

U. S. LAND OFFICE Navajo Allotted
SERIAL NUMBER I-149-Ind-7973
LEASE OR PERMIT TO PROSPECT _____UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

LOCATE WELL CORRECTLY

Company Albuquerque Associated Oil Co. Address 626 First National Bank Bldg.
Albuquerque, New Mexico
Lessor or Tract Navajo Field Torreón State New Mexico
Well No. 2 Sec. 22 T. 18N. R. 4W. Meridian N.M.P.M. County Sandoval
Location 1830 ft. XX of N. Line and 700 ft. XX of E. Line of Section 22 Elevation 6340' gr
(Derrick floor relative to sea level)

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

Signed s/ O. A. LarrazaloDate 12-31-54Title Geologist

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

Commenced drilling February 5, 1953 Finished drilling February 24, 1953

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from No commercial to zones _____ No. 4, from _____ to _____
No. 2, from _____ to _____ No. 5, from _____ to _____
No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

No. 1, from 960' to 985' No. 3, from 3452' to 3662'
No. 2, from 1176' to 1225' No. 4, from _____ to _____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
<u>10 3/4"</u>				<u>100</u>					<u>Surface</u>
<u>5 1/2"</u>				<u>949</u>					

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
<u>5 1/2"</u>	<u>949'</u>	<u>120 sacks</u>	<u>circulated</u>		
<u>10 3/4"</u>	<u>100'</u>	<u>100 sacks</u>	<u>circulated</u>		

PLUGS AND ADAPTERS

Heaving plug—Material _____ Length _____ Depth set _____
Adapters—Material _____ Size _____

SHOOTING RECORD

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

TOOLS USED

Rotary tools were used from 0 feet to T.D. feet, and from _____ feet to _____ feet
Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

DATES

Abandoned 4-15, 1953

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

If gas well, cu. ft. per 24 hours _____

Rock pressure, lbs. per sq. in. _____

EMPLOYEES

_____, Driller
_____, Driller
_____, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
<u>0</u>	<u>120'</u>		<u>gray ss. and gray shale</u>
<u>120'</u>	<u>132'</u>		<u>Medium grained gray to black lignitic</u>
			<u>ss and streaks of gray shale</u>
<u>132'</u>	<u>140'</u>		<u>Medium grained gray sandstone</u>
<u>140'</u>	<u>156'</u>		<u>Light medium grained sandstone and black</u>
			<u>carbonaceous shale</u>
<u>156'</u>	<u>184'</u>		<u>Gray medium grained shaley ss.</u>
<u>184'</u>	<u>188'</u>		<u>Black carb. shale</u>
<u>188'</u>	<u>216'</u>		<u>White to gray medium grained ss.</u>
<u>216'</u>	<u>244'</u>		<u>Gray medium grained ss., black carb. shale</u>
			<u>breaks</u>
<u>244'</u>	<u>264'</u>		<u>Gray sandy shale</u>
<u>264'</u>	<u>268'</u>		<u>Gray medium grained shaly ss.</u>
<u>268'</u>	<u>280'</u>		<u>Gray sandy shale</u>
<u>280'</u>	<u>300'</u>		<u>Medium grained gray ss 50%: gray sandy shale 50%</u>
<u>300'</u>	<u>320'</u>		<u>Black carb. shale with stringers gray ss.</u>
<u>320'</u>	<u>338'</u>		<u>Medium grained white to gray calcareous ss.</u>
<u>338'</u>	<u>396'</u>		<u>Gray fissile shale</u>
<u>396'</u>	<u>444'</u>		<u>Gray to white calc ss fine grained. Few stringers</u>
			<u>of buff dense limestone</u>
<u>444'</u>	<u>452'</u>		<u>Gray sandy shale</u>
<u>452'</u>	<u>476'</u>		<u>Hard Medium grained calcareous ss</u>
<u>50'</u>			

(OVER)

FORMATION RECORD—Continued

FROM-	TO-	TOTAL FEET	FORMATION
476'	496'		Gray sandy shale
496'	512'		Medium grained white to gray shaly ss
512'	520'		Gray sandy shale
520'	548'		Gray sandy shale & fine grained loosely consolidated shaly ss
548'	566'		Gray sandy shale
566'	588'		Gray medium grained ss
588'	660'		Light gray sandy shale traces lignitic shale
660'	668'		Medium grained shaly ss
668'	680'		Gray sandy shale
680'	740'		White to gray medium grained ss 90%; gray sandy shale 10%
740'	776'		White to gray medium grained ss 50%; gray sandy shale 50%
776'	828'		Fine grained gray ss 90%; gray sandy shale 10%
828'	876'		Gray sandy shale, trace lignite
876'	880'		Medium grained gray shaly ss
880'	892'		Gray shale
892'	916'		Gray sandy shale 80%; gray shaly ss 20%
916'	952'		Medium grained ss 90%; Gray sandy shale 10%; trace Pyrite
952'	960'		Gray shale
960'	1028'		Medium grained gray shaly ss
1028'	1036'		Gray sandy shale
1036'	1346'		Medium to coarse grained, gray and black speckled ss; trace lignite in several places
1346'	1528'		Fine gray shaly sandstone 60%; gray sandy shale 40%; traces lignite
1528'	1566'		Gray sandy shale
1566'	1672'		Gray sandy shale 80%; gray ss 20%
1672'	1800'		Gray sandy micaceous and fossiliferous shale
1800'	2000'		Gray fine grained calcareous ss 70%; Gray to black lignitic shale 30%
2000'	2392'		Gray calcareous ss with thin gray and black lignitic shale laminations
2392'	2644'		Gray medium grained ss 90%; gray carbonaceous shale 10%
2644'	2840'		Gray lignitic shale 95%; Gray ss 5%
2840'	2864'		Brown to black sandy shale
2864'	2876'		Carbonaceous shale 90%; gray ss 10%
2876'	2892'		Carbonaceous shale
2892'	2912'		Fine gray tight calcareous ss 10%; Gray sandy shale 90%
2912'	3060'		Dark gray to black fissile shale 90%; gray quartzitic ss 10%
3060'	3086'		Very calcareous black shale
3086'	3120'		Black fissile shale and gray to chalky shale with some medium grained calcareous ss
3120'	3212'		Medium to fine grained calcareous sandstone 50% black to dark gray fissile shale 50%
3212'	3240'		Black shale, abundant calcite
3240'	3284'		Black and gray shale 80%; gray chalky limestone 20%
3284'	3308'		Light gray shale; trace limestone and some pyrite
3308'	3424'		Gray medium grained ss 30%; Fissible black and gray shale 70%
3424'	3452'		Light gray shale
3452'	3500'		Light gray medium grained ss 90%; dark gray shale 10%
3500'	3548'		Light gray shale 90%; gray ss 10%
3548'	3560'		Light gray shale 90%; gray shaly limestone 10%
3560'	3620'		Light gray ss 60%; dark gray shale 40%
3620'	3728'		Dark gray to green shale
3728'	3783'		Chalky to gray angular quartz ss; some gray shale. T. D.

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OIL OR GAS FINDER OR OWNER

[illegible]

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BEHAVIOR OF THE ALUMINUM

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains.