

DEQ MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER & RADIOLOGICAL PROTECTION DIVISION

WATER WELL AND PUMP RECORD

Completion is required under authority of Part 127 Act 368 PA 1978
Failure to comply is a misdemeanor

TAX NO:

PERMIT NO: **4496**

1. LOCATION OF WELL
County **ARENAC**

Township Name **ADAMS**

Fraction **SE 1/4 SW 1/4 NE 1/4**

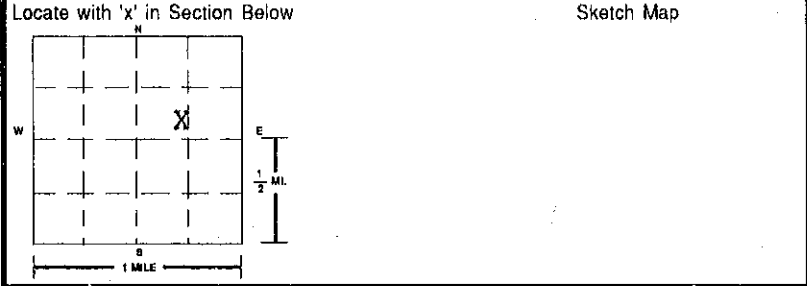
Section No. **14**

Town No. **19 N**

Range No. **3 E**

Distance and Direction from Road Intersection

Street Address & City of Well Location



3. OWNER OF WELL **Don Benchley**
Address **6670 Lucas Rd. Sterling, MI 48659**
Address Same as Well Location Yes No

4. WELL DEPTH: **67** ft. Date Completed **3 / 13 / 98**
 New Well Replacement Well

5. Cable Tool Rotary Driven Dug
 Hollow Rod Auger/Bored Jetted

6. USE: Household Type I Public Type III Public
 Irrigation Type IIa Public Heat Pump
 Test Well Type IIb Public **Garage**

7. CASING: Steel Threaded Plastic Welded Other
Height: Above Surface **XXXX** ft. Surface: **1** ft.
Diameter: **2** in. to **62** ft. depth Weight: **3.75** lbs./ft.
BORE HOLE: Diameter: **8** in. to **67** ft. depth
 Drive Shoe Shale Packer

2. FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
CLAY	38'	38'
SAND	8'	46'
CLAY	2'	48'
SAND	8'	56'
CLAY	2'	58'
WATER BEARING SAND	9'	67'
USE A 2ND SHEET IF NEEDED		

8. SCREEN: Not Installed Gravel-Packed
Type **PVC** Diameter **1 1/2**
Slot **8** Length: **5**
Set Between **62** ft. and **67** ft.
FITTINGS: K-Packer Bremer Check
 Blank Above Screen **1** ft. Other

9. STATIC WATER LEVEL: **38** ft. Below Land Surface Flowing

10. PUMPING LEVEL: Below Land Surface
50 ft. After **1** hrs. Pumping at **15** G.P.M.
 Plunger Bailer Air Test Pump

11. WELL HEAD COMPLETION:
 Pitless Adapter 12" Above Grade
 Basement Offset Well House

12. WELL GROUTED? No Yes From **0** to **58** ft.
 Neat Cement Bentonite Other
No. of Bags **4** Additives

13. NEAREST SOURCE OF POSSIBLE CONTAMINATION:
Type **Septic** Distance **53** ft. Direction **North**
Type _____ Distance _____ ft. Direction _____

15. ABANDONED WELL PLUGGED? Yes No
Casing Diameter _____ in. Depth _____ ft.
PLUGGING MATERIAL: Neat Cement Bentonite Slurry
 Cement/Bentonite Slurry Concrete Grout Bentonite Chips
No. of Bags _____ Casing Removed? Yes No

14. PUMP: Not Installed Pump Installation Only
Manufacturer's Name **Myers**
Model Number **NR50D** HP **1/2** Volts **115**
Length of Drop Pipe **40** ft. Capacity **7** G.P.M.
TYPE: Submersible Jet Other
PRESSURE TANK:
Manufacturer's Name **Well-x-Trol**
Model Number **WX-102** Capacity **2.50** Gallons **4.5**

16. REMARKS: (Elevation, Source of Data, etc.)

17. DRILLING MACHINE OPERATOR:
 Employee Subcontractor
Name **Daryl Johnson**

18. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
R. Webb & Son Well Drilling **35-2136**
REGISTERED BUSINESS NAME REGISTRATION NO.
Address **3120 M-65 Hale, MI 48739**
Signed _____ Date **March 20, 1998**

APR 17 98
CLAW P.D.
GROUND WATER SUPPLY SECTION

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT
OF
PUBLIC HEALTH

1 LOCATION OF WELL		County <u>Alcona</u> Twp. <u>Adams</u>		Fraction <u>NE 1/4 NE 1/4 SW 1/4</u>	Section No. <u>14</u>	Town <u>19 N</u>	Range <u>3 E</u>
Distance And Direction from Road Intersections <u>W. side of road between Lucas & Howard Rds on Kerr Rd</u>				3 OWNER OF WELL: <u>Donald Stegway</u> Address <u>1270 Kerr Rd Sterling Mich</u>			
2 FORMATION		THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM	4 WELL DEPTH: (completed) <u>68</u> ft. Date of Completion <u>3-29-68</u>			
<u>clay</u>		<u>28</u>	<u>28</u>	5 <input checked="" type="checkbox"/> Cable tool <input type="checkbox"/> Rotary <input type="checkbox"/> Driven <input type="checkbox"/> Dug <input type="checkbox"/> Hollow rod <input type="checkbox"/> Jetted <input type="checkbox"/> Bored <input type="checkbox"/>			
<u>sand</u>		<u>40</u>	<u>68</u>	6 USE: <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Public Supply <input type="checkbox"/> Industry <input type="checkbox"/> Irrigation <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Commercial <input type="checkbox"/> Test Well <input type="checkbox"/>			
				7 CASING: Diam. Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Height: Above/Below surface <u>1</u> ft. <u>2</u> in. to <u>64</u> ft. Depth Weight <u>3.75</u> lbs/ft. <u>1 1/2</u> in. to <u>68</u> ft. Depth Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
				8 SCREEN: Type <u>Flush Clayton</u> <u>1 1/4"</u> Slot/Gauze <u>100 ga</u> Length <u>5'</u> Set between <u>60</u> ft. and <u>68</u> ft. Fittings: <u>2-1 1/4 couplings</u> <u>3-1 1/4 pipe</u> <u>1 Brunner check</u>			
				9 STATIC WATER LEVEL <u>45</u> ft. below land surface			
				10 PUMPING LEVEL below land surface <u>45</u> ft. after <u>2</u> hrs. pumping <u>12</u> g.p.m. _____ ft. after _____ hrs. pumping _____ g.p.m.			
				11 WATER QUALITY in Parts Per Million: Iron (Fe) _____ Chlorides (Cl) _____ Hardness _____			
				12 WELL HEAD COMPLETION: <input type="checkbox"/> In Approved Pit <input type="checkbox"/> Pitless Adapter <input checked="" type="checkbox"/> 12' Above Grade			
				13 GROUTING: Well Grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Material: <input type="checkbox"/> Neat Cement <input type="checkbox"/> _____ Depth: From _____ ft. to _____ ft.			
				14 SANITARY: Nearest Source of possible contamination <u>52 feet W</u> Direction <u>Septic Tank</u> Type _____ Well disinfected upon completion <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
				15 PUMP: Manufacturer's Name _____ Model Number _____ HP _____ Length of Drop Pipe _____ ft. capacity _____ G.P.M. Type: <input type="checkbox"/> Submersible <input type="checkbox"/> _____ <input type="checkbox"/> Jet <input type="checkbox"/> Reciprocating			
16 Remarks, elevation, source of data, etc. ADDED INFO. BY DRILLER, <u>MEM ALL</u> *CORRECTED BY: **ADDITION BY:				17 WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief. <u>Simmons Well Drilling</u> <u>0033</u> REGISTERED BUSINESS NAME REGISTRATION NO. Address <u>222 So Second Street Branch Mich</u> Signed <u>Norman Simmons</u> Date <u>3-29-68</u> AUTHORIZED REPRESENTATIVE			

AUG 28 1984

WATER WELL AND PUMP RECORD

PART 127 ACT 368, P.A. 1978



PERMIT NUMBER

1 LOCATION OF WELL

County **ARENA** Township Name **ADAMS** Fraction **NE 1/4 SE 1/4 SW 1/4** Section Number **14** Town Number **190S** Range Number **3 EW**

Distance And Direction From Road Intersection

Street Address & City of Well Location

Locate with "X" in Section Below Sketch Map:

3 OWNER OF WELL

PEGS UNLIMITED INC.
Address **6545 LUCAS RD. STERLING MI.**
Address Same As Well Location? Yes No

2 FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
CLAY	60'	60'
SAND + GRAVEL	16'	76'

4 WELL DEPTH: (completed) **76** ft. Date of Completion **JUNE 27, 84**

5 Cable tool Rotary Driven Dug
 Hollow rod Auger Jetted

6 USE: Domestic Type I Public Type III Public
 Irrigation Type IIa Public Heat pump
 Test Well Type IIb Public **PEGS BARU**

7 CASING: Diameter Steel Threaded Plastic Welded

Height: Above Below

Surface **1** ft. Weight **11** lbs./ft.

Grouted Drill Hole Diameter

Drive Shoe Yes No

8 SCREEN: Not Installed

Type **SS SCREEN** Diameter _____

Slot/Gauze **7** Length _____

Set between **72** ft. and **76** ft.

FITTINGS: K-Packer Lead Packer Bremer Check
 Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL: **45** ft. below land surface Flow

10 PUMPING LEVEL: below land surface

55 ft. after **1** hrs. pumping at **5-10** G.P.M.
 _____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: Pitless adapter 12" above grade
 Basement offset Approved pit

12 WELL GROUTED? No Yes From _____ to _____ ft.
 Neat cement Bentonite Other **NAHERITE**
 No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type **SEPTIC** Distance **120** Direction **S.W.**

Well disinfected upon completion? Yes No

14 PUMP: Not Installed Pump Installation Only

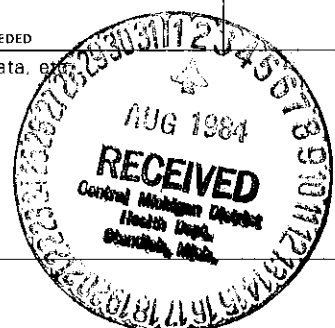
Manufacturer's name _____
 Model number _____ HP _____ Volts _____
 Length of Drop Pipe _____ ft. capacity _____ G.P.M.
 TYPE: Submersible Jet _____
 PRESSURE TANK:
 Manufacturer's name _____
 Model number _____ Capacity _____ Gallons

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

RENO WELL DRILLING 1707
 REGISTERED BUSINESS NAME REGISTRATION NO.
 Address **285 LA GRANT RD. TWINSBURG MI.**
 Signed **Roy A. Reno** Date **JUNE 28, 84**
 AUTHORIZED REPRESENTATIVE

ADDED INFO BY DRILLER, (FORM NO.)
 *CORRECTED BY
 **ADDITION BY
 ELEVATION
 DEPTH TO ROCK



H. E. Tope, Inc.

Permit No. 31346

State-Adams 1-14 BDW

Location: NE 1/4 SW 1/4 NW 1/4 Section 14, T.19N, R.3E
1015 feet from south and 990 feet from west line of quarter section.

This well record assembly is a compilation of well data filed by or on behalf of the operator, as required by Act 61, P.A. 1939, as amended; formation tops and stratigraphic intervals determined or confirmed where possible by Geological Survey Division personnel from mechanical logs and preliminary information collected while drilling was in progress. Records compiled by Allan G. Ostrander, Geologist.

Elevations: 804 Kelly Bushing (used for datum), 791.2 Ground.

Formation tops and stratigraphic intervals determined or confirmed by Geological Survey Division personnel from Schlumberger Sidewall Neutron Porosity--Gamma Ray logs and records filed by operator.

PLEISTOCENE:

Drift to	(194)
MISSISSIPPIAN:	
Michigan Formation	194
Marshall	395
Coldwater	537
Sunbury	1590
Berea-Bedford	1618

DEVONIAN:

Antrim	1740
Traverse Formation	2082
Traverse Limestone	2114
Bell Shale	2822
Dundee	2897

Preliminary or pre-reported formation tops and other well information obtained from Geological Survey Division field reports compiled while drilling was in progress.

Drift	195 Sj.	Traverse Formation	2099 Sj.
Marshall	395 Sj.	Traverse Limestone	2114 Sj.
Coldwater	505 Sj.	Bell	2824 Sj.
Sunbury	1590 Sj.	Dundee	2896 Sj.
Antrim	1740 Sj.		

The following documents are reproductions of official records submitted by: Harry E. Tope, Owner, on behalf of H. E. Tope, Incorporated.

dfg

7/19/79

14-19N-3E
Adams Twp., (Arenac County)

TD - 3063 in Dundee
(Dry)

Robert J. Bolger & Louis Rose

State-Adams #1

Permit #10572

Drilling Contractor: Lusher Drilling Co. (Rotary)

Location: SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ section 14, T.19N., R.3E.
384' from south and 376' from west line of quarter section.

Elevation: 807.5 feet above sea level.

Record by: L. Esch from driller's log.

	Thickness (feet)	Depth (feet)	
PLEISTOCENE:			
Drift:			
Sand	35	35	
Clay	5	40	
Clay and streak of sand	106	146	
Shells	4	150	
Clay, heavy	5	155	
Clay	55	210	
MISSISSIPPIAN:			
Michigan:			
Shale	143	353	
Marshall-Coldwater:			
Lime	59	412	
Shale	363	775	
Lime and shale	127	902	
Shale	593	1495	
Lime and shale	73	1568	
Sunbury-Berea-Bedford: (Preliminary Report - Berea at 1620)			
Shale	100	1668	
Sand	14	1682	
Lime	44	1726	
MISSISSIPPIAN-DEVONIAN:			
Antrim: (Preliminary Report - Antrim at 1760)			
Shale	304	2030	
Shale and lime	34	2064	
Shale, brown, hard	61	2125	
DEVONIAN:			
Traverse:			
COMPLETED	Lime	13	2138
<i>3-21-44</i>	Lime and shale breaks	95	2233
CASING	Shale	25	2258
RECORD	Lime and shale	29	2287
	Shale and lime	16	2303
	Lime	95	2398
<i>10" 234'</i>	Lime and shells (flow water at 2398)	27	2425
<i>5 3/16" 2923'</i>	Lime	55	2480
	Lime and shells (flow water 2510)	108	2588
	Lime; shale and shells	52	2640
	Lime	32	2672
	Shale	200	2872
	Lime	11	2883
	Shale (show of oil 2915-2929?)	46	2929

14-19N-3E
Adams Twp., (Arenac County)

TD - 2996 in Dundee
(Dry)

Smith Petroleum Company

Adam Lucas #1

Permit #10765

Drilling Contractor: Gordon Oil Company (Rotary)

Location: NW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 14, T., 19N., R. 3E.
990' from south and 990' from east line of quarter section.

Elevation: 789.5 feet above sea level.

Record by: D. Myers from driller's log.

	Thickness (feet)	Depth (feet)
PLEISTOCENE:		
Drift:		
Sand and clay	180	180
MISSISSIPPIAN:		
Michigan: (May be Saginaw in upper part)		
Shale	10	190
Shale, sand, shells	120	310
Sand and shale	40	350
Marshall:		
Sand	95	445
Coldwater:		
Sand and shale	105	550
Shale	245	795
Shale and shells	185	980
Shale	170	1150
Shale and shells	390	1540
Sunbury:		
Shale, brown	22	1562
Berea:		
Sand	18	1580
Bedford:		
Shale	20	1600
MISSISSIPPIAN-DEVONIAN:		
Antrim: (May be part Bedford shale)		
Shale and shells	385	1985
DEVONIAN:		
Traverse: (Preliminary report - Traverse 2080)		
Lime	535	2520
Shale and lime	215	2735
Shale	138	2873
Shale, gray	8	2881
Dundee:		
Dundee (1 qt. oil per 12 hrs 2970; small show black oil 2991; show water 2996)	115	2996
	TOTAL DEPTH	2996
	(Preliminary Report Total Depth)	3002

Casing record:

10" 180'

5-3/16" 2892'

Commenced: 5-11-44

Completed: 6-5-44

Initial Production: Dry Hole.

14-19N-3E
Adams Twp., (Arenac County)

TD - 2890 in Dundee
(Oil)

Wm & Helen Thomas
~~Peter J. Bolger & Louis Rose~~

State-Adams #2

Permit #10774

Drilling Contractor: Elymer Drilling Co. (Rotary)

Location: SE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ section 14, T.19N., R.3E.
330' from south and 1020' from west line of quarter section.

Elevation: 780.6 feet above sea level.

Record by: D. Myers from driller's log.

