, with occasional brownish cast, hard, massive.
4	1723-1733	2 1/2'	2' 4" <u>Shale</u> , as above. 2" <u>Salt</u> , in reddish-brown, sandy shale.
5	1878-1883	3'	<u>Shale</u> , gray-brown, dolomitic or fine, sandy, abundant white and <u>blue chert inclusions</u> , quite carbonaceous; fair odor and slight stain.
6	1883-1888	3'	<u>Shale</u> , as above.
7	1888-1893	4 1/2'	<u>Shale</u> , as above.
8	1893-1898	8'	3' <u>Limestone</u> , gray-brown, shaly, dense, hard, semi-crystalline, carbonaceous; white chert inclusions; fair stain, slight odor, no porosity. 5' <u>Shale</u> , gray-brown, dolomitic or fine, sandy; abundant white and blue chert inclusions, quite carbonaceous; slight stain, slight odor.
9	2709-2715	6'	4 1/2' <u>Shale</u> , chocolate brown, massive, calcareous, with patches of crystalline lime; numerous small phosphatic ? pellets. 3" <u>Shale</u> , chocolate brown and greenish-blue, mottled, calcareous. 3" <u>Limestone shell</u> , chocolate brown and greenish-blue, mottled, hard, dense. 1' <u>Shale</u> , chocolate brown, with rare greenish-blue streaks, calcareous.
10	2715-2717	6"	3" <u>Shale</u> , as above. 3" <u>Limestone</u> , shell, chocolate brown and greenish-blue, mottled, hard, dense.

No permit

11	2876-2881	5'	<u>Shale</u> , purplish-brown, with occasional greenish-gray streaks, calcareous, massive, with occasional inclusions of gray to white crystalline lime.
12	2881-2886	2½'	<u>Shale</u> , as above.
13	2886-2896	10'	<u>Shale</u> , as above, with increasing amount of lime inclusions.
14	2896-2905	2'	<u>Shale</u> , as above.
15	2905-2911	6'	<u>Shale</u> , as above.
16	3057-3066	8½'	<u>Shale</u> , reddish-brown to purplish-brown, with occasional greenish-gray, limy streaks; shale is calcareous firm to crumbly, with occasional small scattered limestone pebbles.
17	3066-3075	7½'	<u>Dolomite</u> , reddish-brown, with occasional seams and patches of gray and greenish-gray lime; dolomite is shaly, very finely granular, and contains rare, small limestone pebbles.
18	3075-3082	5'	<u>Shale</u> , purplish-brown, with occasional greenish-gray streaks, limy, dolomitic, with occasional scattered pebbles.
19	3082-3089	6'	<u>Dolomite</u> , reddish-brown, shaly, with streaks and inclusions of gray and greenish-gray limestone; mottled.
20	3089-3095	4'	<u>Dolomite</u> , as above, with less limestone.
21	3096-3106	9'	<u>Dolomite</u> , as above, with only rare inclusions of gray and greenish-gray limestone.
22	3106-3112	7'	<u>Shale</u> , purplish-brown to bluish-brown, dolomitic, crumbly, with rare streaks and inclusions of greenish-gray limestone; numerous small scattered limestone pebbles.
23	3112-3119	7'	<u>Shale</u> , as above.
24	3119-3129	7½'	1' <u>shale</u> , as above. 6½' <u>interbedded blue-gray, dense limestone and reddish-brown, dense dolomite; dolomite shaly in spots.</u>
25	3129-3138	2½'	<u>Dolomite</u> , reddish-brown, with thin streaks greenish-gray, shaly limestone; dolomite somewhat shaly.
26	3138-3140	1½'	<u>Shale</u> , blue-gray, dolomitic, firm to crumbly, rare pebbles.

27	3140-3147	7'	1' <u>Shale</u> , blue-gray, with brown mottling, dolomitic, crumbly, rare small pebbles. 6' <u>Shale</u> , chocolate brown, massive, dolomitic, with gray nodular, cherty limestone inclusions; rare small pebbles; occasional slickensides.
28	3147-3157	4'	6" <u>Shale</u> , as above. 3 1/2' <u>Shale</u> , gray, with brownish mottling, clayey, occasional cherty limestone inclusions.
29	3157-3159	2'	<u>Shale</u> , chocolate brown, with mottling of gray, crumbly, with occasional small pebbles.
30	3159-3168	7'	1' <u>Shale</u> , as above. 6' <u>Dolomite</u> , reddish-brown, massive, hard, granular, with numerous inclusions of gray and greenish-gray nodular limestone.
31	3168-3178	10'	<u>Dolomite</u> , as above, with less limestone inclusions.
32	3178-3187	9'	1 1/2' <u>Dolomite</u> , as above. 3' <u>Sandstone</u> , pink to red, with thin gray interbeds; hard, tight, fine-grained. Dip 4°. 4 1/2' <u>Dolomite</u> , reddish-brown, massive, hard, tight, granular, with gray, greenish-gray, white, nodular limestone inclusions; rare thin streaks of reddish-brown, slickensided shale.
33	3187-3190	3'	<u>Dolomite</u> , as above.
34	3190-3195	1 1/2'	<u>Dolomite</u> , as above.
35	3195-3201	5 1/2'	1 1/2' <u>shale</u> , gray to gray-brown, limy and dolomitic. 4' <u>dolomite</u> , reddish-brown, with gray nodular limestone inclusions. Dolomite hard, tight, finely granular.
36	3201-3209	6'	<u>Dolomite</u> , as above.
37	3209-3219	9'	5 1/2' <u>Dolomite</u> , as above. 1 1/2' <u>Interbedded gray-brown dolomite and gray limestone</u> . 2' <u>Limestone</u> , gray, crystalline to cherty. 1' <u>Shale</u> , reddish-brown, clayey, with streaks of gray. 1' <u>Limestone</u> , gray to gray-brown, shale inclusions, nodular or pebbly.
38	3219-3228	9'	<u>Interbedded, variegated reddish-brown shale; gray to pinkish-gray limestone; and reddish-brown dolomite.</u>
39	3228-3238	10'	3' <u>Shale</u> , reddish-brown, with streaks of gray, dolomitic, with inclusions of gray limestone. 7' <u>Shale</u> , gray-brown, becoming quite gray in lower 5', dolomitic, slightly limy, very fossiliferous.

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Naco?*

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40	3238-3248	10'	<u>Shale</u> , gray to black, clayey, firm to crumbly, with interbeds of gray, gray-brown and greenish-gray shaly, silty, <u>Crinoidal limestone</u> ; entire interval very fossiliferous.
41	3248-3260	2'	<u>Shale</u> , gray to gray-brown, dolomitic, slightly limy, quite fossiliferous.
42	3260-3260	10'	<u>Shale</u> , as above, with streak of reddish-brown shale from 3252' to 3254'.
43	3260-3269	9'	<u>Shale</u> , as above, becoming somewhat more dolomitic; slight indication of stain.
44	3269-3279	9 $\frac{1}{2}$ '	<u>Shale</u> , gray to gray-brown, dolomitic, slightly limy, with thin streaks gray to greenish-gray, oolitic, cherty limestone; numerous fossils.
45	3279-3289	10'	<u>Shale</u> , as above, with streaks which are quite dolomitic and limy.
46	3289-3295	6'	<u>Shale</u> , gray to gray-brown, quite limy and slightly dolomitic; slight staining along bedding planes.
47	3295-3305	4'	<u>Shale</u> , as above, increasing in stain.
48	3305-3310	5'	<u>Shale</u> , as above, with considerable stain in more limy and dolomitic streaks Fossils.
49	3310-3318	8'	<u>Shale</u> , gray, dolomitic, limy, spotty staining.
50	3318-3328	10'	<u>Shale</u> , as above, good <u>Productus</u> and crinoid stems; slight stain; looks like Pennsylvania fossils.
51	3328-3332	4'	<u>Dolomite</u> , gray to dark gray, limy, shaly, finely granular, hard, tight, carbonaceous; no stain.
52	3332-3339	7'	<u>Dolomite</u> , as above, becoming increasingly shaly and with large patches of pyrite in lower 1'; highly fossiliferous; <u>Productus</u> , etc.
53	3339-3349	8'	<u>Shale</u> , dark gray, dolomitic, limy, clayey, crumbly, abundant carbonized wood.
54	3349-3357	10'	<u>Shale</u> , light to dark gray, firm, very dolomitic and limy, carbonaceous, finely disseminated pyrite; rare fossils.
55	3357-3367	10'	<u>Shale</u> , as above, with streaks of highly carbonaceous dolomite.

56	3367-3375	4½'	1' <u>Dolomite</u> , gray, very shaly, slightly limy, with scattered small pebbles. 1' <u>Dolomite</u> , as above, with abundant white and gray, small limestone pebbles; practically a breccia. 2' <u>Dolomite</u> , gray, shaly, limy. 6" <u>Shale</u> , gray, greenish-gray, brown, clayey, slick; small pebbles.
57	3375-3382	2'	<u>Shale</u> , bluish-gray and brownish-gray, crumbly; numerous small pebbles.
58	3382-3386	1'	<u>Shale</u> , reddish-brown, very conglomeratic; pebbles of limestone and chert; looks like a basal conglomerate.
59	3386-3395	8½'	3" <u>Shale</u> , as above, highly slickensided. 8'5" <u>Shale</u> , reddish-brown, with streaks of gray, dolomitic, limy, slight staining in dolomitic patches.
60	3395-3405	7½'	<u>Shale</u> , as above, with slight staining in dolomitic patches.
61	3405-3408	2"	<u>Limestone</u> , gray, hard, dense, crystalline.
62	3408-3416	5'	<u>Dolomite</u> , reddish-brown, to gray-brown, hard, dense, shaly, slightly limy, very slight streaked staining in lower portion.
63	3416-3426	8½'	5' Interbedded gray and reddish-brown <u>dolomite</u> and <u>limestone</u> , very fossiliferous, considerable staining in more porous streaks. 1' <u>Dolomite</u> , dark, reddish-brown, shaly, hard, tight; scattered small pebbles. 2½' <u>Shale</u> , reddish-brown, very clayey.
64	3426-3435	9'	<u>Dolomite</u> , reddish-brown to brown, with streaks of gray, massive, tight, dense, shaly; streaks quite limy; few small scattered pebbles.
65	3435-3445	10'	1½' <u>Dolomite</u> , as above, becoming very shaly in lower portion; very conglomeratic. 8½' Interbedded gray, dense <u>limestone</u> , reddish-brown shaly, <u>dolomite</u> , and reddish-brown, limy, dolomitic <u>shale</u> .
66	3445-3454	9'	4' <u>Shale</u> , reddish-brown, dolomitic, slightly limy, scattered pebbles with streaks very conglomeratic; firm to crumbly. 4½' <u>Dolomite</u> , reddish-brown, with streaks of gray; shaly, limy, conglomeratic. 6" <u>Shale</u> , as last described, very conglomeratic.

Notes

67	3454-3464	10'	6" <u>Shale</u> , as above. 5' <u>Dolomite</u> , reddish-brown, with abundant gray, nodular limestone inclusions; hard, dense, massive; scattered pebbles. 4½' <u>Dolomite</u> , gray to black, with streaks of gray to greenish-gray, nodular limestone; dolomite is shaly, massive, tight, dense.
68	3464-3474	10'	3' <u>Shale</u> , black, occasional purplish cast, with gray and greenish-gray, nodular limestone inclusions. 7' <u>Sandstone</u> , gray to pinkish-gray, fine-grained, hard, tight, calcareous, with thin streaks of reddish-brown, dolomitic shale in lower 1½'
69	3474-3483	7½'	7' <u>Sandstone</u> , as above, though increased interbeds of reddish-brown, dolomitic shale. 6" <u>Shale</u> , gray to greenish-gray, with streaks of brown; dolomitic, slightly calcareous, occasional small pebbles.
70	3483-3487	4'	1' <u>Shale</u> , as above, increasing in brownish cast. 3' <u>Shale</u> , reddish-brown to purplish-brown, massive, dolomitic, slightly calcareous; rare small pebbles.
71	3487-3495	1½'	<u>Shale</u> , as above.
72	3495-3500	4½'	<u>Shale</u> , as above.
73	3500-3505	6"	<u>Shale</u> , as above, with streak gray-brown shale.
74	3505-3510	5'	<u>Shale</u> , as above, with increase in pebbles and considerable slickensides.
75	3510-3518	8'	1½' <u>Shale</u> , as above, pebbly to conglomeratic; numerous slickensides. 6" <u>Limestone</u> , gray to pinkish-gray, nodular, dense. 5' <u>Dolomite</u> , reddish-brown, with streaks of gray, x hard, tight, dense, limy, shaly; occasional pebbles. 1' <u>Shale</u> , reddish-brown to purplish-brown, dolomitic, calcareous, crumbly; occasional small pebbles; considerable slickensides.
76	3518-3524	5'	<u>Shale</u> , as above; pebbles and slickensides.
77	3524-3527	2½'	<u>Shale</u> , as above; pebbles and slickensides.
78	3527-3533	6'	5' <u>Shale</u> , as above; pebbles and slickensides. 1' <u>Limestone and dolomite rubble conglomerate</u> ; gray, green, greenish-gray, reddish-brown, shaly, very pebbly; ill-sorted.
79	3533-3542	9'	6" <u>Conglomerate</u> , as above. 8½' <u>Limestone</u> , reddish-brown, with streaks of gray; dolomitic, hard, dense, with shale and pebble filled cavity at 3537'.

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80	3542-3550	7'	6" <u>Limestone</u> , as above, with occasional small pebbles. 1' <u>Shale</u> , reddish-brown, clayey, limy, dolomitic, with numerous small pebbles.
81	3550-3560	10'	6" <u>Shale</u> , as above, slight purplish cast; pebbly. 1½' <u>Limestone</u> , greenish-gray, and pinkish-brown, hard, dense, tight. 8' <u>Dolomite</u> , reddish-brown, with streaks of gray, hard, tight, dense, limy.
82	3560-3570	7'	<u>Dolomite</u> , as above, with thin streaks of gray limestone.
83	3570-3575	5'	6" <u>Dolomite</u> , as above. 4½' <u>Limestone</u> , gray and gray-brown, hard, tight, dense, dolomitic, becoming quite gray-black in lower 4".
84	3575-3584	9'	3' <u>Limestone</u> , gray-black, hard, tight, dense, dolomitic and shaly. 6' <u>Limestone</u> , as above, though extremely fossiliferous; Crinoids and Composita most common; numerous small bright orange-red chert inclusions.
85	3584-3593	9'	6" <u>Fossiliferous limestone</u> , as above; Lycopod fragments, Composita, Crinoid stems; red chert inclusions. 8½' <u>Interbedded gray and pinkish-gray limestone and dolomite</u> , hard, tight, dense.
86	3593-3600	7'	<u>Limestone</u> , gray and pinkish-gray, shaly, dolomitic, hard, tight, dense.
87	3600-3610	10'	9' <u>Limestone</u> , gray, shaly, dolomitic, semi-crystalline, hard, tight, dense. 1' <u>Limestone</u> , white to gray, crystalline, fair porosity, highly fossiliferous; corals, brachiopods, etc.; very slight amount of dry, black, asphaltic material along seams.
88	3610-3612	1½'	<u>Limestone</u> , as above, with abundant fossils and small amount of asphaltic material.
89	3612-3622	10'	<u>Limestone</u> , gray-white, to gray-brown, shaly, extremely fossiliferous; slight amount of stain in a few of more porous spots.
90	3622-3630	8'	1' <u>Limestone</u> , as above. 7' <u>Shale</u> , reddish-brown, clayey, limy, dolomitic; very minor amount of staining in limy patches in lower 1'.

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91	3630-3638	8'	4' <u>Shale</u> , as above, less clayey and more limy and dolomitic, with streaks of gray and gray-brown dolomite and limestone. Dip 4°. 4' <u>Interbedded gray and reddish-brown dolomite and limestone</u> , hard, tight, dense.
92	3638-3646	8'	<u>Interbedded limestone and dolomite</u> , as above; numerous calcite-filled vertical fractures.
93	3646-3653	7'	1' <u>Dolomite</u> , reddish-brown, limy, hard, tight, dense; rare small pebbles. 6' <u>Shale</u> , purplish-brown, dolomitic, limy; numerous small scattered pebbles.
94	3653-3655	1½'	<u>Dolomite</u> , reddish-brown, with minor streaks of gray; limy, hard, tight, dense.
95	3655-3665	6'	<u>Dolomite</u> , as above, with thin streaks of gray chert; lower ½' very shaly.
96	3665-3673	4½'	2½' <u>Limestone</u> , gray; gray-brown, reddish-brown, hard, tight, dense; highly fossiliferous, mostly brachiopods; slight staining along more porous streaks; small amount of dry, black, asphaltic residue. 2' <u>Sandstone</u> , gray, red, pinkish-gray, fine-grained, quartzitic.
97	3673-3680	4½'	2' <u>Sandstone</u> , interbedded, as above, and gray to reddish-brown, fossiliferous, crystalline <u>limestone</u> ; slight odor and slight stain in limestone. 2½' <u>Limestone</u> , gray and reddish-brown, crystalline, very fossiliferous; fair porosity, slight odor and a very few gas bubbles and slight stain.
98	3680-3685	7'	1' <u>Limestone</u> , gray to white, crystalline, very fossiliferous, fair porosity, slight odor, slight stain, slight amount of black, dry, asphaltic residue. 4' <u>Dolomite</u> , reddish-brown, hard, tight, dense; minor amount of gray, cherty, limestone inclusions. 2' <u>Limestone</u> , gray, greenish-gray, purplish-gray, pinkish-gray, crystalline to cherty, hard, tight, dense, fossiliferous; very slight spotty staining in more porous streaks.
99	3685-3690	3'	<u>Limestone</u> , as above, with streaks of purplish dolomite.
100	3690-3692	1'	<u>Sandstone</u> , purple to purplish-gray, fine-grained, dolomitic, quartzitic.
101	3692-3700	8'	<u>Dolomite</u> , purplish-gray, sandy, with abundant white, gray and greenish-gray, cherty to semi-crystalline limestone nodules.

