P-W

Chino Valley Dev. State #1
NE/4-SW/4 Sec20-Twp18N-R2W 13-4
Yavapai County - No Permit

32 × 8

13-4

11

County Navapai

Area

Lease No.

Well Name Chino Valley Oil Dev. State #1-Walton

Location NE SW Sec 20 Twp 18N Range 2W Footage ~2640 fnl 2700 fel

4480± GL from USGS Franklin Spud 8-11-38 Complete 1940? Total 2600'-USGS

Elev 4500 Gr 15 ft KB Date July 1938 Abandon Depth 2060'

USGS PP 467, p. 76

Contractor: Approx. Cost $

Drilled by Rotary
Cable Tool ✓

Casing Size	Depth	Cement

Production Horizon

Initial Production D & A

REMARKS: Hove Sampler (Phoenix) 80-2060'

Elec. Logs

Applic to Plub ___ Plugging Record ___ Completion Report ___

Sample Log x
Sample Descript x
Sample Set 3
Cores

Water well - accepted by

Bond Co. & No.

Bond Am't $ Cancelled Date Organization Report

Filing Receipt dated Well Book Plat Book

Loc. Plat Dedication

API # 02-025-05006

PERMIT NO. None Date Issued

13-4

32 ×

CHINO VALLEY OIL DEVELOPMENT CO. STATE #1 Yavapai County

NESW - Sec. 20, T. 18 N., R. 2 W.

Well Started: August 11, 1938

13-4

	FORMATION
0 - 250	Surface Wash-Red
250 - 262	Sand, gravel and clay-red
262 - 265	Water sand-red
265 - 273	Clay-red
273 - 385	Streaks clay and sandy water-red
385 - 397	Hard streak
397 - 440	Shells and gravel, sticky clay and hard streaks
440 - 443	Hard shell
443 - 475	Red clay tough
475 - 550	Brown shale light streaks
550 - 555	Brown hard limestone
555 - 580	Grey lime hard
580 - 600	Bad ground, flint shell, loose caves, brown sand, soft tall caves
600 - 660	Soft grey lime, spots of red, white
660 - 662	Bright red shale
662 - 666	Hard grey lime
666 - 675	Grey lime softer streaks
675 - 678	Red shale sticky
678 - 685	Hard red shell
685 - 690	Gas, hard red shell
690 - 717	Red shell, softer streaks, gas
717 - 719	Fine dead sand water
719 - 720	Red sticky shale
720 - 723	Hard shell
723 - 730	" "
730 - 734	Conglomerate gravel
734 - 735	Sticky shale, hard streaks
735 - 742	Hard shells, sand and water, bad land
742 - 755	Boulders Cong.
755 - 765	Shells, soft streaks, shale
765 - 820	Brown shale, grey lime shells
	3/10/39 - Lost tools 779 - Run 8-5/8 - Fished out 8/20/39
820 - 843	Grey water sand hard w rose 15'
843 - 848	Fine water sand
848 - 873	Brown shale gas
873 - 879	Hard brown shell - no gas
879 - 900	Bright red shale, hard shells
900 - 909	Red & brown " " "
909 - 935	Water sand fine
935 - 965	Reddish brown shale, strong gas
965 - 975	Sand, cut oil and strong gas
975 - 981	Hard lime shell
981 - 994	Hard brown shell
994 -1010	Water sand
1010-1013	Sand oil and gas
1013-1018	Shale and sand
1018-1090	Grey lime, green, red, drab streaks show
1090-1103	Brown sand, fall from above, gas and lime
1103-1128	Grey lime
1128-1132	Hard grey lime
1132-1142	Hard grey lime (show oil) gas
1142-1186	Light brown sand, dark shells, gas
1186-1188	Very sticky clay, oil in mud
1188-1193	Dark brown shale, oil and gas
1193-1200	Hard shell
1200-1210	Sticky brown shale falling
1210-1240	Firm red shale
1240-1288	Hard cuts Bitts bad Gas
1288-1292	Red rock gas show oil
1292-1293	Brown shale caving
1293-1310	Red sand, rock shells
1310-1315	Fine red sand water (Granite thrust)

2/58

32 ×

CHINO VALLEY OIL DEVELOPMENT CO. STATE #1
NESW - Sec. 20, T. 18 N., R. 2 W.
Yavapai County

1315-1320	Hard red shell, caving from above
1320-1322	Water
1322-1340	Struck black oil, drill out cement at this level.
1340-1360	Brown shale and shells
1360-1390	Blue lime gas flow 1389 - 1391
1390-1396	Blue sand
1396-1400	Soft grey lime
1440-1465	Blue grey lime
1465-1475	Same color getting harder
1475-1480	Same color - very hard, Color of mud
1480-1487	Light brown mud, softer formation
1487-1496	Light brown, good drilling and puddle
1496-1535	Light brown, belt broke at 1507
1535-1544	Light brown, same as above
1544-1555	Hard grey shows mica
1555-1570	Harder dark " "
1570-1580	" " " "
1580-1590	Hard grey lime, shows black mica
1590-1600	Hard grey lime
1600-1621	Loose sandy lime - set pipe
1621-1628	Green shale
1628-1640	Sand and red gravel - bad cave
1640-1700	Blue sand
1700-1758	Blue greyish lime - hard
1758-1765	Light hard lime shell
1765-1769	Green shale
1769-1790	Lime
1790-1795	Coarse red sand
1795-1818	Hard lime - Set pipe
1818-1828	" " " "
1828-1833	Red sand, more water
1833-1852	Lime hard- Set pipe 1842
1852-1876	Grey sand soft with good oil showing
1876-1916	Red and grey sand, soft
1916-1920	Red gravel
1920-1926	Sandy lime shell
1926-1937	Red and grey sand
1937-1943	Sand shell grey hard
1943-1949	Grey and red sand - gas showing
1949-1957	Blue shale

2/58

32 x

CHINO VALLEY OIL DEVELOPMENT COMPANY STATE #1
NE¼ SW¼ 20-18N-2W Drilled 1940

0	250	Red surface wash
250	262	Red sand gravel and clay
262	265	Water sand
265	273	Red clay
273	385	Red streaks, sand and clay
385	397	Hard red clay
397	440	Red gravel, clay, water
440	443	Hard shell
443	475	Tough red clay
475	550	Brown shale, light streaks
550	556	Hard brown lime
555	580	Hard grey lime
580	600	Flinty shells, brown sand, caves badly
600	660	Soft grey lime, red spots
660	662	Bright red shale
662	675	Hard grey lime
675	678	Red sticky shale
678	690	Hard red shell-Gas
690	717	Soft red shale-Gas
717	719	Fine dead water sand
719	720	Red sticky shale-Gas
720	730	Hard shell-Gas
730	755	Red conglomerate-Gas
755	765	Shells, soft sticky shale
765	820	Brown shale and grey lime
820	843	Grey water sand, water rose 15'
843	848	Fine water sand
848	873	Brown shale Gas
873	879	Hard brown shell
879	900	Bright red shale with hard shells, oil and gas shows
900	909	Red and brown shale, oil and gas
909	935	Fine water sand
935	965	Reddish brown shale, strong gas
965	975	Sand cuts, oil and gas
975	981	Hard lime shell
981	994	Hard brown shell
994-1000		Water sand
100-1010		Water sand
1010	1013	Sand cuts oil and gas
1013	1018	Shale and sand, gas
1018	1090	Gray lime
1090	1103	Lime, brown sand fell from above
1103	1128	Gray lime
1128	1143	Hard gray lime, oil and gas
1142	1186	Light brown sandstone
1186	1188	Sticky light blue clay, oil
1188	1193	Dark brown shale, oil and gas
1193	1200	Hard shell
1200	1210	Sticky brown shale
1210	1220	Soft sticky red shale
1220	1240	Firm red shale getting harder
1240	1288	Hard red shale, gas

#B-4

No permit

1288	1292	Hard red rock, gas and oil
1292	1293	Brown shale, best oil so far
1293	1310	Red sand, rock, shells, oil
1310	1315	Fine red sand, oil
1315	1338	Hard red shell

#13-4

No permit

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Summary Log

Chino Valley Oil and Devel.Co.-Chino Valley ~~#1~~ #1
32?
Sec 20-18N- 2W

TD 1338'--

Cores and Cuttings to 1295 at MNA --MNA Core No. 1236A.
(From information at the Museum of Northern Arizona)

0-845	Limestone
845-860	Claystone with limestone nodules
860	Limestone
875	Claystone
900	Limestone--dolomitic and generally silty
1175	Claystone--generally pale reddish brown
1270	Sandstone--pale brown
1295	Granite
1338	T.D

18 April 1949. - W. W. Stephenson, promoter of the Chino Valley Oil Co - states that ~~then~~ the Sec 20 well is one well throughout.

(HAVE smpl. Log)
(" Smpl. description)

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16

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REPORT ON WELL SAMPLES OF CHINO VALLEY OIL COMPANY
Examined by Edwin D. McKee, Consulting Geologist,
December 13th, 1941.