	Thickness (feet)	Depth (feet)
PREMI-STOCCENE:		
Drift:		
Clay	110	110
Clay and sand	55	165
MISSISSIPPIAN:		
Michigan-Marshall-Coldwater:		
Shale	120	285
Lime, shale and shells	115	400
Shale (probably Sunbury in lower 30')	1233	1633
Berea-Bedford:		
Sand	37	1670
Shale	130	1800
MISSISSIPPIAN-DEVONIAN:		
Antrim:		
Shale and shells	50	1850
Shale	160	2010
Lime	30	2040
Shale and lime	59	2099
DEVONIAN:		
Traverse: (Preliminary Report - Top Traverse 2097)		
Traverse lime (flow water 2370-80)	431	2530
Shale and lime	135	2665
Shale and shells	50	2715
Shale	37	2752
Lime and shale	123	2875
Dundee: (Preliminary Report - Top 2874)		
Lime (Pay 2875-2887)	15	2890
TOTAL DEPTH		2890
(Preliminary Report - Total Depth		2888

Casing record:
10" 190'
5-3/16" 2874'

Commenced: 6-14-44
Completed: 6-17-44
Initial Production: 250 barrels per hr.

14-19N-3W
Adams Twp., (Aronac County)

TD 2990 in Dundee
(Oil)

Smith Petroleum Co.

Alfred Kerr #2

Permit # 10821

Drilling Contractor: Cordon Oil Co. & Co. tools (Rotary 0-2913
Cable 2913-
2990)

Location: SW $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ section 14, T.19N., R.3E
330' from south 990' from east line of quarter section.

Elevation: 775.0 feet above sea level.

Record by: D. Myers from driller's log.

	Thickness (feet)	Depth (feet)
PELMISTOCENE:		
Drift:		
Drift	160	160
MISSISSIPPIAN:		
Michigan:		
Shale	230	390
Marshall:		
Sand, white, soft	105	495
Coldwater:		
Shale and sand	55	550
Shale	1000	1550
Sunbury-Berea-Bedford:		
Shale and shells	175	1725
MISSISSIPPIAN-DEVONIAN:		
Antrim:		
Shale, brown	280	2005
Shale and lime, gray	15	2020
Shale	77	2097
DEVONIAN:		
Traverse:		
Lime	73	2170
Lime and shale	50	2220
Lime	278	2498
Shale and lime	22	2520
Lime	100	2620
Lime and shale	5	2625
Shale and shells	20	2645
Shale and lime	45	2690
Shale	199	2889
Dundee: (Slight Porosity 2908-2912 ; small show oil 2989 -90; Flow 12 $\frac{1}{2}$ oil per 30 minutes; went dead.)	101	2990
	TOTAL DEPTH	2990
	Plugged back	2950

Casing record:

10" 181'
5-3/16" 2892'

Commenced: 5-30-44

Completed: 7-14-44

Initial Production: After acid 15 barrels

14-19N-3E

Adams Twp., (Arenac County)

TD 2904 in Dundee
(Oil)

Glen & Helen Thomas
~~Peter J. Bolger & Louis Rose~~

State - Adams #3

Drilling Contractor: Lusher Drilling (Rotary) Permit #10932

Location: NE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ section 14, T.19N., R3E.
990' from south and 990' from west line of quarter section

Elevation: 791.2 feet above sea level

Record by: D. Myers from driller's log.

	Thickness (feet)	Depth (feet)
PLEISTOCENE:		
Drift:		
Drift		
Sand and clay	150 45	150 195
MISSISSIPPIAN:		
Michigan:		
Shale	32	227
Shale and gypsum	103	330
Lime and shale	40	370
Lime	25	395
Marshall:		
Marshall sand	120	515
Coldwater:		
Shale	1050	1565
Sand and shale	45	1610
Sunbury-Berea-Antrim:		
Shale, brown	487	2097
Shale and lime	114	2111
DEVONIAN:		
Traverse: (Preliminary Report Traverse 2117)		
Traverse lime (water 2380-2385 - water 2490-3510)	405	2516
Shale and lime	21	2537
Shale	19	2556
Shale and lime	264	
Shale	41	2861
Shale and lime	25	2886
Dundee:		
Dundee (Pay 2885-2904)	18	2904
TOTAL DEPTH		2904

(Preliminary Report TD 2905)

Note: cored (2885-2905 - Black, very porous dolomite)

Casing record:

10" 202'

5-3/16" 2882'

Commenced: 7-26-44

Completed: 8-11-44

Initial Production: 4000 barrels.

14-19N-3E
Adams Twp., (Arenac County)

TD 2940 in Dundee
(Dry)

Peter J. Bolger & Louis Rose

State - Adams #4

Permit #11036

Drilling Contractor: Lusher Drilling Co. (Rotary)

Location: SE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ section 14, T.19N., R.3E.
990' from north and 990' from west line of quarter section

Elevation: 792.0 feet above sea level

Record by: D. Myers from driller's log.

