



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - OFFICE OF GEOLOGICAL SURVEY

**RECORD OF WELL DRILLING OR DEEPENING**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number  
59996

(Submit 3 copies within 60 days of drilling completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

API number  
21-075-59996

Well name and number  
West Bay #1-22

Surface location  
NW 1/4 of SE 1/4 of SW 1/4 Section 22 T4S R2E

Township  
Norvell

County  
Jackson

Footages North/South East/West  
567' ft. from N line and 575' ft. from E line of sec.

Directionally drilled (check one) Previous permit numbers  
 Yes  No

Subsurface location (if directionally drilled)  
1/4 of 1/4 of 1/4 Section T R

Township County

Footages North/South East/West  
ft. from line and ft. from line of sec.

Feet drilled - cable tools Feet drilled - rotary tools  
from to from surf to 4370'

Name and address of permittee  
West Bay Exploration  
13685 S. West Bay Shore  
Suite 200  
Traverse City Mi. 49684

Name and address of drilling contractor  
Advanced Energy Services  
P.O. Box 85  
South Boardman Mi.  
49680

Date drilling began Date drilling completed  
01/11/2010 01/27/2010

Total depth of well Formation at total depth  
Driller 4370' Log 4369' Black River

Elevations  
K.B. 1028.24 ft. R.F. ft. R.T. 1027 ft. Grd 1015.27 ft

Casing, Casing Liners and Cementing, Operating Strings					Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)				
Size	Where set	Cement	T.O.C.	Ft. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4"	419'	150 lite/150 A	surface		Niagara		x	2920	partial
8 5/8"	3112'	600 lite/200 A	surface						
5 1/2"	4151'	80 Halcem	1998'						
		300 Halcem							

Gross Pay Intervals				All Other Oil and Gas Shows Observed or Logged								
Formation	Oil or Gas	From	To	Where Observed (X)								
				Formation	Oil or Gas	Depth	Samples	Odor	Pits	Mud Line	Gas Log	Fill Up
Trenton/Black River	both	3966'	4290'									

Depth Correction		Deviation Survey		Plugged Back		
Depth	Correction	Run at	Degrees	Yes	No	Operation Date
						01/27/2010

Geophysical / Mechanical Logs (list each type run)		
Brand	Log types	Logged intervals
Baker Atlas	CDL/CNL/GR	TD-Surf
	DLL/MLL/GR	TD-Min

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date: 02/15/2010 Name and title (print): Timothy L. Baker Signature: *[Signature]*

Submit to: OFFICE OF GEOLOGICAL SURVEY, MICHIGAN DEPT OF ENVIRONMENTAL QUALITY PO BOX 30256, LANSING, MI 48909-7756



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - OFFICE OF GEOLOGICAL SURVEY

RECORD OF WELL COMPLETION

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

(Submit 3 copies within 60 days of well completion.)
[X] Part 615 Oil/Gas Well [ ] Part 625 Mineral Well

Permit number/deepening permit no. 59996 API number 21-075-59996-00-00
Type of well (after completion) Oil & Gas
Well name & number West Bay 1-22

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore #200 Traverse City, MI 49684
Directionally drilled (check one) [ ] Yes [X] No Previous permit numbers Total depth of well M.D. 4370 T.V.D.
Surface location NW 1/4 of SE 1/4 of SW 1/4 Section 22 T 4S R 2E Subsurface location (if directionally drilled)
Township Norvell County Jackson Township County
Footages: North/South East/West 750 Ft. from South line and 1400 Ft. from West line of Sec.
Date well completed 2/5/2010 Producing formation(s) Black River Injection formation(s) Date of first injection Disposal formation(s) Solution formation(s)

COMPLETION INTERVALS(S)

Table with columns: Date, Number holes, Perforation or open hole interval, Open (Yes/No). Row 1: 1/30/2010, 60, 4224-4254', X