20-?-18N-2W.

All samples from 1350 to 2060 are of igenous and metamorphic rocks,-granites, schists and the intermediate type known as migmatite. Many could be determined directly from fragments of these rock types within the samples but a majority were determined on the basis of mineral contents. Analysis of the samples follows:

1640 Mostly quartz, coarse and fine; a little muscovite--A quartz vein or a quartzite.
1650 Fragments of schist; grains of muscovite and quartz-- A mica schist.
1656-1658-1660-1670-1680-1690-1695, Quartz, biotite, muscovite, a little orthoclase--a schistose granite or magmitate.
1725 Mostly quartz and orthoclase.-- A little musconite -- probably a granite.
1760 Mostly muscovite and very fine grained granite; some biotite and an unidentified white mineral.--probably schist.
1785 Biotite and fine-grained quartz--schist.
1795 Orthoclase, quartz, some biotite--Granite or mingatite.
1810, 1818 Granite fragments; orthoclase, muscovite, quartz--a fine grained granite.
1820, 1828 Quartz, orthoclase, biotite, muscovite--Granite or migmitate.
1846 Coarse mica and fine grained quartz, --Mica schist.
1868 A very fine grained micacous material, -- Mica schist.
1878-1880-1890-1912-1916-1925, Quartz, orthoclase, biotite, muscovite,--Granite or granitic rock.
1939 A very fine grained micacous material.--Mica schist.
1944 Fine quartz, some muscovite,--Schist.
1962,1957 Schist fragments, quartz, muscovite,--Schist.
1967,1973 Much muscovite, very fine quartz,--Mica schist.
1976,1980,1985 Schist fragments, very fine quartz, clay minerals, a little muscovite.-- Schist.
1990,2000 Fragments of argillaceous schist and granite.
2005,2012,2020 Much biotite, quartz orthoclase.-- Granite or granitic metamorphic rock.
2030,2045,2050 Much biotite and very fine quartz.-- Mica schist.
2055 Very fine grained micaceous material.-- Muscovite schist.
2060 Coarse grains of quartz, orthoclase, muscovite. --Granite.

OK
#13-4

4

No permit

32×

Sample Log on a portion of Chino Valley Oil Development . #1 State, 29-18N-2W.

By D. A. Holm, Consulting Geologist, Phoenix, Arizona.

All Devonian, acc to McKee report - LEAK

800	Light brownish gray sugary crystalline dense limestone
810	Same
824	Fine-grained light buff sub-round quartz sand with 50% calcareous material
845	Medium-grained to fine-grained light buff sub-angular to sub-round quartz sand with 60% calcareous material
860	Light pink sandy argillaceous marl with 10% coarse grains of ls & ss.
875	Light grayish brown crystalline dense sugary limestone.
890	Light pink sandy argillaceous marl with 10% coarse grains of ls & ss.
900	Bright pink argillaceous marl " " " " " " "
910	Gray dense crystalline limestone, 10% round quartz, 5% iron oxide stain.
930	60% gray dense crystalline limestone, 40% round quartz sand, pulverized.
950	Hard dense gray crystalline limestone, coarse fragments, 10% red clay & sand.
975	Gray sandy limestone, pulverized, 10% round quartz.
990	Hard dense fine-grained grey limestone.
1001	Light buff fine-grained sand, with sub-round quartz & calcareous material.
1010	50% dense gray limestone, 50% iron-stained sand....arkose? or unconformity?
1020	80% dense gray limestone, 20% iron-stained sand.
1030	95% dense gray limestone, 5% iron-stained sand.
1040	Dense blue-gray crystalline sugary limestone, with small amount of calcite.
1055	70% grey sandy limestone, 20% dense gray limestone, 10% sand.
1070	Dense blue-grey limestone.
1085	Light brown pulverized sandy limestone, 30% green limestone.
1110	70% light buff fine-grained limestone, 30% dark greenisg gray dense ls.
1130	60% pink Calcareous shale, 40% green calc. shale.
1150	Buff sandy limestone, pulverized.
1160	Gray argillaceous limestone, pulverized.
1175	Buff calcareous shale.
1190	Light tan calcareous clay, 10% dense limestone.

**********Total Depth May 8, 1940****

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#13-4

3.

Re permit

13-4

Well No. 1 - Chino Valley Oil Development Co.

Sec. 20 T. 18 N., R. 2 W.
SE¼ SE¼ NW¼

Arizona
Yavapai County
Chino Valley

0	250	red surface wash
250	262	red sand, gravel & clay
262	265	water sand
265	273	clay
273	385	streaks sand and clay
385	397	hard streak
397	440	shells, gravel & clay
440	443	hard shell
443	475	tough red clay
475	550	brown shale with light streaks
550	555	hard brown lime
555	580	hard grey lime
580	600	flinty shells, brown sand, caves badly
660	662	bright red shale
662	666	hard grey lime
666	675	grey lime soft streaks
675	678	red sticky shale
678	685	hard red shell
685	690	hard red shell; shows of gas
690	717	soft red shale; shows of gas
717	719	fine dead water sand
719	720	red sticky shale
720	723	hard shell
723	730	hard shell
730	734	conglomerate and gravel
734	735	sticky shale
735	742	hard shell
742	755	boulders and conglomerate
755	765	shells, soft, sticky shale
765	820	brown shale and grey lime
820	843	grey water sand - water rose 15 feet
843	848	fine water sand
848	873	brown shale - shows of gas
873	879	hard brown shell
879	900	bright red shale with hard shells, oil and gas
900	909	red and brown shale - oil and gas
909	935	fine water sand
935	965	reddish brown shale - strong gas
965	975	sand - cuts both oil and gas
975	981	hard lime shell
981	994	hard brown shell
994	1010	water sand
1010	1013	sand - cuts oil and gas
1013	1018	shale and sand - gas
1018	1090	grey lime - green, red, drab streaks
1090	1103	brown sand fell from above, lime; gas
1103	1128	grey lime
1128	1142	hard grey lime - shows of oil and gas
1142	1186	light brown sandstone - hard dark streaks
1186	1188	sticky light blue clay - oil showing
1188	----	dark brown shale - oil and gas showing

(incomplete log)

32 × 1

LOG

Chino Valley Oil Development Co.
Well Started August 11th, 1938

	Formation	
0 - 250	Surface Wash	Red
250 - 262	Sand, gravel and clay	"
262 - 265	Water sand	"
265 - 273	Clay	"
273 - 385	Streaks clay and sandy water	"
385 - 397	Hard streak	
397 - 440	Shells and gravel, sticky clay and hard streaks	
440 - 443	Hard shell	
443 - 475	Red clay tough	
475 - 550	Brown shale light streaks	
550 - 555	Brown hard limestone	
555 - 580	Grey lime hard	
580 - 600	Bad ground, flint shell, loose caves, brown sand, soft tall caves	
600 - 660	Soft grey lime, spots of red, white	
660 - 662	Bright red shale	
662 - 666	Hard grey lime	
666 - 675	Grey lime softer streaks	
675 - 678	Red shale sticky	
678 - 685	Hard red shell	
685 - 690	Gas, hard red shell	
690 - 717	Red shell, softer streaks, gas	
717 - 719	Fine dead sand water	
719 - 720	Red sticky shale	
720 - 723)	Hard shell	
723 - 730)	" "	
730 - 734	Conglomerate gravel	
734 - 735	Sticky shale, hard streaks	
735 - 742	Hard shells, sand and water, bad land	
742 - 755	Boulders cong.	
755 - 765	Shells, soft streaks, shale	) Gas and
765 - 820	Brown shale, grey lime shells	) oil
	3/10/39 - Lost tools 779 - Run 8-5/8 - Fished out 8/20/39	) show-
820 - 843	Grey water sand hard w rose 15'	) ing
843 - 848	Fine water sand	
848 - 873	Brown shale gas	
873 - 879	Hard brown shell - no gas	
(879 - 900	Bright red shale, hard shells - Lots of gas and oil	
(900 - 909	Red & brown " " " " " "	
909 - 935	Water sand fine	
935 - 965	Reddish brown shale, strong gas	
965 - 975	Sand, cut oil and strong gas	
975 - 981	Hard lime shell	
981 - 994	Hard brown shell	
994 -1010	Water sand	
1010 -1013	Sand oil and gas	
1013 -1018	Shale and sand	
(1018 -1090	Grey lime, green, red, drab streaks show	
(1090 -1103	Brpwn sand, fall from above, gas and lime	
(1103 -1128	Grey lime	