	Thickness (feet)	Depth (feet)
PRETERTIARY:		
Drift:		
Sand and clay	203	203
MISSISSIPPIAN:		
Michigan:		
Shale, black	15	218
Shale	7	225
Shale and shells	156	381
Lime	16	397
Marshall:		
Marshall, sand	118	515
Coldwater:		
Shale	1065	1580
Sand and shale	50	1630
MISSISSIPPIAN-DEVONIAN:		
Antrim:		
Shale	235	1865
Shale and shells	125	1990
Lime and shale	110	2100
Shale	1	2101
DEVONIAN:		
Traverse:		
Traverse lime	19	2120
Shale	36	2156
Lime and shale	92	2248
Traverse lime	292	2540
Lime, soft and shale	22	2562
Lime and shale	274	2836
Shale	37	2873
Shale, (Bell)	16	2889
Lime	1	2890
Shale and lime	8	2898
Dundee:		
Dundee	42	2940
TOTAL DEPTH		2940

Casing record:
10" 220'

Commenced: 9-14-44

Completed: 10-2-44

Initial Production: Dry hole.

ERVIN MAJOR

~~GORDON OIL COMPANY~~

14-19N-3E
Adams Twp., (Arenac County)

TD 2908 in Dundee
(011)

State - Adams #1
C. ROOSEVELT OIL CO., Permitt #11115
Drilling Contractor: C. W. Teater (Cable)

Location: SW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ section 14, T.19N., R.3E.
990' from north and 990' from east line of quarter section

Elevation: 788.5 feet above sea level

Record by: D. Myers from driller's log

	Thickness (feet)	Depth (feet)
PLEISTOCENE:		
Drift:		
Drift	205	205
MISSISSIPPIAN:		
Michigan:		
Shale, gray	42	247
Sand	18	265
Shale, gray	115	380
Marshall:		
Marshall sand	85	465
Coldwater:		
Shale, sandy	35	500
Lime, sandy	17	517
Shale	53	570
Mud, blue	14	584
Sand	5	589
Mud, blue	51	640
Shale, blue	60	700
Shale, gray (water 940-955)	255	955
Shale, sandy	235	1190
Shale and shells	228	1418
Shale, gray	48	1466
Coldwater Red Rock	11	1477
Shale, gray	88	1565
Sunbury:		
Sunbury	50	1615
Berea:		
Berea (5 bailers water per hour 1620-1660)	53	1668
Bedford:		
Shale, gray	47	1715
MISSISSIPPIAN-DEVONIAN:		
Antrim:		
Antrim shale	394	2109 SL
DEVONIAN:		
Traverse:		
Traverse lime (300' water per 2 hours 2233; hole full water 2380)	734	2843
Shale, gray	54	2897
Dundee:		
Dundee (Show gas 2900)-(Pay 2897 - 2908)	11	2908
TOTAL DEPTH		2908

COMPLETED
11-18-44
CASING
RECORD
10" 205'
6 1/4" 644'
5 3/8" 2541'
5 3/16" 2892'

Ervin Major

Richard H. Dunham No. 2

Permit No. 11318

Drilling Contractor: Ervin Major (Cable)

Location: NW₁, NW₁, NE₁ Section 14, T.19N., R.3E.
330' from north and 330' from west line of quarter section.

Elevation: 812.0 feet above sea level.

Record by: D. Myers from driller's log.

	Thickness* (feet)	Depth (feet)
PLEISTOCENE:		
Drift:		
Mud	130	130
Mud, brown	75	205
Sand	13	218
Gravel	12	230
	(230)	
MISSISSIPPIAN:		
Michigan:		
Shale, blue	30	260
Shell, hard	25	285
Lime	6	291
Shale, blue	40	331
Mud, blue	24	355
	(125)	
Marshall: (Pre. Report - Marshall 405')		
"Marshall" sand	40	395
"Marshall" sand and mud	30	425
Sand	10	435
	(80)	
Coldwater:		
Shale, blue	12	447
Mud, blue	53	500
Shale, blue	90	590
Shale and shells	150	740
Shale, gray	150	890
Shale, sandy	316	1206
Shale, gray	222	1428
Shale, blue, muddy	47	1475
"Redrock"	6	1481
Lime	19	1500
Shale and lime	50	1550
	(1115)	
Sunbury:		
Shale, brown	40	1590
Berea-Bedford:		
"Berea"	47	1637
"Berea", shale, sandy	5	1642
Shale, gray, sandy	68	1710
	(120)	

COMPLETED
3-18-45
CASING
RECORD

10" 238'
8 1/4" 590'
6 3/8" 2545'
5" 2610'

GORDON OIL COMPANY 14-193-38
 Adams Twp., (Arenac County)

TD 2960 in Dundee
 (oil)

C. W. Teator & Rowner Corp.
 State-Adams #3 ROOSEVELT OIL CO. Permit #12186

Drilling Contractor: C. W. Teator (Cable)

Location: NE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ section 14, T.19N., R.38E.
 330' from north end 430' from east line of quarter section.

Elevation: 797.3 feet above sea level.

Record by: D. Myers from driller's log.

	Thickness (feet)	Depth (feet)
PLEISTOCENE:		
Drift:		
Drift (Hole full water)	242	242
PENNSYLVANIAN:		
Saginaw:		
Lime shell	33	275
Med. dark	25	300
MISSISSIPPIAN:		
Michigan:		
Shale and shells	68	368
Med. dark	26	394
Marshall:		
Sand, white	91	485
Coldwater:		
Shale, gray	65	550
Sand	25	575
Shale, gray	253	828
Shale and shells	26	914
Shale, gray	92	1006
Shale, gray and sand	79	1085
Shale and shells	70	1155
Shale, gray	330	1485
Red Rock	15	1500
Shale, gray	78	1578
Sunbury:		
Sunbury	32	1610
Berea-Redford:		
Shale and shells	10	1620
Berea (3 bailers water per hour 1630-40)	45	1665
Shale, gray	20	1725

MISSISSIPPIAN-DEVONIAN:

Antrim:

Antrim (12 bailers water per hour 1790-1800)	310	2035
Shale, gray	7	2062
Shale, brown	54	2116

COMPLETED

6-21-46

CASING

RECORD

10" 242'
 8 1/4" 665'
 6 3/8" 2574'
 5 3/16" 2909'

14-19N-3E
Adams Twp., (Arenas County)

TD 2926 in Dundee
(Dry)

Smith Petroleum Co.

Wm. Stone #A-1

Permit #11837

Drilling Contractor: Company tools (Cable)

Location: SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ section 14, T.19N., R. 3E.
480' from south and 330' from west line of quarter section.

Elevation: 777.8 feet above sea level.

Record by: D. Kilbourne from driller's log.

	Thickness (feet)	Depth (feet)
PERMISTOCENE:		
Drift:		
Drift	165	165
MISSISSIPPIAN:		
Michigan:		
Shale	45	210
Mud	40	250
Shale	175	425
Marshall:		
Sand (water)	20	445
Shale, brown	10	455
Sand	65	520
Coldwater:		
Shale	24	544
Limeshell	11	555
Shale	653	1208
Sand (sharp)	9	1217
Shale	3	1220
Lime shells	25	1245
Shale	145	1390
Shells	38	1428
Shale	79	1507
Shale, gray and shells	36	1543
Lime shells	17	1560
Shale, gray	10	1570
Sunbury-Berea-Bedford:		
Shells and shale, brown	12	1582
Shale (Preliminary Report top Berea 1594)	39	1621
Berea grit (Water 1675)	57	1678
Shale, gray	60	1738
MISSISSIPPIAN-DEVONIAN:		
Antrim:		
Shale, brown	372	2110

COMPLETED

1-2-46

CASING

RECORD

10" 195'

8 1/4" 583'

6 7/8" 2573'

5 3/16" 2885'

4" liner 2900'

14-19N-3E
Adams Twp., (Arenac County)

TD - 2889 in Dundee
(011)

Smith Petroleum Co.

Alfred A. Kerr #1

Permit #10702

Drilling Contractor: Gordon Oil Co. (Rotary)

Location: NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ section 14, T.19N., R.3E.
330' from north and 990' from west line of quarter section.

Elevation: 775.0 feet above sea level.

Record by: D. Myers from driller's log.