Notes

the permit

102	3700-3708	8'	$2\frac{1}{2}'$ Dolomite, as above. $5\frac{1}{2}'$ Limestone, gray, grayish-white, greenish-gray, purplish-gray; cherty to semi-crystalline; numerous inclusions of purplish-gray, dolomitic shale; numerous fossils; slight odor.
103	3708-3718	9'	Dolomite, purplish-gray, with large nodules of gray and white, hard, dense chert; rare small pebbles in dolomite; fossiliferous.
104	3718-3722	3'	Dolomite, as above, with numerous Spirifers, some replaced with red chert.
105	3722-3727	5'	Dolomite, as above, with streaks purplish, pebbly, dolomitic shale.
106	3727-3734	6'	1' Shale, purplish-brown, with green blotches, dolomitic. 2' Dolomite, purplish-brown, green, purplish-gray, with nodules of gray and greenish-gray, cherty, limestone; very mottled. 3' Dolomite, reddish-brown, with blotches of green; very shaly, pebbly; occasional slickensides.
107	3734-3739	6'	$4\frac{1}{2}'$ Dolomite, as above, becoming increasingly sandy in lower portion. 6" Sandstone, gray-brown, to reddish-brown, medium to coarse grained, hard, sharp, quartzitic.
108	3739-3747	1'	Sandstone, as above.
109	3747-3750	$1\frac{1}{2}'$	Sandstone, reddish-brown, coarse to pebbly, with streaks of reddish-brown, dolomitic shale; quite ill-sorted.
110	3750-3754	$2\frac{1}{2}'$	$2\frac{3}{4}"$ Sandstone, as above, becoming very coarse and quartzitic in lower 6". 3" Clay, pinkish and purplish, with blotches of green and yellow; slick, looks like derived from weathering feldspars; yellow blotches look like weathered mica.
111	3754-3757	$1\frac{1}{2}'$	Clay, as above, with minor amount of chert veining; looks like it contains highly weathered feldspar crystals; found a Trilobite in a chert nodule in lower part of core.
112	3757-3759	2'	Clay, as above, with few cherty to crystalline limestone inclusions; quite pebbly throughout; slight yellow stain in crystalline limestone.
113	3759-3763	$3\frac{1}{2}'$	Clay, as above, though slightly darker in color; very pebbly; chert inclusions.

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114	3763-3767	2½'	<u>Clay</u> , as above, though reddish-brown, with a few chert and crystalline limestone inclusions; may be slight stain in crystalline streaks.
115	3767-3772	4'	<u>Shale</u> , reddish-brown, dolomitic, slick; looks like has undergone some metamorphism; contains thin gray nodular chert and crystalline limestone inclusions.
116	3772-3775	2½'	<u>Limestone</u> , gray, cherty to semi-crystalline, hard, dense, tight, with thin, slick, reddish-brown, shale partings.
117	3776-3785	2'	<u>Limestone</u> , gray, cherty to semi-crystalline, hard, tight, dense; occasional thin red, slick shale partings; minor red chert veining.
118	3785-3790	1½'	<u>Limestone</u> , as above, with occasional patches rounded quartz grains.
119	3790-3795	2'	<u>Dolomite</u> , gray to greenish-yellow, with streaks of red; cherty in spots; scattered, rounded, imbedded quartz grains.
120	3795-3800	5'	3½' <u>Dolomite</u> , as above, with thin red-brown, pink, and green shale partings; 2" zone of imbedded, rounded quartz and chert grains and small pebbles at 3797'; fair spotty staining along more porous fracture zones and in vuggy spots. 1½' <u>Dolomite</u> , purplish to reddish-brown, granular, with occasional thin red shale streaks; fair, though very spotty, stain.
121	3800-3805	5'	<u>Dolomite</u> , as above, though quite shaly and more finely granular.
122	3805-3812	7'	6" <u>Dolomite</u> , as above. 2" <u>Dolomite</u> , copper green, cherty, vuggy with dry, black, asphaltic residue. 4'4" <u>Dolomite</u> , gray, purplish-gray, granular, fair porosity in vuggy spots; numerous irregular partings and splotches of red shale; green shale parting in lower 2"; slight staining in vuggy spots. 2' <u>Dolomite</u> , pink to salmon-colored, sucrose, spotty porosity, quite limy; occasional irregular, thin, red shale partings; imprint of fossil, looks like a Spirifer or Chonetes.
123	3812-3817	5'	3' <u>Dolomite</u> , pink, pinkish-gray, sucrose, numerous holes and cavities; several very thin, serrated streaks of pink, red and bright green slick shale; numerous large, rounded, frosted, imbedded quartz grains; a number of very small fossils.

(cont'd on next page)

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No permit

1 1/2' Shale, reddish-brown, dolomitic, with patches of large, rounded, frosted, imbedded quartz grains; one thin, bright green, slick shale parting.
6" Sandstone, pinkish-red, coarse-grained, mostly well rounded quartz grains; quartzitic, sharp.

124 3817-3822

4'

2' Sandstone, as above, with occasional shaly streak.
2' Shale, reddish-brown, with patches of rounded, imbedded, quartz grains; some of the shale is slick and may be slightly metamorphosed.

Redwell
Martin

125 3822-3827

5'

Dolomite, pink, crystalline; quartzitic and arkosic in spots.

126 3827-3832

5'

Sandstone, pink to purplish-gray, medium to coarse, grained; quartzitic and arkosic; thin streaks of bright green and reddish-brown slick shale.

127 3832-3837

4 1/2'

Sandstone, as above, with thin porous dolomite streaks.

128 3837-3840

3'

Sandstone, as above.

129 3840-3843

3'

Sandstone, as above, with thin serrated, bright green and reddish-brown, slick shale streaks.

130 3843-3846

3'

Dolomite, gray to purplish-gray; numerous holes and cavities; thin serrated streaks of red and bright green slick shale; streaks with rounded, imbedded quartz grains; streaks very quartzitic.

131 3846-3850

3'

Dolomite, as above, with streaks of bright green and greenish-gray; very sandy and quartzitic.

TOTAL DEPTH 3850'

61 12
3822
2290

No permit

UNION OIL COMPANY & CONTINENTAL OIL COMPANY - Aztec #1
Section 19-15N/18E

Holbrook Area
Navajo County
Arizona

H I S T O R Y

- Sept. 18, 1943 Spudded in well at 3:00 P.M., drilled 14" hole to 42 feet and lost circulation.
- Sept. 27, 1943 Drilled ahead to 261' with intermittent returns. Lost circulation about ten times since spudding; partially regained with Gel-Flake and Fibrotex. Had to cement hole each time on losing circulation; from 224' to 240' cemented six separate times.
- Oct. 13, 1943 Drilled from 261' to 750' without any returns. Cemented well at intervals at least nine separate times in attempt to regain circulation. Stuck reamer at 730' while reaming without returns, and recovered. Hole is 14" to 730' and 12-3/4" from 730' to 747'.
- Oct. 14, 1943 At total depth of 750' cemented 10-3/4" casing at 747'. Had difficulties in keeping any cement in hole. Finally able to get some to stack up behind casing.
- Oct. 23, 1943 Cored and drilled ahead to 2312', lost circulation. Left drill collar and bit in hole, and recovered. Unable to regain circulation and cemented.
- Nov. 12, 1943 Total depth 3190'. Between 2312' and 3190' lost circulation ten times. Regained with Fibrotex three times. Cemented hole seven times. On cleaning out hole after cementing jobs frequently find no cement in hole.
- Nov. 14, 1943 TEST NO. 1 Ran Halliburton formation tester 3156-3190', open 1 hour, faint steady blow of air; recovered 190' of slightly salty, muddy water.
- Nov. 17, 1943 Cored ahead to 3332'. Lost circulation at 3200'. Recemented. Found no cement in hole.
- TEST NO. 2 Ran Halliburton formation tester 3280-3332', open 30 minutes, packer started to leak at end of 20 minutes, light steady blow of air; recovered 930' of mud in drill pipe.
- Nov. 28, 1943 Cored ahead to 3690'. Lost circulation three times since 3332'. Cemented each time.
- TEST NO. 3 Ran Halliburton formation tester 3660-3690', open 45 minutes, faint steady blow of air; recovered 570' of slightly salty, watery mud.
- Nov. 30, 1943 Cored ahead to 3775'.

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- Dec. 1, 1943 Plugged to 1935'. Plug crept. Replugged to 1935'. Ran Halliburton formation tester 1875-1935', no test, packer failed.
- Dec. 13, 1943 Cored ahead to 3849'. Lost returns at 3812' and cemented three times. Unsuccessful with cotton seed hulls. Power failed for 30 minutes. Stuck drill pipe on bottom.
- Dec. 14, 1943 Spotted few barrels of oil. Unable to move pipe.
- Dec. 26, 1943 Made inside out on drill pipe at 3750' and 2275'. Pulled from 2275'.
- Dec. 31, 1943 Left balance of drill pipe in hole. Plugged and abandoned December 31, 1943.

History made up from daily telegrams
by Harvey W. Lee, Exploration Dept.,
Union Oil Company, Los Angeles
March 21, 1944

See permit

UNION OIL COMPANY & CONTINENTAL OIL COMPANY - AZTEC NO. 1

Holbrook Area
Navajo County
Arizona

Location: 330' south and 330' west of northeast corner
Section 19-15N., 18 E., Gila & Salt River B. & M.
Elevation: 6112' ground, 6125' derrick floor, 6127' Kelly Bushing
(All depths measured from Kelly Bushing)

Spudded: September 19, 1943
Abandoned: December 31, 1943

Total Depth: 3850'

Rotary Tools: 0-3850'
Casing Record: 1C-3/4" cemented 747'
No electric log survey run

Contractors: Manning & Brown

Took 131 CORES
Took 3 DST's } all file

LOG

<u>INTERVAL</u>	<u>LITHOLOGIC DESCRIPTION</u>
0-15	Kelly Bushing to ground.
15-25	Sandstone, tan to buff, fine to medium grained, hard to slightly friable.
25-30	Sandstone, as above, with considerable fresh-colored.
30-40	Sandstone, as above, with considerable flesh-colored, some calcareous cementation.
40-50	Limestone, light gray, finely sandy, with streaks of above sandstone.
50-60	Limestone, as above, with streak mushy white sand 59-60'.
60-150	No returns.
150-160	Sandstone, white, with slight yellowish cast, medium grained, friable to hard.
160-230	Sandstone, as above.
230-250	No returns.
250-260	Sandstone, as above.
260-261	Shale, red, hard.
261-750	No returns. Interval drilled like sandstone. Recovered several pieces of hard, dark brown shale off the bit at 610'.
750-860	Sand, red, fine to medium grained, very silty, occasional streaks of red sandy to clayey shale. Trace of gypsum and anhydrite.
860-880	Anhydrite, white with occasional veining of red.
880-890	Sand, red, silty, with anhydrite.
890-900	Anhydrite, and gypsum, white with occasional veining of red shale.
900-910	Anhydrite and gypsum, with red sandy shale and silty sand.
910-940	Shale, gray, sandy, considerable anhydrite and gypsum with trace of red silty sand.
940-990	Sand, red, silty, fine grained, with interbeds of gray, sandy shale, anhydrite and gypsum.
990-1010	Interbedded red silty sand; gray sandy shale; reddish-brown, fine sandy shale; gypsum and anhydrite.
1010-1180	Sand, red and reddish-brown, fine to medium grained, silty, with interbeds of gypsum and anhydrite; gray to greenish-gray shale; and occasional streaks of red, sandy to clayey shale.
1180-1190	Anhydrite, white with occasional veining of red. Trace of red sandy, shale; red silty sand and gray shale.
1190-1220	Interbedded red silty sand; reddish-brown, sandy shale; anhydrite and gypsum; and a trace of gray shale.
1220-1230	Anhydrite and gypsum, with thin streaks of gray and red silty sand and reddish-brown, finely sandy shale.
1230-1290	Interbedded red silty sand; reddish-brown, sandy shale; occasional streak of gray shale; gypsum and anhydrite. Trace of salt from 1270' to 1280'.
1290-1300	Salt, crystal, nearly pure, with trace of gray shale and anhydrite.
1300-1340	Interbedded anhydrite and gypsum; gray and reddish-brown shale; red silty sand; and salt.
1340-1350	Anhydrite, white with occasional red veining. Trace of red and gray shale and salt.
1350-1370	Interbedded anhydrite and gypsum; gray and reddish-brown, finely sandy shale; red silty sand; and salt.
1370-1390	Anhydrite and gypsum, white with occasional red veining. Trace of gray and reddish-brown shale.
1390-1410	Salt, crystal, clear. Practically pure.
1410-1430	Shale, reddish-brown, fine, sandy, with interbeds of gray shale, salt, anhydrite and gypsum.
1430-1440	Limestone, gray to grayish-tan, very shaly, with minor amount of gray sand and anhydrite.

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UNION OIL COMPANY & CONTINENTAL OIL COMPANY - AZTEC NO. 1
Sec. 19, T. 15 N., R. 18 E.

Navajo County

1440-1450	Shale, gray to grayish-tan, very limy, with occasional streaks of gray, shaly limestone. Minor amount of gray sand and anhydrite.
1450-1500	Sand, red to reddish-brown, silty, with thin interbeds of red, reddish-brown, fine, sandy shale. Trace of gypsum and anhydrite.
1500-1510	Interbedded red and reddish-brown, silty sand and sandy shale, salt and anhydrite.
1510-1560	Salt, crystal, white, nearly pure, with minor amount of red shale, sand and anhydrite.
1560-1610	Salt, as above, with interbeds of red and reddish-brown, silty sand and finely sandy shale.
1610-1690	Salt, as above, with lesser interbeds of red, reddish-brown and gray silty sand.
1690-1700	Limestone, gray-black, very shaly, and gray-black, very limy shale. Some stain.
1698-1733	Cored (See core description)
1730-1760	Interbedded reddish-brown, fine-grained, silty sand and red to reddish-brown shale.
1760-1810	Sand, reddish to reddish-brown, fine to medium grained, silty, with minor amounts of salt and red and gray sandy shale.
1810-1830	Salt, crystal, white, nearly pure.
1830-1840	Shale, gray to tannish-gray, limy, with salt, red and gray sand.
1840-1850	Salt, crystal, white, clear, nearly pure.
1850-1860	Shale, gray, very limy, and salt.
1860-1870	Sand, grayish-tan, silty.
1870-1880	Shale, grayish-tan, very limy, with minor amount of grayish-tan sand.
1878-1898	Cored (See core description)
1900-1925	Shale, gray, very limy and dolomitic. Occasional streak of gray, shaly limestone.
1925-2040	Sand, reddish-brown, fine-grained, silty, with thin interbeds of gray and reddish-brown, sandy shale and salt.
2040-2060	Salt, white, crystal, with minor amount of reddish-brown, silty sand.
2060-2070	Sand, reddish-brown, fine-grained, silty, with considerable salt and minor amount of gray, very limy shale.
2070-2080	Salt, with interbeds of reddish-brown, silty sand.
2080-2100	Interbedded, reddish-brown, fine-grained, silty sand and reddish-brown, fine, sandy shale.
2100-2110	Salt, with some reddish-brown, fine-grained, silty sand.
2110-2160	Sand, red and reddish-brown, fine-grained, silty with minor amounts of salt and reddish-brown, sandy shale.
2160-2170	Sand, grayish-tan, silty with interbeds of gray, limy shale.
2170-2180	Limestone, grayish-tan, very silty, with some grayish-tan, limy shale.
2180-2310	Sand, reddish-brown, fine-grained, silty, with minor amounts of reddish-brown and gray, fine, sandy shale. Occasional trace of salt, anhydrite and gypsum.
2310-2330	Shale, gray, very limy, and reddish-brown, silty sand.
2330-2510	Shale, reddish-brown, very fine, sandy, and sand, reddish-brown, very shaly; some medium-grained, red sand; considerable porous anhydrite and trace of gray shale.
2510-2520	Sand, red and reddish-brown, silty, with considerable anhydrite and minor amount of gray shale.
2520-2590	Shale, reddish-brown, fine, sandy, and sand, reddish-brown, very shaly; some medium-grained, red, silty sand; trace of gray shale and anhydrite.
2590-2710	Sand, red and reddish-brown, fine-grained, silty with reddish-brown and brown, fine, sandy, slightly limy shale; trace of gray shale and anhydrite.
2709-2717	Cored (See core description)
2720-2870	Shale, reddish to purplish-brown, fine, sandy, streaks of slightly limy, and red and reddish-brown, silty sand; some gray and brown shaly limestone and a trace of anhydrite.
2876-2911	Cored (See core description)
2910-3020	Shale, reddish to purplish-brown, limy, with some red and reddish-brown, silty sand. Trace of gray and brown, shaly limestone.
3020-3050	Sand, red and reddish-brown, silty, and shale, purplish to reddish-brown, limy. Trace of gray and brown limestone.
3057-3850	Cored (See core description)

Total Depth: 3850'

UNION OIL COMPANY & CONTINENTAL OIL COMPANY - AZTEC NO. 1 Navajo County
 Sec. 19, T. 15 N., R. 18 E.

CORE DESCRIPTION

<u>Core No.</u>	<u>Interval</u>	<u>Recovery</u>	<u>Lithologic Description</u>
1	1698-1703	5'	6" Limestone, gray, crystalline 1' Limestone, dark gray to black, very shaly, good odor, yellowish-brown cut in CCl_4 . 2' Interbedded gray, limy shale and gray crystalline limestone; fair stain and odor. Dipe 2° to 4° . 1½' Limestone, gray, hard, dense, semi-crystalline; good stain, slight odor; no porosity; calcite filled vugs ? or fossils ?
2	1703-1713	9'	3' Limestone, as last described. 6' Shale, gray, hard, dense, dolomitic ? Streaks are micromicaceous; slight odor on fresh fracture.
3	1713-1723	8½'	Shale, blue-gray, with occasional brownish cast, hard, massive.
4	1723-1733	2½'	2¼" Shale, as above. 2" Salt, in reddish-brown, sandy shale.
5	1878-1883	3'	Shale, gray-brown, dolomitic or fine, sandy, abundant white and blue chert inclusions; quite carbonaceous; fair odor and slight stain.
6	1883-1888	3'	Shale, as above.
7	1888-1893	4½'	Shale, as above.
8	1893-1898	8'	3' Limestone, gray-brown, shaly, dense, hard, semi-crystalline, carbonaceous; white chert inclusions; fair stain, slight odor, no porosity. 5' Shale, gray-brown, dolomitic or fine, sandy; abundant white and blue chert inclusions, quite carbonaceous; slight stain, slight odor.
9	2709-2715	6'	4½' Shale, chocolate brown, massive, calcareous, with patches of crystalline lime; numerous small phosphatic ? pellets. 3" Shale, chocolate brown and greenish-blue, mottled, calcareous. 3" Limestone shell, chocolate brown and greenish-blue, mottled, hard, dense. 1" Shale, chocolate brown, with rare greenish-blue streaks, calcareous.
10	2715-2717	6"	3" Shale, as above 3" Limestone, shell, chocolate brown and greenish-blue, mottled, hard, dense.
11	2876-2881	5'	Shale, purplish-brown, with occasional greenish-gray streaks, calcareous, massive, with occasional inclusions of gray to white crystalline lime.
12	2881-2886	2½'	Shale, as above.
13	2886-2896	10'	Shale, as above, with increasing amount of lime inclusions.
14	2896-2905	2'	Shale, as above.
15	2905-2911	6'	Shale, as above.
16	3057-3066	8½'	Shale, reddish-brown to purplish-brown, with occasional greenish-gray, limy streaks; shale is calcareous firm to crumbly, with occasional small scattered limestone pebbles.