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No permit

May 7 1917

NE SW 20-18N-2W

LOG OF

CHINO VALLEY OIL DEVELOPMENT COMPANY

Thickness	Formation	Feet
Surface to 250	Red Surface Wash	250
250 to 262	Red Sand Gravel & Clay	12
262 to 265	Water Sand	3
265 to 273	Clay	8
273 to 385	Streaks Sand & Clay	112
385 to 397	Hard Streak	12
397 to 440	Shells, Gravel & Clay	43
440 to 443	Hard Shell	3
443 to 475	Tough Red Clay	32
475 to 550	Brown Shale with light streaks	75
550 to 555	Hard Brown Lime	5
555 to 580	Hard Grey Lime	25
580 to 600	Flinty Shells, Brown Sand, caves badly	20
600 to 660	Soft Grey Lime, red & white spots	60
660 to 662	Bright red Shale	2
662 to 666	Hard Grey Lime	4
666 to 675	Grey Lime soft streaks	9
675 to 678	Red Sticky shale	3
678 to 685	Hard Red Shell	7
685 to 690	" " " Shows gas	5
690 to 717	Soft Red Shale " "	27
717 to 719	Fine dead water sand	2
719 to 720	Red sticky shale	1
720 to 723	Hard Shell	
723 to 730	" "	10
730 to 734	Conglomerate & Gravel	4
734 to 735	Sticky shale	1
735 to 742	Hard Shell	7
742 to 755	Boulders & Conglomerate	13
755 to 765	Shells soft sticky shale	10
765 to 820	Brown shale & Grey lime	55
820 to 843	Grey water sand - water rose 15 feet	23
843 to 848	Fine water sand	5
848 to 873	Brown shale - shows gas	25
873 to 879	Hard Brown shell	6
879 to 900	Bright Red Shale with hard shells, oil & gas	21
900 to 909	Red & Brown shale - Oil & gas	9
909 to 935	Fine water sand	21
935 to 965	Reddish Brown shale - Strong gas	30
965 to 975	Sand - cuts both oil & gas	10
975 to 981	Hard Lime shell	6
981 to 994	Hard brown shell	13
994 to 1010	Water sand	16
1010 to 1013	Sand - cuts oil and gas	3
1013 to 1018	Shale & sand - gas	5
1018 to 1090	Grey lime - green, red, drab streaks	72
1090 to 1103	Brown sand fell from above, lime, gas	13
1103 to 1128	Grey Lime	25
1128 to 1142	Hard grey lime - shows oil & gas	14
1142 to 1186	Light brown sandstone - hard dark streaks	44
1186 to 1188	Sticky light blue clay - oil	2
1188 to	Dark brown shale - Oil & gas	

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Permit

(1128 -1132	Hard grey lime
(1132 -1142	Hard grey lime (show oil) gas
1142 -1186	Light brown sand, dark shells, gas
1186 - 1188	Very sticky clay, oil in mud
1188 -1193	Dark brown shale, oil and gas
1193 -1200	Hard shell
1200 -1210	Sticky brown shale falling) Shows oil
1210 -1240	Firm red shale) in mud.
1240 -1288	Hard cuts Bitts bad Gas
1288 -1292	Red rock gas show oil flow - Best oil show this far in well
(1292 -1293	Brown shale caving
(1293 -1310	Red sand, rock shells - oil
(1310 -1315	Fine red sand water (Granite thrust)
(1315 -1320	Hard red shell, caving from above
(1320 -1322	Water
1322 - 1340	Struck black oil, drill out cement at this level
1340 -1360	Brown shale and shells
1360 -1390	Blue lime gas flow 1389 - 1391
1390 -1396	Blue sand
1396 -1400	Soft grey lime
1440 -1465	Blue grey lime
1465 -1475	Same color getting harder
1475 -1480	Same color - very hard, Color of mud
1480 -1487	Light brown mud, softer formation
1487 -1496	Light brown, good drilling andpuddle
1496 -1535	Light brown, belt broke at 1507
1535 -1544	Light brown, same as above
1544 -1555	Hard grey shows mica
1555 -1570	Harder dark " "
1570 -1580	" " " "
1580 -1590	Hard grey lime, shows black mica
1590 -1600	Hard grey lime
1600 -1621	Loose sandy lime - set pipe
1621 -1628	Green shale
1628 -1640	Sand and red gravel - bad cave
1640 -1700	Blue sand
1700 -1758	Blue greyish lime - hard
1758 -1765	Light hard lime shell
1765 -1769	Green shale
1769 -1790	Lime
1790 - 1795	Coarse red sand
1795 -1818	Hard lime Set pipe
1818 -1828	" " " "
1828 -1833	Red sand, more water
1833 -1852	Lime hard - Set pipe 1842
1852 -1876	Grey sand soft with good oil showing
1876 -1916	Red and grey sand, Soft
1916 -1920	Red gravel
1920 -1926	Sandy lime shell
1926 -1937	Red and grey sand
1937 -1943	Sand shell grey hard
1943 -1949	Grey and red sand - Gas showing
1949 -1957	Blue shale

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LOG

Chino Valley Oil Development Co.
Well Started August 11th, 1938 Sec. 20 18 N. 2 W.

	Formation	
0 - 250	Surface Wash	Red
250 - 262	Sand, gravel and clay	"
262 - 265	Water sand	"
265 - 273	Clay	"
273 - 385	Streaks clay and sandy water	"
385 - 397	Hard streak	
397 - 440	Shells and gravel, sticky clay and hard streaks	
440 - 443	Hard shell	
443 - 475	Red clay tough	
475 - 550	Brown shale light streaks	
550 - 555	Brown hard limestone	
555 - 580	Grey lime hard	
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600 - 660	Soft grey lime, spots of red, white	
660 - 662	Bright red shale	
662 - 666	Hard grey lime	
666 - 675	Grey lime softer streaks	
675 - 678	Red shale sticky	
678 - 685	Hard red shell	
685 - 690	Gas, hard red shell	
690 - 717	Red shell, softer streaks, gas	
717 - 719	Fine dead sand water	
719 - 720	Red sticky shale	
720 - 723)	Hard shell	
723 - 730)	" "	
730 - 734	Conglomerate gravel	
734 - 735	Sticky shale, hard streaks	
735 - 742	Hard shells, sand and water, bad land	
742 - 755	Boulders cong.	
755 - 765	Shells, soft streaks, shale	) Gas and
765 - 820	Brown shale, grey lime shells	) oil
	3/10/39 - Lost tools 779 - Run 8-5/8 - Fished out 8/20/39	) show-
820 - 843	Grey water sand hard w rose 15'	) ing
843 - 848	Fine water sand	
848 - 873	Brown shale gas	
873 - 879	Hard brown shell - no gas	
(879 - 900	Bright red shale, hard shells - Lots of gas and oil	
(900 - 909	Red & brown " " " " " "	
909 - 935	Water sand fine	
935 - 965	Reddish brown shale, strong gas	
965 - 975	Sand, cut oil and strong gas	
975 - 981	Hard lime shell	
981 - 994	Hard brown shell	
994 -1010	Water sand	
1010 -1013	Sand oil and gas	
1013 -1018	Shale and sand	
(1018 -1090	Grey lime, green, red, drab streaks show	
(1090 -1103	Brown sand, fall from above, gas and lime	
(1103 -1128	Grey lime	

#13-4

13
See permit

(1128 -1132	Hard grey lime
(1132 -1142	Hard grey lime (show oil) gas
1142 -1186	Light brown sand, dark shells, gas
1186 - 1188	Very sticky clay, oil in mud
1188 -1193	Dark brown shale, oil and gas
1193 -1200	Hard shell
1200 -1210	Sticky brown shale falling) Shows oil
1210 -1240	Firm red shale) in mud.
1240 -1288	Hard cuts Bitts bad Gas
1288 -1292	Red rock gas show oil flow - Best oil show this far in well
(1292 -1293	Brown shale caving
(1293 -1310	Red sand, rock shells - oil
(1310 -1315	Fine red sand water (Granite thrust)
(1315 -1320	Hard red shell, caving from above
(1320 -1322	Water
1322 - 1340	Struck black oil, drill out cement at this level
1340 -1360	Brown shale and shells
1360 -1390	Blue lime gas flow 1389 - 1391
1390 -1396	Blue sand
1396 -1400	Soft grey lime
1440 -1465	Blue grey lime
1465 -1475	Same color getting harder
1475 -1480	Same color - very hard, Color of mud
1480 -1487	Light brown mud, softer formation
1487 -1496	Light brown, good drilling mudpuddle
1496 -1535	Light brown, belt broke at 1507
1535 -1544	Light brown, same as above
1544 -1555	Hard grey shows mica
1555 -1570	Harder dark " "
1570 -1580	" " " "
1580 -1590	Hard grey lime, shows black mica
1590 -1600	Hard grey lime
1600 -1621	Loose sandy lime - set pipe
1621 -1628	Green shale
1628 -1640	Sand and red gravel - bad cave
1640 -1700	Blue sand
1700 -1758	Blue greyish lime - hard
1758 -1765	Light hard lime shell
1765 -1769	Green shale
1769 -1790	Lime
1790 - 1795	Coarse red sand
1795 -1818	Hard lime Set pipe
1818 -1828	" " " "
1828 -1833	Red sand, more water
1833 -1852	Lime hard - Set pipe 1842
1852 -1876	Grey sand soft with good oil showing
1876 -1916	Red and grey sand, Soft
1916 -1920	Red gravel
1920 -1926	Sandy lime shell
1926 -1937	Red and grey sand
1937 -1943	Sand shell grey hard
1943 -1949	Grey and red sand - Gas showing
1949 -1957	Blue shale