	Thickness (feet)	Depth (feet)
PLEISTOCENE:		
Drift:		
Drift	160	160
MISSISSIPPIAN:		
Michigan:		
Shale and shells	225	385
Marshall:		
Sand and shale	175	560
Coldwater:		
Shale	785	1345
Shale and shells	165	1510
Shale, gray	40	1550
Sunbury-Berea-Bedford:		
Shale, brown	80	1630
Shale, gray	30	1660
Shale and shells, blue	70	1730
MISSISSIPPIAN-DEVONIAN:		
Antrim: (Preliminary Report - Top 1728)		
Shale, brown	280	2010
Shale and lime, gray	30	2040
Shale, black, soft	50	2090
DEVONIAN:		
Traverse: (Preliminary Report -Top Traverse formation 2075; limestone 2085)		
Lime	485	2575
Lime and shale	200	2775
Shale and shells	90	2865
Cored 2865-2887 -(Preliminary report - shale 2863-74 $\frac{1}{2}$)		
Shale	11	2876
Dundee:		
Dolomite (good porosity and bleeding oil from 2876 $\frac{1}{2}$ to 2889)	13	2889
	TOTAL DEPTH	2889

Casing record:
10" 175'
5-3/16" 2878'

Commenced: 4-8-44
Completed: 4-23-44
Initial Production: 200 bbls. per hour

24-194-33
Adams Twp., (Adams County)

TO 3026 in Dundee
(Dry)

G. W. Foster

Chas. Haslett #2

Permit #12054

Drilling Contractor: Company tools (Cable)

Location: NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ section 14, T.19N., R.3E.
450' from north and 330' from west line of quarter section.

Elevation: 768.5 feet above sea level.

Record by: F. W. Terwilliger from driller's log.

	Thickness (feet)	Depth (feet)
PLEISTOCENE:		
Drift:		
Drift	262	262
MISSISSIPPIAN:		
Michigan:		
Mud, gray	63	315
Lime and slate	35	350
Marshall:		
Lime, sandy and shells (Hole full water 362)	100	450
Sand	50	500
Coldwater:		
Mud, gray	200	700
Mud and lime shells	21	721
Shale, gray	839	1560
Sunbury:		
"Sunbury"	30	1590
Berea:		
"Berea"	52	1642
Bedford:		
Shale, gray	83	1725
MISSISSIPPIAN-DEVONIAN:		
Antrim:		
"Antrim"	370	2095
DEVONIAN:		
Traverse:		
Lime, "Traverse" (400' salt water in 2 hours 2100-2110)	25	2120
Shale, gray	90	2210
Lime, "Traverse" (Big water - flow - 2374)	660	2870
Dundee:		
"Dundee" (slight show oil 2887-2893; 600' oil and 1400' salt water 2966-80)	156	3026
Casing record:	TOTAL DEPTH	3026
10" 252'	Commenced: 12-20-45	
8 $\frac{1}{4}$ " 721'	Completed: 5-4-46	
6-5/8" 2540'	Initial Production: Before acid: Dry Hole	
5-3/16" 2870'	After acid: Dry hole.	
	Preliminary report Treated: 1-30-46 with 500 gallons.	

14-19N-3E
Adams Twp. (Arenac Co.)

Field
TD 2998 in Dundee
Dry

Smith Petroleum Company

Wm. Stone #1

Permit No. 7880

Drilling Contractor: Twin Drilling Co.

Location: SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of section 14, T. 19N., R. 3E.
330' from south and 330' from west line of quarter section

Elevation: 772.6 feet above sea level

Record by: L. Hale from driller's log

	Thickness (feet)	Depth (feet)
PLEISTOCENE:		
Drift:		
Surface sand and clay	30	30
Drift	135	165
Drift, hard	95 (260)	260
MISSISSIPPIAN:		
Michigan:		
Shale and shells	115	375
Marshall:(?)		
Shale, sandy	25	400
Shale, gray, sandy	25	425
Sand, light	55 (105)	480
Coldwater:		
Shale, blue	165	645
Shale, gray, medium	75	720
Sand, gray, medium	30	750
Shale and shells, medium	90	840
Shale, blue, medium	50	890
Shale, gray and lime shells	170	1060
Shale, gray	75	1135
Shale and shells, medium	105	1240
Shale, gray and lime shells	250	1490
Shale, red	45	1535
Shale, gray	45 (1100)	1580
Sunbury:		
Shale, dark	30	1610
Berea-Bedford:		
Shale, gray, sandy	70	1680
Lime, sandy with shale breaks	25	1705
Shale, gray and lime shells	40 (135)	1745

COMPLETED

9-2-40

CASING

RECORD

8 1/4" 260'
5 7/16" 2886'