17	3066-3075	7½'	Dolomite, reddish-brown, with occasional seams and patches of gray and greenish-gray lime; dolomite is shaly, very finely granular, and contains rare, small limestone pebbles.
18	3075-3082	5'	Shale, purplish-brown, with occasional greenish-gray streaks, limy, dolomitic, with occasional scattered pebbles.
19	3082-3089	6'	Dolomite, reddish-brown, shaly, with streaks and inclusions of gray and greenish-gray limestone; mottled.
20	3089-3095	4'	Dolomite, as above, with less limestone.
21	3096-3106	9'	Dolomite, as above, with only rare inclusions of gray and greenish-gray limestone.
22	3106-3112	7'	Shale, purplish-brown to bluish-brown, dolomitic, crumbly, with rare streaks and inclusions of greenish-gray limestone; numerous small scattered limestone pebbles.
23	3112-3119	7'	Shale, as above.
24	3119-3129	7½'	1' Shale, as above. 6½' Interbedded blue-gray, dense limestone and reddish-brown, dense dolomite; dolomite shaly in spots.
25	3129-3138	2½'	Dolomite, reddish-brown, with thin steaks greenish-gray, shaly limestone; dolomite somewhat shaly.
26	3138-3140	1½'	Shale, blue-gray, dolomitic, firm to crumbly, rare pebbles.
27	3140-3147	7'	1' Shale, blue-gray, with brown mottling, dolomitic, crumbly, rare small pebbles. 6' Shale, chocolate brown, massive, dolomitic, with gray nodular, cherty limestone inclusions; rare small pebbles; occasional slickensides.
28	3147-3157	4'	6" Shale, as above. 3¼' Shale, gray, with brownish mottling, clayey, occasional cherty limestone inclusions.
29	3157-3159	2'	Shale, chocolate brown, with mottling of gray, crumbly, with occasional small pebbles.
30	3159-3168	7'	1' Shale, as above. 6' Dolomite, reddish-brown, massive, hard, granular, with numerous inclusions of gray and greenish-gray nodular limestone.
31	3168-3178	10'	Dolomite, as above, with less limestone inclusions.
32	3178-3187	9'	1½' Dolomite, as above. 3' Sandstone, pink to red, with thin gray interbeds; hard, tight, fine-grained. Dip 4°. 4½' Dolomite, reddish-brown, massive, hard, tight, granular, with gray, greenish-gray, white, nodular limestone inclusions; rare thin streaks of reddish-brown, slickensided shale.
33	3187-3190	3'	Dolomite, as above.
34	3190-3195	1½'	Dolomite, as above.
35	3195-3201	5½'	1½' Shale, gray to gray-brown, limy and dolomitic. 4' dolomite, reddish-brown, with gray nodular limestone inclusions. Dolomite hard, tight, finely granular.

UNION OIL COMPANY & CONTINENTAL OIL COMPANY - AZTEC NO. 1

Holbrook Area
Navajo County
Arizona

Location: 330' south and 330' west of northeast corner
Section 19-15N., 18 E., Gila & Salt River B. & M.
Elevation: 6112' ground, 6125' derrick floor, 6127' Kelly Bushing
(All depths measured from Kelly Bushing)

Spudded: September 19, 1943
Abandoned: December 31, 1943

Total Depth: 3850'

Rotary Tools: 0-3850'
Casing Record: 10-3/4" cemented 747'
No electric log survey run

Contractors: Manning & Brown

Took 131 Cores
Took 3 DST's } *see file*

LOG

<u>INTERVAL</u>	<u>LITHOLOGIC DESCRIPTION</u>
0-15	Kelly Bushing to ground.
15-25	Sandstone, tan to buff, fine to medium grained, hard to slightly friable.
25-30	Sandstone, as above, with considerable fresh-colored.
30-40	Sandstone, as above, with considerable flesh-colored, some calcareous cementation.
40-50	Limestone, light gray, finely sandy, with streaks of above sandstone.
50-60	Limestone, as above, with streak mushy white sand 59-60'.
60-150	No returns.
150-160	Sandstone, white, with slight yellowish cast, medium grained, friable to hard.
160-230	Sandstone, as above.
230-250	No returns.
250-260	Sandstone, as above.
260-261	Shale, red, hard.
261-750	No returns. Interval drilled like sandstone. Recovered several pieces of hard, dark brown shale off the bit at 610'.
750-860	Sand, red, fine to medium grained, very silty, occasional streaks of red sandy to clayey shale. Trace of gypsum and anhydrite.
860-880	Anhydrite, white with occasional veining of red.
880-890	Sand, red, silty, with anhydrite.
890-900	Anhydrite, and gypsum, white with occasional veining of red shale.
900-910	Anhydrite and gypsum, with red sandy shale and silty sand.
910-940	Shale, gray, sandy, considerable anhydrite and gypsum with trace of red silty sand.
940-990	Sand, red, silty, fine grained, with interbeds of gray, sandy shale, anhydrite and gypsum.
990-1010	Interbedded red silty sand; gray sandy shale; reddish-brown, fine sandy shale; gypsum and anhydrite.
1010-1180	Sand, red and reddish-brown, fine to medium grained, silty, with interbeds of gypsum and anhydrite; gray to greenish-gray shale; and occasional streaks of red, sandy to clayey shale.
1180-1190	Anhydrite, white with occasional veining of red. Trace of red sandy, shale; red silty sand and gray shale.
1190-1220	Interbedded red silty sand; reddish-brown, sandy shale; anhydrite and gypsum; and a trace of gray shale.
1220-1230	Anhydrite and gypsum, with thin streaks of gray and red silty sand and reddish-brown, finely sandy shale.
1230-1290	Interbedded red silty sand; reddish-brown, sandy shale; occasional streak of gray shale; gypsum and anhydrite. Trace of salt from 1270' to 1280'.
1290-1300	Salt, crystal, nearly pure, with trace of gray shale and anhydrite.
1300-1340	Interbedded anhydrite and gypsum; gray and reddish-brown shale; red silty sand; and salt.
1340-1350	Anhydrite, white with occasional red veining. Trace of red and gray shale and salt.
1350-1370	Interbedded anhydrite and gypsum; gray and reddish-brown, finely sandy shale; red silty sand; and salt.
1370-1390	Anhydrite and gypsum, white with occasional red veining. Trace of gray and reddish-brown shale.
1390-1410	Salt, crystal, clear. Practically pure.
1410-1430	Shale, reddish-brown, fine, sandy, with interbeds of gray shale, salt, anhydrite and gypsum.
1430-1440	Limestone, gray to grayish-tan, very shaly, with minor amount of gray sand and anhydrite.

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1440-1450	Shale, gray to grayish-tan, very limy, with occasional streaks of gray, shaly limestone. Minor amount of gray sand and anhydrite.
1450-1500	Sand, red to reddish-brown, silty, with thin interbeds of red, reddish-brown, fine, sandy shale. Trace of gypsum and anhydrite.
1500-1510	Interbedded red and reddish-brown, silty sand and sandy shale, salt and anhydrite.
1510-1560	Salt, crystal, white, nearly pure, with minor amount of red shale, sand and anhydrite.
1560-1610	Salt, as above, with interbeds of red and reddish-brown, silty sand and finely sandy shale.
1610-1690	Salt, as above, with lessor interbeds of red, reddish-brown and gray silty sand.
1690-1700	Limestone, gray-black, very shaly, and gray-black, very limy shale. Some stain.
1698-1733	<u>Cored</u> (See core description)
1730-1760	Interbedded reddish-brown, fine-grained, silty sand and red to reddish-brown shale.
1760-1810	Sand, reddish to reddish-brown, fine to medium grained, silty, with minor amounts of salt and red and gray sandy shale.
1810-1830	Salt, crystal, white, nearly pure.
1830-1840	Shale, gray to tannish-gray, limy, with salt, red and gray sand.
1840-1850	Salt, crystal, white, clear, nearly pure.
1850-1860	Shale, gray, very limy, and salt.
1860-1870	Sand, grayish-tan, silty.
1870-1880	Shale, grayish-tan, very limy, with minor amount of grayish-tan sand.
1878-1898	<u>Cored</u> (See core description)
1900-1925	Shale, gray, very limy and dolomitic. Occasional streak of gray, shaly limestone.
1925-2040	Sand, reddish-brown, fine-grained, silty, with thin interbeds of gray and reddish-brown, sandy shale and salt.
2040-2060	Salt, white, crystal, with minor amount of reddish-brown, silty sand.
2060-2070	Sand, reddish-brown, fine-grained, silty, with considerable salt and minor amount of gray, very limy shale.
2070-2080	Salt, with interbeds of reddish-brown, silty sand.
2080-2100	Interbedded, reddish-brown, fine-grained, silty sand and reddish-brown, fine, sandy shale.
2100-2110	Salt, with some reddish-brown, fine-grained, silty sand.
2110-2160	Sand, red and reddish-brown, fine-grained, silty with minor amounts of salt and reddish-brown, sandy shale.
2160-2170	Sand, grayish-tan, silty with interbeds of gray, limy shale.
2170-2180	Limestone, grayish-tan, very silty, with some grayish-tan, limy shale.
2180-2310	Sand, reddish-brown, fine-grained, silty, with minor amounts of reddish-brown and gray, fine, sandy shale. Occasional trace of salt, anhydrite and gypsum.
2310-2330	Shale, gray, very limy, and reddish-brown, silty sand.
2330-2510	Shale, reddish-brown, very fine, sandy, and sand, reddish-brown, very shaly; some medium-grained, red sand; considerable porous anhydrite and trace of gray shale.
2510-2520	Sand, red and reddish-brown, silty, with considerable anhydrite and minor amount of gray shale.
2520-2590	Shale, reddish-brown, fine, sandy, and sand, reddish-brown, very shaly; some medium-grained, red, silty sand; trace of gray shale and anhydrite.
2590-2710	Sand, red and reddish-brown, fine-grained, silty with reddish-brown and brown, fine, sandy, slightly limy shale; trace of gray shale and anhydrite.
2709-2717	<u>Cored</u> (See core description)
2720-2870	Shale, reddish to purplish-brown, fine, sandy, streaks of slightly limy, and red and reddish-brown, silty sand; some gray and brown shaly limestone and a trace of anhydrite.
2876-2911	<u>Cored</u> (See core description)
2910-3020	Shale, reddish to purplish-brown, limy, with some red and reddish-brown, silty sand. Trace of gray and brown, shaly limestone.
3020-3050	Sand, red and reddish-brown, silty, and shale, purplish to reddish-brown, limy. Trace of gray and brown limestone.
3057-3850	<u>Cored</u> (See core description)

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 Sec. 19, T. 15 N., R. 18 E.

Navajo County

CORE DESCRIPTION

<u>Core No.</u>	<u>Interval</u>	<u>Recovery</u>	<u>Lithologic Description</u>
1	1698-1703	5'	6" Limestone, gray, crystalline 1' Limestone, dark gray to black, very shaly, good odor, yellowish-brown cut in CCl_4 . 2' Interbedded gray, limy shale and gray crystalline limestone; fair stain and odor. Dipe 2° to 4° . $1\frac{1}{2}$ ' Limestone, gray, hard, dense, semi-crystalline; good stain, slight odor; no porosity; calcite filled vugs? or fossils?
2	1703-1713	9'	3' Limestone, as last described. 6' Shale, gray, hard, dense, dolomitic? Streaks are micromicaceous; slight odor on fresh fracture.
3	1713-1723	$8\frac{1}{2}$ '	Shale, blue-gray, with occasional brownish cast, hard, massive.
4	1723-1733	$2\frac{1}{2}$ '	$2\frac{1}{4}$ " Shale, as above. 2" Salt, in reddish-brown, sandy shale.
5	1878-1883	3'	Shale, gray-brown, dolomitic or fine, sandy, abundant white and blue chert inclusions; quite carbonaceous; fair odor and slight stain.
6	1883-1888	3'	Shale, as above.
7	1888-1893	$4\frac{1}{2}$ '	Shale, as above.
8	1893-1898	8'	3' Limestone, gray-brown, shaly, dense, hard, semi-crystalline, carbonaceous; white chert inclusions; fair stain, slight odor, no porosity. 5' Shale, gray-brown, dolomitic or fine, sandy; abundant white and blue chert inclusions, quite carbonaceous; slight stain, slight odor.
9	2709-2715	6'	$4\frac{1}{2}$ ' Shale, chocolate brown, massive, calcareous, with patches of crystalline lime; numerous small phosphatic? pellets. 3" Shale, chocolate brown and greenish-blue, mottled, calcareous. 3" Limestone shell, chocolate brown and greenish-blue, mottled, hard, dense. 1" Shale, chocolate brown, with rare greenish-blue streaks, calcareous.
10	2715-2717	6"	3" Shale, as above 3" Limestone, shell, chocolate brown and greenish-blue, mottled, hard, dense.
11	2876-2881	5'	Shale, purplish-brown, with occasional greenish-gray streaks, calcareous, massive, with occasional inclusions of gray to white crystalline lime.
12	2881-2886	$2\frac{1}{2}$ '	Shale, as above.
13	2886-2896	10'	Shale, as above, with increasing amount of lime inclusions.
14	2896-2905	2'	Shale, as above.
15	2905-2911	6'	Shale, as above.
16	3057-3066	$8\frac{1}{2}$ '	Shale, reddish-brown to purplish-brown, with occasional greenish-gray, limy streaks; shale is calcareous firm to crumbly, with occasional small scattered limestone pebbles.

17	3066-3075	7½'	Dolomite, reddish-brown, with occasional seams and patches of gray and greenish-gray lime; dolomite is shaly, very finely granular, and contains rare, small limestone pebbles.
18	3075-3082	5'	Shale, purplish-brown, with occasional greenish-gray streaks, limy, dolomitic, with occasional scattered pebbles.
19	3082-3089	6'	Dolomite, reddish-brown, shaly, with streaks and inclusions of gray and greenish-gray limestone; mottled.
20	3089-3095	4'	Dolomite, as above, with less limestone.
21	3096-3106	9'	Dolomite, as above, with only rare inclusions of gray and greenish-gray limestone.
22	3106-3112	7'	Shale, purplish-brown to bluish-brown, dolomitic, crumbly, with rare streaks and inclusions of greenish-gray limestone; numerous small scattered limestone pebbles.
23	3112-3119	7'	Shale, as above.
24	3119-3129	7½'	1' Shale, as above. 6½' Interbedded blue-gray, dense limestone and reddish-brown, dense dolomite; dolomite shaly in spots.
25	3129-3138	2½'	Dolomite, reddish-brown, with thin streaks greenish-gray, shaly limestone; dolomite somewhat shaly.
26	3138-3140	1½'	Shale, blue-gray, dolomitic, firm to crumbly, rare pebbles.
27	3140-3147	7'	1' Shale, blue-gray, with brown mottling, dolomitic, crumbly, rare small pebbles. 6' Shale, chocolate brown, massive, dolomitic, with gray nodular, cherty limestone inclusions; rare small pebbles; occasional slickensides.
28	3147-3157	4'	6" Shale, as above. 3¼' Shale, gray, with brownish mottling, clayey, occasional cherty limestone inclusions.
29	3157-3159	2'	Shale, chocolate brown, with mottling of gray, crumbly, with occasional small pebbles.
30	3159-3168	7'	1' Shale, as above. 6' Dolomite, reddish-brown, massive, hard, granular, with numerous inclusions of gray and greenish-gray nodular limestone.
31	3168-3178	10'	Dolomite, as above, with less limestone inclusions.
32	3178-3187	9'	1½' Dolomite, as above. 3' Sandstone, pink to red, with thin gray interbeds; hard, tight, fine-grained. Dip 4°. 4½' Dolomite, reddish-brown, massive, hard, tight, granular, with gray, greenish-gray, white, nodular limestone inclusions; rare thin streaks of reddish-brown, slickensided shale.
33	3187-3190	3'	Dolomite, as above.
34	3190-3195	1½'	Dolomite, as above.
35	3195-3201	5½'	1½' Shale, gray to gray-brown, limy and dolomitic. 4' dolomite, reddish-brown, with gray nodular limestone inclusions. Dolomite hard, tight, finely granular.