#13-4

32 x

Chino Valley Oil Development - State #1.
Sec. 20, T. 16 N., R. 2 W (B-18-2)20
Yavapai County

Probably USGS

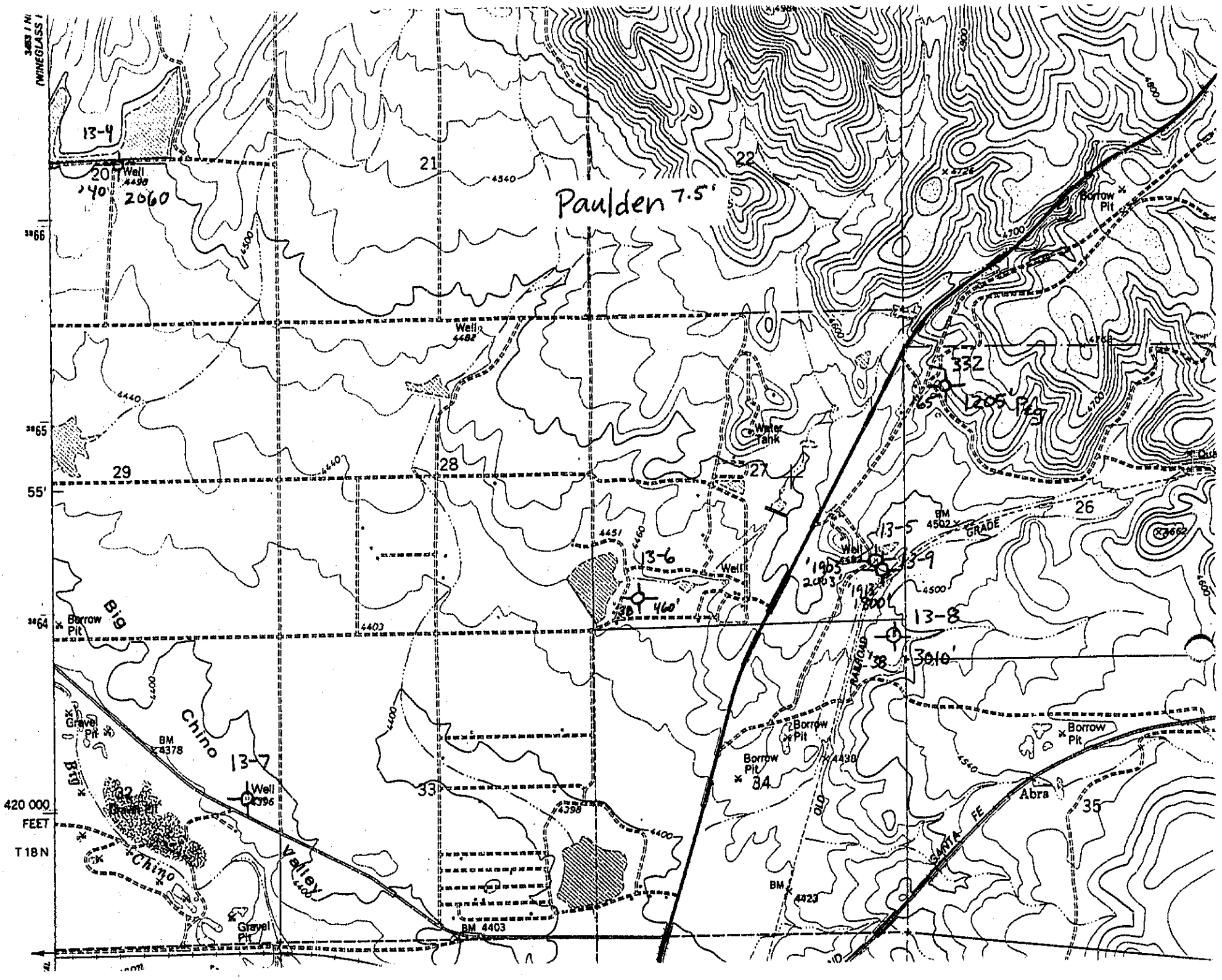
Depth	Name	Color	Texture	Cement	Matrix	Comments
600-740	Dolomite	Light brown, green	aphanitic	-	-	-
600-740	Clay	Pale red	do.	Iron	-	-
790-800	Limestone	Light brown, green	do.	-	-	-
800-810	do.	-	do.	-	Clay	-
810-824	Sandstone	Pale brown	fine sand	Lime		Contains some medium sand.
845	do.	do.	-	do.	-	Sorted grains
860	Claystone	Grayish orange pink	aphanitic	Lime	-	Iron stained; contains small angular fragments.
875	Dolomite	light brownish gray	do.	-	-	Contains small angular fragments.
890	Claystone	Pale reddish brown	do.	Lime	-	Some quartz and sandstone
900	do.	do.	do.	do.	-	Sorted grains, some quartz.
910	Dolomite	Grayish red	Medium sand	-	-	Contains some claystone with dolomite in it.
930	Sandstone	Pale yellowish brown	-	Lime	-	Sorted grains, some quartz.
953	Dolomite	Medium light gray	Aphanitic	-	-	-
975	Sandstone	Pale yellowish brown	-	Lime	-	Some quartz.
990	Dolomite	Pale red	Aphanitic	-	-	Contains silica with iron oxide.
1000	Sandstone	Pale yellowish brown	medium sand	Lime	-	Poorly sorted.
1010	Dolomite	Grayish red	coarse sand	Lime	-	A little quartz, sorted grains
No record						

Chino Valley Development - State #1 (Cont.)

Depth	Name	Color	Texture	Cement	Matrix	Comments
1020	Dolomite	Pale brown	coarse sand	Lime	-	-
1030	Limestone	Pale yellowish brown	medium sand	-	-	A little quartz, sorted grains.
1040	do.	Light bluish gray	aphanitic	-	-	-
1055	do.	Light brownish red	do.	Lime	-	Small mica particles
1070	do.	Light brown red	do.	-	-	-
1085	Dolomite	Pale red	do.	Lime	-	Angular
1110	Limestone	Pale red	coarse to very coarse	-	-	Poorly sorted
1130	Dolomite	Pale red; pale and yellowish green	very coarse	Lime	-	Shaley
1150	Claystone	Pale yellowish brown	Medium sand	Lime	-	Some fine sand.
1160	do.	do.	medium	do.	-	Sorted.
1175	do.	Grayish orange	do.	do.	-	do.
1200	Limestone	Moderate brown	fine	-	-	Some iron stain, some medium grains.
1210	Claystone	Light brown	Aphanitic	Lime	-	Angular fragments.
1220	do.	Moderate brown	do.	do.	-	-
1230	do.	Light moderate brown	do.	do.	-	-
1240	do.	Moderate brown	do.	do.	-	-
1250	do.	do.	coarse	do.	-	-
1260	do.	Pale reddish brown	very fine	do.	-	Some fine grain
1270	do.	do.	coarse	do.	-	Some quartz
1295	do.	Pale red	very fine	-	-	Some mica

Note: E. D. McKee reports granite below 1295 feet.

Appendix X


Paulden 7.5'
13-4
20
Well
4490
2060
21
22
4540
4500
4600
4700
Borrow Pit
Well
4482
Water Tank
27
28
29
26
332
1205'
13-5
BM 4502
GRADE
13-6
Well
460'
Well
1955
2003
13-9
1912
1800'
13-8
3010'
38
Big
Borrow Pit
Chino
Gravel Pit
BM 4378
13-7
Well
4396
33
Borrow Pit
4430
Borrow Pit
34
Borrow Pit
Abra
35
Chino
Valley
Gravel Pit
BM 4403
4398
4400
BM 4423
OLD
SANTA FE
1 420 000 FEET
T 18 N
55'
3866
3865
3864

T.	R.	
18N	2W	Chino Valley Oil Devs. COMPANY
		Estate NO. 1
30		COMMENCED 1938
		COMPLETED 19
ELEVATION		REMARKS: Cable tool.

1 of 3

100 Surface wash red

200

Red sd, gravel & clay
sd, blocky water
sd & clay - water

300

sd & clay - water

400 hard red shell (lime?)
sd shells, green shaly clay, water well
tough shaly clay

500 Brown sh. with light streaks
hd brown lm ← top Rubicelli lm
hd gray lm
600 Red ground, hd flint shells & coarse sand, brown gravel & sd.
soft gray lm
bright red sh.
lm
hd red shell
700 gas - hard shell gram
hard shell - gas
hd gravel
hd red shell gas
hard red & coarse
shell with zephyrstreaks - red. bottom hole at 1940 ft.

800

900

1000

1100

1200

14

32 × 8

PRESCOTT
T. 18N
R. 2W
VAVADAI
COMPANY
COMMENCED July 19 38
COMPLETED 19
REMARKS:
ELEVATION
Sample Pg
2 of 3
100
200
300
400
500
600
700
800
900
1000
1100
1200
13

T.
R.
Dep
600
600
790
800
810

32×10

25×100

NESW 20	YAVAPAI CO
T. 18N R. 2W	Valley China Oil Development COMPANY
	State NO. 1
0	COMMENCED July 19 38
ELEVATION	COMPLETED 19
	REMARKS:

3 of 3

100

200

300

400 Hard streak - (sd.?)
Shells, gravel & clay

tough red clay

500 brown sh

hd brown lt

hd gray lt

Flinty shells, brown sd, cave, bad

600 soft gray lt, red & white specks

gas

700

steady water sd

brown sh & gray lt

800

gray water sd water rose to

dk gray

bright red sh with hd shells

900 gray oil & gas

fine water sand

med-brown sh - green

dk gray

1000

gray lt, green, red, dark streaks

1100 brown sd

brown sd

1200

No Permit

32 × 8

20 YAVAPAI Co.

T. 18N R. 2W

Chino Valley Oil Devel. COMPANY

State NO. 1

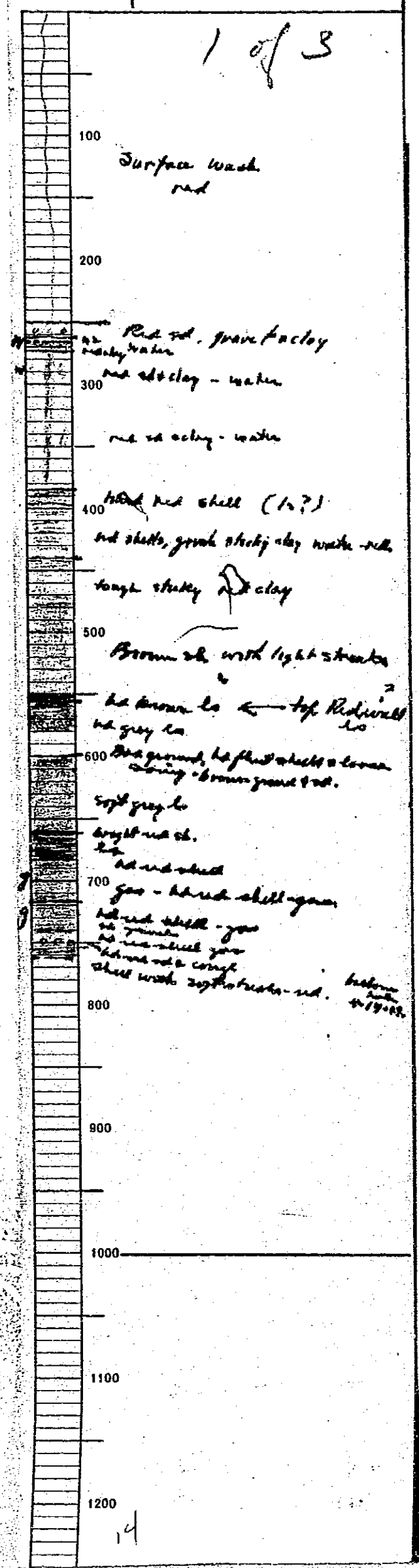
COMMENCED 1938

COMPLETED 19

ELEVATION

REMARKS: Cable tool.

1 of 3



14

NESW 20

T.	R.
18N	2W

ELEVATION

VAVAPAI Co

Chino Valley Oil Dev COMPANY

State NO. 1

COMMENCED July 19 38

COMPLETED 19

REMARKS:

Sample Log

2 of 3

100

200

300

400

500

600

700

800 light brownish gray xline ls

fine-gr. buff gts sd 50% calc

med to fine-gr gts sd 60% calc

pink sdy argill. marl 10% sdy ls

gray brown dense ls

pink sdy arg. marl 10% sdy ls

900 pink arg. marl

gray dense ls 10% gts 5% iron oxide stain

60% " " 40% gts sd pulverizing

hd gray ls 10% red clay + sd

gray sdy ls 10% gts

hd gray dense ls

1000 lt buff sd - calc

50% ls 50% iron stained sd

80% ls 20% " " "

95% ls 5% " " "

dense gray xline ls

70% gray sdy ls 20% gray ls 10% sd

dense gray ls

brown sdy ls - 70% green ls ← base M. ls? top Devon?

1100 70% buff ls, 30% green gray ls

60% pink calc sh 40% green calc sh

buff sdy ls pulverizing

gray arg. ls

buff calc sh

light tan calc clay

1200

13

NE SW 30 | YAVAPAI CO

T.	R.
18N	2W

COMPANY: Chino Oil Development

State No. 1

COMMENCED July 19 38

COMPLETED 19

ELEVATION

REMARKS:

3 of 3

100

200

300

400 Hard streak - (sd ?)

Shells, gravel & clay

tough no clay

500

brown sh

hd brown ls

hd gray ls

600 Flinty shells brown sd caving badly

soft gray ls, red & white specks

700 gas

deep water sd

brown sh & gray ls

800

gray water sd water rose 15'

gas

900 brighter red sh with hd streaks oil & gas

fine water sand

red-brown sh - gas

oil

1000

oil

gray ls, gray sd, dark shales

1100 brown sd

Brown sd

1200

Mc Dermott

32 ×

March 22, 1949

Mr. W. W. Stephenson
Paulden, Arizona

Dear Mr. Stephenson:

Thank you very much for the information that you forwarded regarding the Chino Valley Oil Development Company wells drilled near Paulden. We have made copies of the information you forwarded us and are returning the originals to you.

You may be interested to know that for some time we have had on hand a log of the Heslet well but were unable to tie it down to any location. Your information has definitely shown that the well is identical to what we were calling the Anthony-Discovery Well, and that is just one more point that you have helped clear up.

As soon as the office has finished mimeographing the complete list of deep well tests in Arizona I will forward you a copy as a small thanks for the information that you have given us.

Very truly yours,

L. A. Heindl
Geologist

LAH:kb
encl.

No permit

32 × 1

W. W. STEPHENSON
PAULDEN, ARIZONA

RECEIVED
MAR 14 1949
STATE LAND DEPT.
OF ARIZONA

Mch 11th-49

Mr L. A. Heindl
State Land Dept.
Phoenix, Arizona.

Dear Sir;-

Confirming our conversation relative to well records in Chino Valley, I find that during the fire of May 1948, the greater part of these records were damaged beyond recovery, however I have selected, and am enclosing herewith, enough data that you may restore records of the development.

The log of C.V.O.D. #1 is correct down to 2060, where granite was encountered in various forms to 2800, and as I remember the well bottomed around 3100, still in granite.

Well # 3 log destroyed but formation didnot conform with #1 down to 1400 ft, where granite was first encountered, and as I recall the bottom was around 1600 ft, drilled with rotary rig.

I cannot vouch for the logs of the Heslet well, or the first Lyons well, but you recall the derrick beside the road of the 2nd well called the Aricopa, this was a water well some 250 ft, and no well for oil started.

Very truly yours,

W. W. Stephenson

P.S. You can have copies made, returned W.W.S.

No permit

32 × 1

Arizona-Oklahoma Gas & Oil Company, Inc.

Organized Under the Laws of Arizona

OFFICES:

Union Building, Prescott, Ariz.

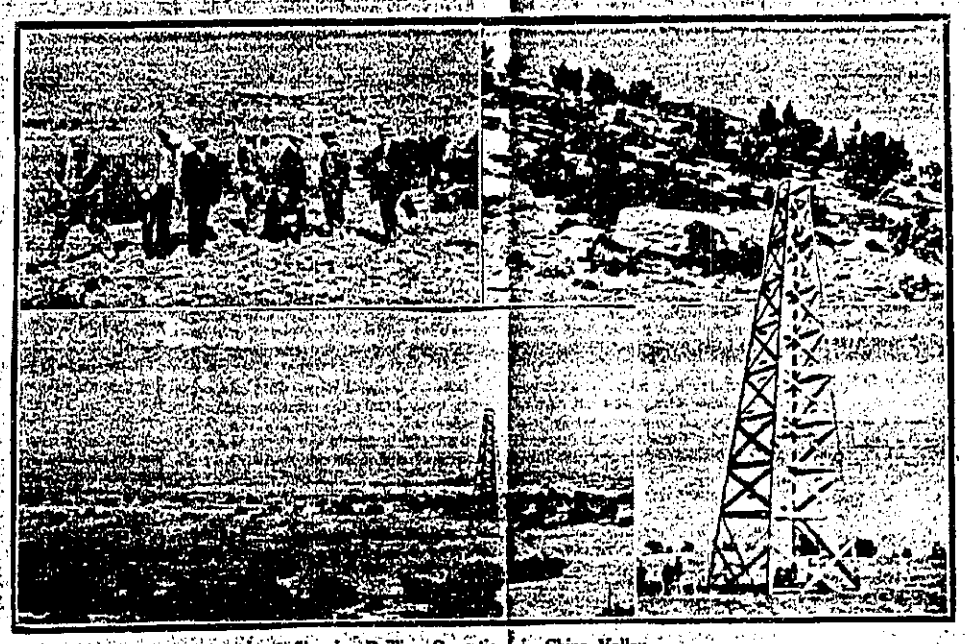
Box 338

OFFICERS:

President, W. M. Poulson; vice-president, L. D. Nuneley; secretary and treasurer, S. P. Shull; general manager, Col. Fred Bowler.

DIRECTORS:

Dr. A. B. Carmichael, Col. Fred Bowler, W. M. Poulson, L. D. Nuneley and S. P. Shull.



Showing Drilling Operations in Chino Valley.

CAPITAL

One Million Dollars ($1,000,000) Divided Into 1,000,000 Shares, Par Value $1.00

Fully Paid and Non-Assessable

Properties

The Arizona-Oklahoma Gas & Oil company owns and controls 3,200 acres of land in the Chino valley, Yavapai county, Arizona, and 4,000 acres of land in the proven oil fields of Kansas, Oklahoma and Texas.

At the present time the eye of the oil and gas men of the country are centered on the Chino valley oil fields in Arizona, where active exploration operations on a large scale are being prosecuted. This comparatively newest oil field that has sprung into the lime light, is a few miles northwest of Jerome junction, a station on the Prescott and Santa Fe railroad, southwest of Ash Fork and northwest of Prescott, Arizona, where the newest oil boom is under full way.

The opening of this oil field in Arizona will mean the beginning of an oil boom duplicated only by the activities prevailing in Wyoming, which are making new millionaires almost daily. It is predicted that in the near future there will be hundreds of other companies operating in this field.

Various oil geologists and experts, including a noted official of the Standard Oil company, have examined and reported most favorably on this field. A noted oil geologist recently said: "I wish to say that in my experience, covering nearly every oil field on this continent, I have never seen any unfested locality that presented so many favorable features for oil as the Chino valley, Arizona. Geological conditions are correct, grading ground is of large area. The existence of oil in Chino valley field and the saturated rocks are conclusive evidence that there is oil there."

Geological Elements Necessary for and Oil Field Do Exist in Chino Valley.

Oil has actually been struck in drill holes in Chino valley. The geological conditions all point to immense oil pools to be opened by drilling.

shales are covered with an impervious rock that prevents the escape of the oil and gas to the surface.

There is a suitable structure in the form of an arch, generally called the "anticline" or "dome," as a reservoir to hold the oil in a bed or pool. There is a large area of gathering ground or drainage area. This means the arch or anticline should be flanked on either side by a wide syncline or water area.

The above statements are verified by reports of different geologists and the log of the discovery well drilled ten years ago, which proved the existence of the oil.

Log of Discovery Well

At 280 feet water was first encountered, but was not cased off.

At 400 feet sandstone was encountered and was drilled through to a depth of 75 feet, after which shale was struck to a depth of 1,383 feet, where the cap rock was encountered.

Passing through the cap rock 110 feet of oil sand, containing a high paraffine base oil, was found.

By reason of the great column of water, through which we were drilling, it was impossible to determine the quantity of oil that this well was capable of producing," says J. L. Wiley, who was in charge of the drilling, "but in view of the fact that the oil was forced to the surface of this column of water by the gas pressure below, would indicate that a tremendous oil production should have been the result of our efforts, had water been properly cased off in the beginning, after we struck it at 280 feet.

"I would add further that there was no casing used below the 1,400-foot level, thus accounting for the many points at which cave-ins took place. That [illegible]"

The Arizona-Oklahoma Gas & Oil Company Will Drill—No Fake

The character and personnel of the officers and directorate are of the highest character and they will positively drill for oil in the best selected site in the Chino oil field. Their employes are experienced oil men, taken from active service in large oil fields. There will be no experimenting with small rigs. The company is equipping itself with a standard rig heavy enough to reach a depth of 5,000 feet if necessary, as its board of directors are experienced oil men. General Manager Fred Bowler, a graduate mining engineer of long practical experience, is a successful driller himself in other fields.

Arizona-Oklahoma Gas & Oil Company is now offering what is left of the original block of 150,000 shares of stock, which permission to sell was granted by the corporation commission of Arizona at one dollar per share. The proceeds to be used to drill for oil. Most of the stock sold has been purchased in Arizona by people familiar with the Chino oil field.

Buy Now and Reap Later

The remainder of the stock for sale is going rapidly. Soon the books will be closed. Buy now before it is too late. A few dollars invested now may be worth thousands in less than a year. Such things have happened recently in California, Wyoming, Oklahoma, Texas and Kansas oil fields. Be an "I did" and make quick money, not a "wish I had" and be broke.

UNIVERSITY OF ARIZONA
TUCSON
ARIZONA STATE BUREAU OF MINES

Jan. 2, 1918

Chino Valley Oil Co.
Phoenix, Ariz

Gentlemen:

Our Mr. Allen is about to make a reconnaissance of the oil situation in the Chino Valley, starting on Monday the 7th. We would be glad if you would give us the names of your officers or those with whom he will communicate in Phoenix,

Yours very truly,

Charles F. Willis
Director.

CFW.H

32 × 1

Reconnaisance of the Chino & Verde Valleys of Arizona

Introductory

By M.A. Allen (?) 1920s [1918]

The tremendous publicity which certain fields of Arizona are receiving with regard to the possible occurrence of oil in commercial quantities, and the interest the public has taken in Arizona's oil possibilities, has prompted the Arizona State Bureau of Mines to make a rough reconnaisance of the possible fields. This reconnaisance was short, unfortunately, and was not in the nature of a geological investigation which would have taken considerable time and funds, which are not available. The weather conditions were very adverse, snow considerably hampering a part of the investigation. In fact the visit to the Holbrook district had to be abondemed because of the depth of the snow, but it is expected that a visit to that field will be made in the spring. The fields which are considered in the report are the Chino, and the Verde Valley fields. The writer wishes to take this opportunity of thanking the officers of the Arizona Oil & Refining Co., Mr. C.L.Dunbar, and Messers Coleman, and King for the assistance rendered and the facilities extended during his visit to the fields.

Chino Valley Field

The Chino Valley field is situated in the northern part of Yavapai County, and embraces the whole of the Black Forest Mesa, comprising an area of about ten townships as follows:

T 17N R1W T 17N R2W T 18N R1W

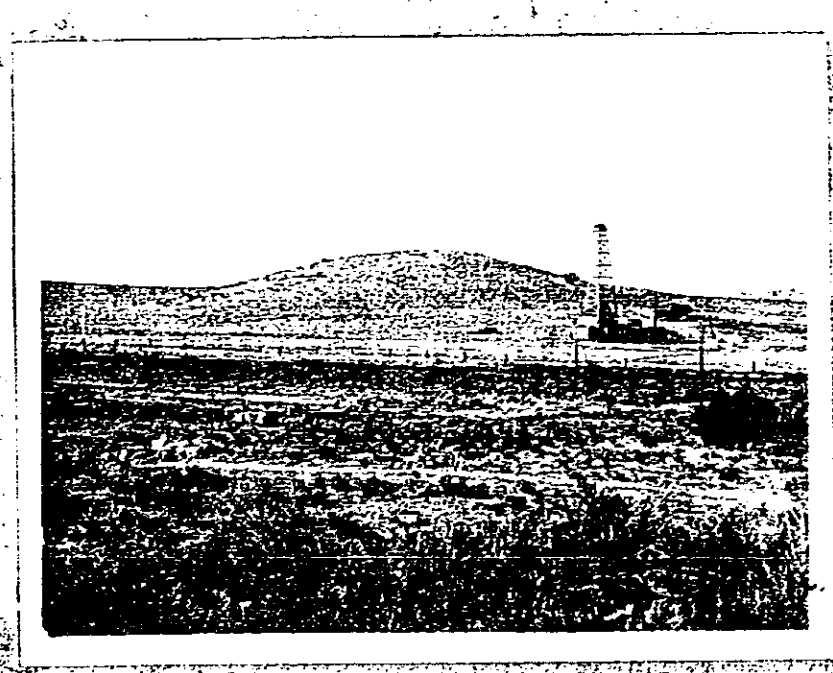
T 18N R2W	T 18N R3W	T 19N R2W
T 19N R3W	T 19N R4W	T 20N R3W
	T 20N R4W	

Valley Station, which is in the Southeastern part of the field, is about twenty five miles north of Prescott on the Ashfork & Phoenix branch of the Santa Fe Railroad.