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36	3201-3209	6'	Dolomite, as above.
37	3209-3219	9'	3½' Dolomite, as above. 1½' Interbedded gray-brown dolomite and gray limestone. 2' Limestone, gray crystalline to cherty. 1' Shale, reddish-brown, clayey, with streaks of gray. 1' Limestone, gray to gray-brown, shale inclusions, nodular or pebbly.
38	3219-3228	9'	Interbedded, variegated reddish-brown shale; gray to pinkish-gray limestone; and reddish-brown dolomite.
39	3228-3238	10'	3' Shale, reddish-brown, with streaks of gray, dolomitic, with inclusions of gray limestone. 7' Shale, gray-brown, becoming quite gray in lower 3', dolomitic, slightly limy, very fossiliferous.
40	3238-3248	10'	Shale, gray to black, clayey, firm to crumbly, with interbeds of gray, gray-brown and greenish-gray shaly, silty, Crinoidal limestone; entire interval very fossiliferous.
41	3248-3250	2'	Shale, gray to gray-brown, dolomitic, slightly limy, quite fossiliferous.
42	3250-3260	10'	Shale, as above, with streak of reddish-brown shale from 3252' to 3254'.
43	3260-3269	9'	Shale, as above, becoming somewhat more dolomitic; slight indication of stain.
44	3269-3279	9½'	Shale, gray to gray-brown, dolomitic, slightly limy, with thin streaks gray to greenish-gray, oolitic, cherty limestone; numerous fossils.
45	3279-3289	10'	Shale, as above, with streaks which are quite dolomitic and limy.
46	3289-3295	6'	Shale, gray to gray-brown, quite limy and slightly dolomitic; slight staining along bedding planes.
47	3295-3305	4'	Shale, as above, increasing in stain.
48	3305-3310	5'	Shale, as above, with considerable <u>stain</u> in more limy and dolomitic streaks. Fossils.
49	3310-3318	8'	Shale, gray, dolomitic, limy, spotty <u>staining</u> .
50	3318-3328	10'	Shale, as above, good Productus and crinoid stems; <u>slight stain</u> ; looks like <u>Pennsylvanian fossils</u> .
51	3328-3332	4'	Dolomite, gray to dark gray, limy, shaly, finely granular, hard, tight, carbonaceous; no stain.
52	3332-3339	7'	Dolomite, as above, becoming increasingly shaly and with large patches of pyrite in lower 1'; highly fossiliferous; Productus, etc.
53	3339-3349	8'	Shale, dark gray, dolomitic, limy, clayey, crumbly, abundant carbonized wood.
54	3349-3357	10'	Shale, light to dark gray, firm, very dolomitic and limy, carbonaceous, finely disseminated pyrite; rare fossils.
55	3357-3367	10'	Shale, as above, with streaks of highly carbonaceous dolomite.

- 56 3367-3375 4½' 1' Dolomite, gray, very shaly, slightly limy, with scattered small pebbles.
1' Dolomite, as above, with abundant white and gray, small limestone pebbles; practically a breccia.
2' Dolomite, gray, shaly, limy.
6" Shale, gray, greenish-gray, brown, clayey, slick; small pebbles.
- 57 3375-3382 2' Shale, bluish-gray and brownish-gray, crumbly; numerous small pebbles.
- 58 3382-3386 1' Shale, reddish-brown, very conglomeratic; pebbles of limestone and chert; looks like a basal conglomerate.
- 59 3386-3395 8½' 3" Shale, as above, highly slickensided.
8' 3" Shale, reddish-brown, with streaks of gray, dolomitic, limy, slight staining in dolomitic patches.
- 60 3395-3405 7½' Shale, as above, with slight staining in dolomitic patches.
- 61 3405-3408 2" Limestone, gray, hard, dense, crystalline.
- 62 3408-3416 5' Dolomite, reddish-brown, to gray-brown, hard, dense, shaly, slightly limy, very slight streaked staining in lower portion.
- 63 3416-3426 8½' 5' Interbedded gray and reddish-brown dolomite and limestone, very fossiliferous, considerable staining in more porous streaks.
1' Dolomite, dark, reddish-brown, shaly, hard, tight; scattered small pebbles.
2½' Shale, reddish-brown, very clayey.
- 64 3426-3435 9' Dolomite, reddish-brown to brown, with streaks of gray, massive, tight, dense, shaly; streaks quite limy; few small scattered pebbles.
- 65 3435-3445 10' 1½' Dolomite, as above, becoming very shaly in lower portion, very conglomeratic.
8½' Interbedded gray, dense limestone, reddish-brown shaly, dolomite, and reddish-brown, limy, dolomitic shale.
- 66 3445-3454 9' 4' Shale, reddish-brown, dolomitic, slightly limy, scattered pebbles with streaks very conglomeratic; firm to crumbly.
4½' Dolomite, reddish-brown, with streaks of gray; shaly, limy, conglomeratic.
6" Shale, as last described, very conglomeratic.
- 67 3454-3464 10' 6" Shale, as above.
5' Dolomite, reddish-brown; with abundant gray, nodular limestone inclusions; hard, dense, massive; scattered pebbles.
4½' Dolomite, gray to black, with streaks of gray to greenish-gray, nodular limestone; dolomite is shaly, massive, tight, dense.
- 68 3464-3474 10' 3' Shale, black, occasional purplish cast, with gray and greenish-gray, nodular limestone inclusions.
7' Sandstone, gray to pinkish-gray, fine-grained, hard, tight, calcareous, with thin streaks of reddish-brown, dolomitic shale in lower 1½'.
- 69 3474-3483 7½' 7' Sandstone, as above, though increased interbeds of reddish-brown, dolomitic shale.
6" Shale, gray to greenish-gray, with streaks of brown; dolomitic, slightly calcareous, occasional small pebbles.

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70	3483-3487	4'	1' Shale, as above, increasing in brownish cast. 3' Shale, reddish-brown to purplish-brown, massive, dolomitic, slightly calcareous; rare small pebbles.
71	3487-3495	1½'	Shale, as above.
72	3495-3500	½'	Shale, as above.
73	3500-3505	6"	Shale, as above, with streak gray-brown shale.
74	3505-3510	5'	Shale, as above, with increase in pebbles and considerable slickensides.
75	3510-3518	8'	1½' Shale, as above, pebbly to conglomeratic; numerous slickensides. 6" Limestone, gray to pinkish-gray, nodular, dense. 5' Dolomite, reddish-brown, with streaks of gray, hard, tight, dense, limy, shaly; occasional pebbles. 1' Shale, reddish-brown to purplish-brown, dolomitic, calcareous, crumbly; occasional small pebbles; considerable slickensides.
76	3518-3524	5'	Shale, as above; pebbles and slickensides.
77	3524-3527	2½'	Shale, as above, pebbles and slickensides.
78	3527-3533	6'	5' Shale, as above; pebbles and slickensides. 1' Limestone and dolomite rubble conglomerate; gray, green, greenish-gray, reddish-brown, shaly, very pebbly, ill-sorted.
79	3533-3542	9'	6" Conglomerate, as above. 8½' Limestone, reddish-brown, with streaks of gray; dolomitic, hard, dense, with shale and pebble filled cavity at 3537'.
80	3542-3550	7'	6' Limestone, as above, with occasional small pebbles. 1' Shale, reddish-brown, clayey, limy, dolomitic, with numerous small pebbles.
81	3550-3560	10'	6" Shale, as above, slight purplish cast; pebbly. 1½' Limestone, greenish-gray, and pinkish-brown, hard, dense, tight. 8' Dolomite, reddish-brown, with streaks of gray, hard, tight, dense, limy.
82	3560-3570	7'	Dolomite, as above, with thin streaks of gray limestone.
83	3570-3575	5'	6" Dolomite, as above. 4½' Limestone, gray and gray-brown, hard, tight, dense, dolomitic, becoming quite gray-black in lower 4".
84	3575-3584	9'	3' Limestone, gray-black, hard, tight, dense, dolomitic and shaly. 6' Limestone, as above, though extremely fossiliferous; Grinoids and Composita most common; numerous small bright orange-red chert inclusions.
85	3584-3593	9'	6" Fossiliferous limestone, as above; Lycopod fragments, Composita, Grinoid stems; red chert inclusions. 8½' Interbedded gray and pinkish-gray limestone and dolomite, hard, tight, dense.
86	3593-3600	7'	Limestone, gray and pinkish-gray, shaly, dolomitic, hard, tight, dense.

87	3600-3610	10'	9' Limestone, gray, shaly, dolomitic, semi-crystalline, hard, tight, dense. 1' Limestone, white to gray, crystalline, fair porosity, highly fossiliferous; corals, brachiopods, etc.; very slight amount of dry, black, asphaltic material along seams.
88	3610-3612	1½'	Limestone, as above, with abundant fossils and small amount of asphaltic material.
89	3612-3622	10'	Limestone, gray-white, to gray-brown, shaly, extremely fossiliferous; slight amount of stain in a few of more porous spots.
90	3622-3630	8'	1' Limestone, as above. 7' Shale, reddish-brown, clayey, limy, dolomitic; very minor amount of staining in limy patches in lower 1'.
91	3630-3638	8'	4' Shale, as above, less clayey and more limy and dolomitic, with streaks of gray and gray-brown dolomite and limestone. Dip 4°. 4' Interbedded gray and reddish-brown dolomite and limestone, hard, tight, dense.
92	3638-3646	8'	Interbedded limestone and dolomite, as above; numerous calcite-filled vertical fractures.
93	3646-3653	7'	1' Dolomite, reddish-brown, limy, hard, tight, dense; rare small pebbles. 6' Shale, purplish-brown, dolomitic, limy; numerous small scattered pebbles.
94	3653-3655	1½'	Dolomite, reddish-brown, with minor streaks of gray; limy, hard, tight, dense.
95	3655-3665	6'	Dolomite, as above, with thin streaks of gray chert; lower 1½' very shaly.
96	3665-3673	4½'	2½' Limestone, gray, gray-brown, reddish-brown, hard, tight, dense; highly fossiliferous, mostly brachiopods; slight staining along more porous streaks; small amount of dry, black, asphaltic residue. 2' Sandstone, gray, red, pinkish-gray, fine-grained, quartzitic.
97	3673-3680	4½'	2' Sandstone, interbedded, as above, and gray to reddish-brown, fossiliferous, crystalline limestone; slight odor and slight stain in limestone. 2½' Limestone, gray and reddish-brown, crystalline, very fossiliferous; fair porosity, slight odor and a very few gas bubbles and slight stain.
98	3680-3685	7'	1' Limestone, gray to white, crystalline, very fossiliferous, fair porosity, slight odor, slight stain, slight amount of black, dry, asphaltic residue. 4' Dolomite, reddish-brown, hard, tight, dense; minor amount of gray, cherty, limestone inclusions. 2' Limestone, gray, greenish-gray, purplish-gray, pinkish-gray, crystalline to cherty, hard, tight, dense, fossiliferous; very slight spotty staining in more porous streaks.
99	3685-3690	3'	Limestone, as above, with streaks of purplish dolomite.
100	3690-3692	1'	Sandstone, purple to purplish-gray, fine-grained, dolomitic, quartzitic.

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117	3775-3785	2'	Limestone, gray, cherty to semi-crystalline, hard, tight, dense; occasional thin red, slick shale partings; minor red chert veining.
118	3785-3790	1½'	Limestone, as above, with occasional patches rounded quartz grains.
119	3790-3795	2'	Dolomite, gray to greenish-yellow, with streaks of red; cherty in spots; scattered, rounded, imbedded quartz grains.
120	3795-3800	5'	3½' Dolomite, as above, with thin red-brown, pink and green shale partings; 2" zone of imbedded, rounded quartz and chert grains and small pebbles at 3797'; fair <u>spotty staining</u> along more porous fracture zones and in <u>vuggy spots</u> . 1½' Dolomite, purplish to reddish-brown, granular, with occasional thin red shale streaks; fair, though very <u>spotty, stain</u> .
121	3800-3805	5'	Dolomite, as above, though quite shaly and more finely granular.
122	3805-3812	7'	6" Dolomite, as above. 2" Dolomite, copper green, cherty, vuggy with dry, black, asphaltic residue. 4¼" Dolomite, gray, purplish-gray, angular, fair porosity in vuggy spots; numerous irregular partings and splotches of red shale; green shale parting in lower 2", slight staining in vuggy spots. 2' Dolomite, pink to salmon-colored, sucrose, spotty porosity, quite limy; occasional irregular, thin, red shale partings; imprint of fossil, looks like a Spirifer or Chonetes.
123	3812-3817	5'	3' Dolomite, pink, pinkish-gray; sucrose, numerous holes and cavities; several very thin, serrated streaks of pink, red and bright green slick shale; numerous large, rounded, frosted, imbedded quartz grains; a number of very small fossils. 1½' Shale, reddish-brown, dolomitic, with patches of large, rounded, frosted, imbedded quartz grains; one thin, bright green, slick shale parting. 6" Sandstone, pinkish-red, coarse-grained, mostly well rounded quartz grains; quartzitic, sharp.
124	3817-3822	4'	2' Sandstone, as above, with occasional shaly streak. 2' Shale, reddish-brown, with patches of rounded, imbedded, quartz grains; some of the shale is slick and may be slightly metamorphosed.
125	3822-3827	5'	Dolomite, pink, crystalline; quartzitic and arkosic in spots.
126	3827-3832	5'	Sandstone, pink to purplish-gray, medium to coarse, grained; quartzitic and arkosic; thin streaks of bright green and reddish-brown slick shale.
127	3832-3837	4½'	Sandstone, as above, with thin porous dolomite streaks.
128	3837-3840	3'	Sandstone, as above.
129	3840-3843	3'	Sandstone, as above, with thin serrated, bright green and reddish-brown, slick shale streaks.

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101	3692-3700	8'	Dolomite, purplish-gray, sandy, with abundant white, gray and greenish-gray, cherty to semi-crystalline limestone nodules.
102	3700-3708	8'	2½' Dolomite, as above. 5½' Limestone, gray, grayish-white, greenish-gray, purplish-gray; cherty to semi-crystalline; numerous inclusions of purplish-gray, dolomitic shale; numerous fossils; slight odor.
103	3708-3718	9'	Dolomite, purplish-gray, with large nodules of gray and white, hard, dense chert; rare small pebbles in dolomite; fossiliferous.
104	3718-3722	3'	Dolomite, as above, with numerous Spirifers, some replaced with red chert.
105	3722-3727	5'	Dolomite, as above, with streaks purplish, pebbly, dolomitic shale.
106	3727-3734	6'	1' Shale, purplish-brown, with green blotches, dolomitic. 2' Dolomite, purplish-brown, green, purplish-gray, with nodules of gray and greenish-gray, cherty, limestones; very mottled. 3' Dolomite, reddish-brown, with blotches of green; very shaly, pebbly; occasional slickensides.
107	3734-3739	5'	4½' Dolomite, as above, becoming increasingly sandy in lower portion. 6" Sandstone, gray-brown, to reddish-brown, medium to coarse grained, hard, sharp, quartzitic.
108	3739-3747	1'	Sandstone, as above.
109	3747-3750	1½'	Sandstone, reddish-brown; coarse to pebbly, with streaks of reddish-brown, dolomitic shale; quite ill-sorted.
110	3750-3754	2½'	2' 3" Sandstone, as above, becoming very coarse and quartzitic in lower 6". 3" Clay, pinkish and purplish, with blotches of green and yellow; slick, looks like derived from weathering feldspars; yellow blotches look like weathered mica.
111	3754-3757	1½'	Clay, as above, with minor amount of chert veining; looks like it contains highly weathered feldspar crystals; found a Trilobite in a chert nodule in lower part of core.
112	3757-3759	2'	Clay, as above, with few cherty to crystalline limestone inclusions; quite pebbly throughout; slight yellow stain in crystalline limestone.
113	3759-3763	3½'	Clay, as above, though slightly darker in color; very pebbly; chert inclusions.
114	3763-3767	2½'	Clay, as above, though reddish-brown, with a few chert and crystalline limestone inclusions; <u>may be slight stain in crystalline streaks.</u>
115	3767-3772	4'	Shale, reddish-brown, dolomitic, slick; looks like has undergone some metamorphism; contains thin gray nodular chert and crystalline limestone inclusions.
116	Miss Contop 3772-3775	2½'	Limestone, gray, cherty to semi-crystalline, hard, dense, tight, with thin, slick, reddish-brown, shale partings.

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130	3843-3846	3'	Dolomite, gray to purplish-gray; numerous holes and cavities; thin serrated streaks of red and bright green slick shale; streaks with rounded, imbedded quartz grains; streaks very quartzitic.
131	3846-3850	3'	Dolomite, as above, with streaks of bright green and greenish-gray; very sandy and quartzitic.

TOTAL DEPTH 3850'

HISTORY

Sept. 18, 1943 Spudded in well at 3:00 P.M., drilled 14" hole to 42 feet and lost circulation.

Sept. 27, 1943 Drilled ahead to 261' with intermittent returns. Lost circulation about ten times since spudding; partially regained with Gel-Flake and Fibrotex. Had to cement hole each time on losing circulation; from 224' to 240' cemented six separate times.

Oct. 13, 1943 Drilled from 261' to 750' without any returns. Cemented well at intervals at least nine separate times in attempt to regain circulation. Stuck reamer at 730' while reaming without returns, and recovered. Hole is 14" to 730' and 12-3/4" from 730' to 747'.

Oct. 14, 1943 At total depth of 750' cemented 10-3/4" casing at 747'. Had difficulties in keeping any cement in hole. Finally able to get some to stack up behind casing.

Oct. 23, 1943 Cored and drilled ahead to 2312', lost circulation. Left drill collar and bit in hole, and recovered. Unable to regain circulation and cemented.

Nov. 12, 1943 Total depth 3190'. Between 2312' and 3190' lost circulation ten times. Regained with Fibrotex three times. Cemented hole seven times. On cleaning out hole after cementing jobs frequently find no cement in hole.

Nov. 14, 1943 TEST NO. 1 Ran Halliburton formation tester 3156-3190', open 1 hour, faint steady blow of air; recovered 190' of slightly salt, muddy water.

Nov. 17, 1943 Cored ahead to 3332'. Lost circulation at 3200'. Recemented. Found no cement in hole.

TEST NO. 2. Ran Halliburton formation tester 3280-3332', open 30 minutes, packer started to leak at end of 20 minutes, light steady blow of air; recovered 930' of mud in drill pipe.

Nov. 28, 1943 Cored ahead to 3690'. Lost circulation three times since 3332'. Cemented each time.

TEST NO. 3 Ran Halliburton formation tester 3660-3690', open 45 minutes, faint steady blow of air; recovered 570' of slightly salty, watery mud.

Nov. 30, 1943 Cored ahead to 3775'.

Dec. 1, 1943 Plugged to 1935'. Plug crept. Replugged to 1935'. Ran Halliburton formation tester 1875-1935', no test, packer failed.

Dec. 13, 1943 Cored ahead to 3849'. Lost returns at 3812' and cemented three times. Unsuccessful with cotton seed hulls. Power failed for 30 minutes. Stuck drill pipe on bottom.

Dec. 14, 1943 Spotted few barrels of oil; unable to move pipe.

Dec. 26, 1943 Made inside cut on drill pipe at 3750' and 2275'. Pulled from 2275'.

Dec. 31, 1943 Left balance of drill pipe in hole. Plugged and abandoned Dec. 31, 1943.

History made up from daily telegrams by Harvey W. Lee, Exploration Dept. Union Oil Co.
Los Angeles, March 21, 1944.