History

Oil indications have been known in Chino Valley for a number of years. In 1905 O.A.Jones, after a careful survey of the Valley, reported that favorable indications of oil existed.

Some years ago, J.C.Hoslit formed a company known as the Chino Valley Oil & Mining Co., which raised sufficient money to put down a test well, a photograph of which is given herewith.



This well was drilled about a half mile north of Valley Station. It appears that considerable difficulty was encountered in drilling and casing the well; in any event, the water met with at the 280 foot

level does not seem to have been cased off. No absolute log of this well seems to have been kept, but given herewith are some extracts from an affidavit made by one of the drillers of the well.

Sworn Affidavit of the Discovery of Oil in Arizona:

State of Arizona:
:ss
County of Maricopa:

I, J.I.Wiley, being first duly sworn, deposes and says: I know there is oil in the Chino Valley, Yavapai County, Arizona: I assisted in the discovery of oil in the well drilled by the Chino Valley Oil & Mining Company on Section 27, Township 18 North, Range 2 West, Gila and Salt River Meridian, Yavapai County, Arizona. The records of the log of this well showed the following:

At the 280 foot level water was first encountered, but was not cased off;

At the 400 foot level sandstone was encountered and was drilled through to a depth of 75 feet, after which shale was struck to a depth of 1383 feet, where the cap rock was encountered;

Passing through the cap rock 110 feet of oil sand, containing a high paraffine base oil was found.

By reason of the great column of water, through which we were drilling, it was impossible to determine the quantity of oil that this well was capable of producing, but in view of the fact that oil was forced to the surface of this column of water by the gas pressure below, it would indicate that a tremendous production should have been the result of our first efforts, had water been properly cased off in the beginning.

32 ×

I would add further, that there was no casing used below the 1400 foot level, thus accounting for the many points at which cave-ins took place. That was the cause of the loss of this well.

J.L.Wiley

Before me J.R.Price a notary public in and for the County of Maricopa, State of Arizona, on this day personally appeared Mr. J.L.Wiley, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same.

Given under my hand and seal of office this 9th day of November, 1917.

J.R.Price
Notary Public

My commission expires
June 5, 1918

A considerable number of companies have been formed and have taken locations in the Chino Valley field, besides numerous private individuals. At the present time the Arizona Oil & Refining Co., and the United Chino Oil Co., and the Arizona Del-Rio Oil Co. are the only companies which have been granted permission to sell stock by the Arizona Corporation Commission.

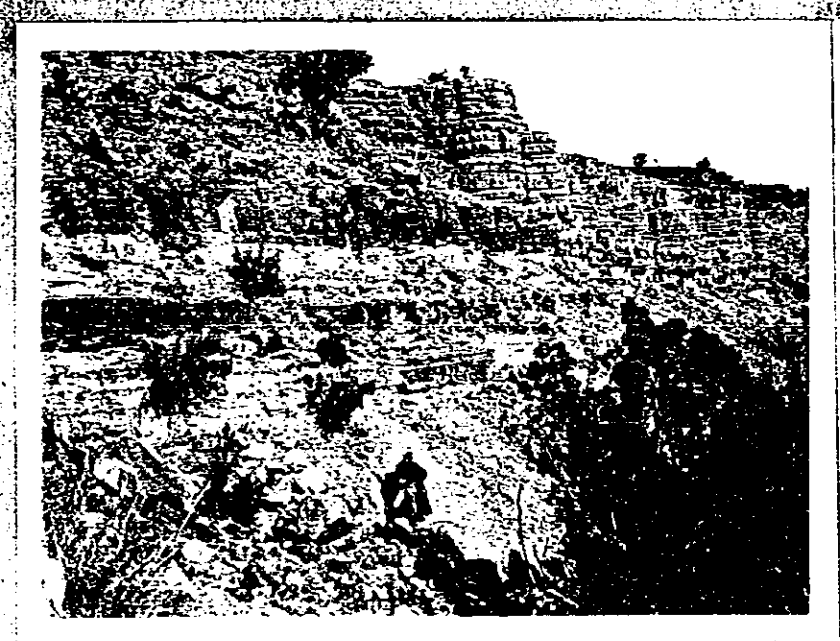
The Arizona Oil & Refining Compnay has now its derrick errected at a place one half mile southeast of the discovery well of the Chino Valley Oil & Mining Company. The complete drilling rig is on the field, necessary bunk houses errected, and drilling operations will

probably commence the middle of January. The Arizona Del-Rio and United Chino Oil Companies will probably be sinking their test wells within a few months.

Geological

Reports on this field have been made by J.Roland Seger, Etienne A.Ritter, and others.

The geological conditions under which oil is found are discussed fully in Bulletin 69, by the same author. It is reported that there are many surface indications of oil in the Chino field, two of which were examined by the author. One was an exposure of limestone in the walls of the canyon of the Verde River at a point a little north of the Junction of Chino and Granite Creeks. A photo of this point, together with a view down the canyon is given herewith.



The exposure referred to is marked by a cross on the photo. Eight miles northwest of this part, another indication of oil was found. There is also the sworn affidavit of the driller of the well of the Chino Valley Oil & Mining Co., given in the previous part of this report.

Structural Conditions

The field is transversed by a distinct anticlinal structure, the axis of which approximates a NW and SE direction, and which is distinctly marked by the Black Forest Mesa. The southwest flank of the anticline dips at an angle of approximately 11 degrees, and gradually flatterns out into the syncline which is occupied by Page Flat, through which Chino Creek runs. The dip of the strata can be seen in the small hill behind the derrick in the first photo in this report. The old well and the new test well of the Arizona Oil & Refining Co. are located on the southwest flank of the anticline. The northwest flank of the anticline does not appear to dip at a great angle and in places appears flat; the dip of this flank can only be determined by

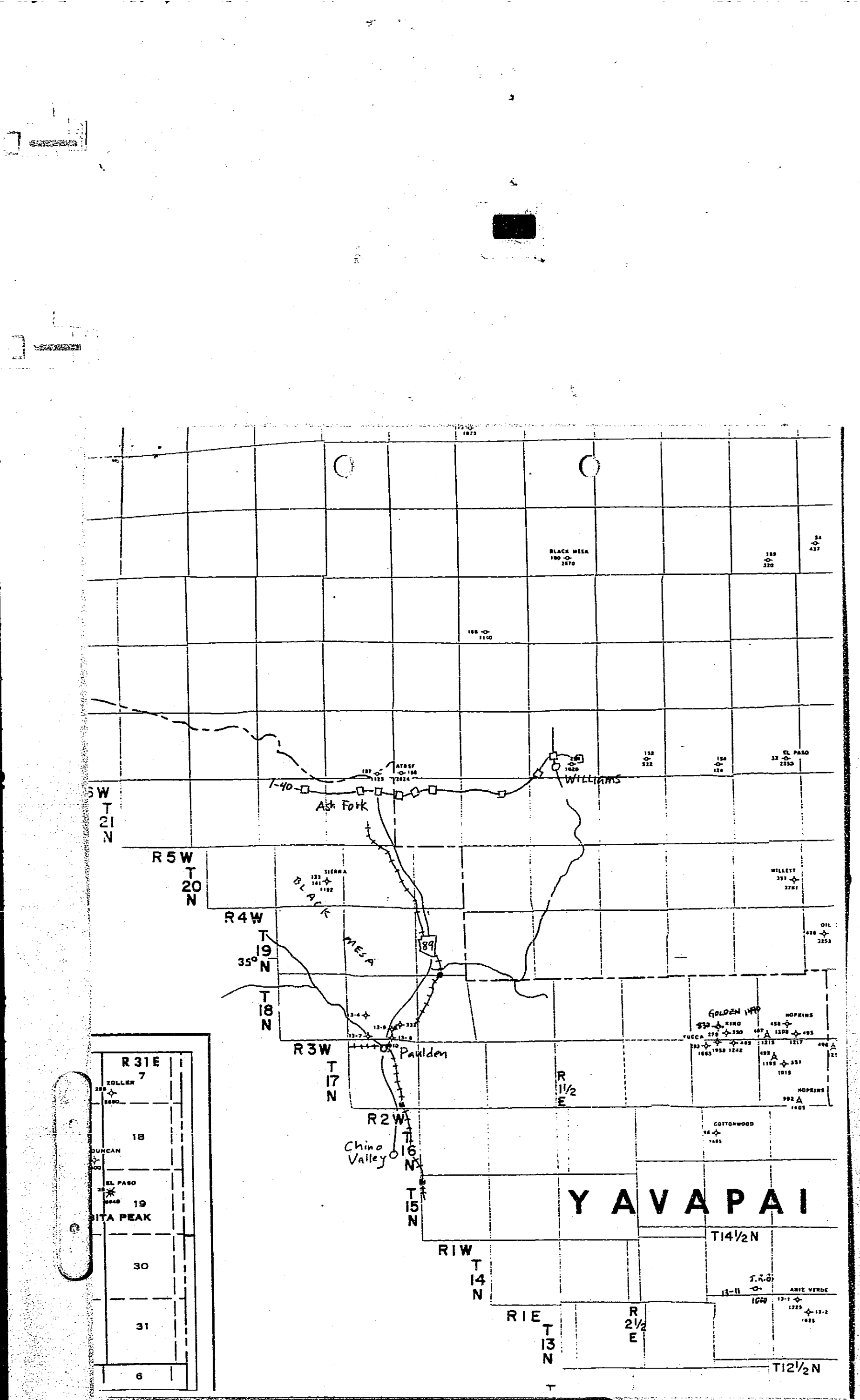
careful survey. In fact, to accurately determine if favorable structural conditions exist to the north, east, south, a careful stratigraphical survey should be conducted. Whether this has been done or not, the writer was unable to ascertain.

From the geological work which has been done by N.H.Porter, H.E.Gregory, and F.L.Parsons, all of the U.S.G.S. Survey, on northern Arizona and the immediate vicinity of the Chino Valley, together with the geological field data gathered in Chino Valley by the writer, the formation of the Black Forest Mesa may be considered to be of the Redwall of the Mississippian which is Carboniferous ~~Kaibab formation of the Pennsylvanian series which is of carboniferous age.~~ From the known thickness of the strata exposed at the Grand Canyon and Jerome, and considering the limestones of the Redwall ~~Kaibab~~ exposed on the Black Forest Mesa, the sedimentary strata in the Chino Oil field is very thick, considerably deeper than 1850 feet, the water depth of the discovery well.

The nearest field in which oil occurs in the same geological series as that of the Chino Valley(Pennsylvanian) is the San Juan field of Utah, just north of the Utah Arizona State line.

Conclusion

The existance of oil in commercial quantities in the Chino Valley and Verde Valley fields can only be determined by sinking test wells. There is no doubt that the indications exist which warrent an investigation. In order that these test wells should prove the fields beyond a doubt, and that possible productive fields should not be condemned, sufficient geological and stratagraphical investigations should be done, to prove that an anticlinal structure favorable to oil accumulation exists, and test wells should be sunk in places determined by the results of the survey. Drilling rigs used should be capable of reaching a considerable depth, say from 3500 to 4000 feet, in order to prove the question of depth beyond a doubt.


BLACK MESA
I-40
Ash Fork
WILLIAMS
R5W
T
21
N
R5W
T
20
N
R4W
T
19
N
35°
T
18
N
R3W
T
17
N
Paulden
R2W
Chino Valley
T
16
N
T
15
N
R1W
T
14
N
R1E
T
13
N
R
1½
E
R
2½
E
YAVAPAI
T14½N
T12½N
R31E
7
18
19
30
31
6
ZOLLER
DUNCAN
EL PASO
SITA PEAK
SIERRA
BLACK
MESA
89
GOLDEN
HOPKINS
TUCCA
COTTONWOOD
ARIZ VERDE
WILLETT
OIL

the prospectus for developing commercial wells warrants the expenditure necessary to demonstrate same. I find the geology, what is known to practical oil men as " Oil Showings" all on one side, and the lack of legitimate drilling tests prove the showings of the other.

E. Ronald Sasse

I have recently concluded a personal examination of the District known as the Chino Valley which is the exception to which I have heretofore referred. I learned that this district has been under favorable consideration ~~xx x xxx~~ for the prospects of oil for a period of about ten years past, and that reports from oil geologists and reputed practical oil men have been more or less favorable to this district; notable among the geologists who have recently and favorably reported upon the Chino Valley oil stratification is Dr. Etienne A. Ritter, mining Engineer, Doctor of Sciences, Member of the American Institute of Mining Engineers, of the Institute of Mining and Metallurgy.

In. T- 18 Range 2 east, there has been a well drilled, reaching a depth of approximately 1900 feet. I learned from Local history that this well was started a number of years ago by local people and as the result of lack of knowledge of the formation which they would be likely to encounter, they were compelled to give up drilling at about 1900 feet. It appears that if there was any log of the well kept, it has been lost, and the only information procurable was from people who lived in the vicinity at the time of the operations and some who claimed to have been engaged in the drilling. I am satisfied from the statements and data available that the well was drilled through about about 100 feet of Oil Sand and that the showing for Parafine Oil of high gravity was remarkably good. I learned that recently a new company was organized to take over this well, and it is now prosecuting work for the recovery of same under the direction of Mr. John Dartt, a man whom I know personally and who bears the reputation of a thorough and competent oil driller.

3Rd:-- That above the cretaceous lime there is a sufficient body of porous sandstone and shale to receive and carry the oil.

4 th:-- That the porous sandstone and shale be covered with an impervious rock to prevent the escape of gas to the surface.

5 th:-- That there must be a suitable rock structure in the form of an arch ,generally called the Anticline or dome,as a reservoir to hold the oil in a bed or pool.

6 th:-- That there must be a large area of gathering ground or drainage aor. This means the arch or anticline should be flanked on either side by a wide synoline or water Aor.

7 th:-- The presence of sufficient water in the sands of the synoline to force the oil toward the crest of the xxx crest of the Area and hold it there.

There is an abundance of evidence in this field of the cretaceous limes with their various contents to insure the base from which Oil and Gas are created. There are many indications of the porous sandstone and shale to collect the oil, and convey same, also the necessary strata of rock to form an impervious or oil tight cover for oil bearing sandstone shale,that the arch or anticline is a most excellent structure for the storing and holding of oil is known to be plainly evident.

This Oil structure is located on an extensive anticline of Carboniferous limestone called the Black Forest Mesa . Nearly all of the Geological formations found there are exposed in the Grand Canyon of the Colorado to the Northwest,and again in the Jerome Mining District to the South east.

In making an approximate estimate of the thickness of the various formations,one can only try to strike a general average of the exposures at the Grand Canyon and Jerome. I would estimate that it would be more than 2500 feet to the bottom of the sedimentaries of possible oil formations included in this anticline.

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Mr.Dartt personally informed me that from the bailings and by the limited amount of progress which he has been able to make since taking charge of the well, he has entire confidence that the well is an Oil well,whether or not they will be able to recover it owing to the present conditions ,it must certainly prove the discovery and location of a large oil basin which should produce many wells of commercial importance .

This well which I consider the Discovery Well, is equipped with Standard Derrick and with an outfit adequate to substantially prosecute the work,and it is expected that it will be only a short time until the Oil sands will be shot to give the well a satisfactory testing. My conclusions as to this well are very encouraging as to the prospect or probability that oil has been encountered which will shortly prove to be of commercial quantity and of unusually high quality ,being paraffine base ,high gravity.

While this well was located by a man of some reputation as an Oil locator ,it is evident from the Geological formation(See Map of District) that the well was located a considerable distance from the crest of the Anticline,and any oil showings made in this well should prove absolutely that wells drilled higher on the anti cline would result in much more oil.

I will now take up briefly the geological elements taht must exist to make possible oil fields;

First:-- That the district is so situated that the cretaceous sea, left sufficient deposits of its various elements,fossils,etc.,necessary to make the Oil.

2nd:--That there is sufficient quantities of lime salts, etc ., to create the necessary chemical action to make the oil.

3Rd:-- That above the cretaceous lime there is a sufficient body of porous sandstone and shale to receive and carry the oil.

4 th:-- That the porous sandstone and shale be covered with an impervious rock to prevent the escape of gas to the surface.

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Probably a considerable less depth.

The fact that no proven oil well has as yet been discovered in Arizona is no indication that there should not be oil in this state as I have heretofore stated ,the various attempts made to drill have no bearing from a standpoint of a thorough test.

The nearest oil producing fields to this State are in Southern California. However, the indications in Chino Valley district can be likened to the field of the Colorado-Wyoming and Mid-Continent fields,as the California Oil Fields produce an asphaltic base oil, the indications here are of a Paraffine base. This is a very favorable point for the field as there is a wide margin between the price of Asphaltic and Paraffine base oils. High grade paraffine crude is today quoted at around $3 per barrel, while Asphalt is about $1,and it is a certainty that paraffine base oils will go higher as the production of the eastern fields is rapidly becoming exhausted, also the demand for the by-products of paraffine base are being more and more used in the manufacture of analyne dyes and other chemicals. hence, paraffine base oils will always command prices far in excess of the asphalt base crude.

In conclusion, I wish to say that in my experience covering nearly every oil field on this continent,I have never seen any other untested location that presented so many favorable features as this one. The geological conditions are correct, Gathering ground is of large area,the existence of oil in the Chino Valley well and the oil saturated rocks are conclusive evidence that there is oil. The formations are of the approximate age and character of the great mid-continent field,and finally,water is easily obtained and transportation close at hand.

Respectfully Submitted,

(Signed) E.RONALD SAGER,

Oil Geologist.