STIMULATION BY ACID OR FRACTURING

Table with columns: Date, Interval treated, Materials and amount used. Row 1: 1/30/2010, 4224-4254', 500 gallons 28% Hcl Acid. Row 2: 2/4/2010, 4224-4254', 6000 gallons 28% Hcl Acid w/ 20 Ball sealers. Includes handwritten note: OPERATIONS OFFICE FEB 16 2010

PRODUCTION TEST DATA

Table with columns: Oil Bbls/day, Gravity °API, Condensate Bbls/day, Gas MCF/day, Water Bbls/day, H2S Grains/100 ft³, B.H.P. and depth. Row 1: 200, 47, 90, 0, NA, 1768 @ 4239

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (print or type) Timothy L. Baker Operations Manager Signature: [Handwritten Signature] Date 2/16/2010

Submit to: OFFICE OF GEOLOGICAL SURVEY MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY PO BOX 30266 LANSING MI 48909-7756



## RECORD OF WELL DRILLING OR DEEPENING

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number

60010

(Submit 3 copies within 60 days of drilling completion.)

 Part 615 Oil/Gas Well  Part 625 Mineral Well

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Suite 200 Traverse City Mi. 49684		API number 21-075-60010	
Name and address of drilling contractor Advanced Energy Services P.O. Box 85 South Boardman Mi. 49680		Well name and number West Bay & Boyd #1-27	
Date drilling began 01/30/2010		Surface location SW 1/4 of SE 1/4 of SW 1/4 Section 22 T4S R2E	
Date drilling completed 02/14/2010		Township Norvell	
Total depth of well Driller 4495 Log 4490		County Jackson	
Formation at total depth Black River		Footages North/South East/West 271' ft. from S line and 1440' ft. from W line of sec.	
Elevations K.B. 1043 ft. R.F. ft. R.T. 1042 ft. Grd 1029 ft		Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
		Previous permit numbers	
		Subsurface location (if directionally drilled) NW 1/4 of NW 1/4 of NW 1/4 Section 27 T 4S R 2E	
		Township Norvell	
		County Jackson	
		Footages North/South East/West 679' ft. from N line and 661' ft. from W line of sec.	
		Feet drilled - cable tools from to	
		Feet drilled - rotary tools from surf to TD	

Casing, Casing Liners and Cementing, Operating Strings					Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)				
Size	Where set	Cement	T.O.C.	Ft. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4"	426'	150 lite/150 A	surface		Niagaran		X	3220	Partial
8 5/8"	3333'	650 lite/200 A	surface		Trenton/Black River		X	4267	Full
5 1/2"	4151'	80 Halcem	2580'						
		250 Halcem							

Gross Pay Intervals				All Other Oil and Gas Shows Observed or Logged							
Formation	Oil or Gas	From	To	Where Observed (X)							
Formation	Oil or Gas	Depth	Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up			
Trenton/Black River	both	4273'	TD								

Depth Correction		Deviation Survey		Plugged Back		
Depth	Correction	Run at	Degrees	Yes	No	Depth
see	attached	directional				

Geophysical / Mechanical Logs (list each type run)		
Brand	Log types	Logged intervals
Baker Atlas	CNL/GR/CCL (Unable to run open hole)	4487'-Surf
	SBT/GR/CCL	4487'-2100'

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date 02/19/2010	Name and title (print) Timothy L. Baker	Signature 
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MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256, LANSING, MI 48909-7756



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - OFFICE OF GEOLOGICAL SURVEY

**RECORD OF WELL COMPLETION**

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

(Submit 3 copies within 60 days of well completion.)  
 Part 615 Oil/Gas Well     Part 625 Mineral Well

Permit number/deepening permit no. 60010		API number 21-075-60010-00-00	
Type of well (after completion) Oil & Gas			
Well name & number West Bay Boyd 1-27			
Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Dr #200 Traverse City, MI 49684			
Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Previous permit numbers	
Total depth of well M.D. _____ T.V.D. _____			
Surface location SW ¼ of SE ¼ of SW ¼ Section 27 T 4S R 2E		Subsurface location (if directionally drilled) NW ¼ of NW ¼ of NW ¼ Section 27 T 4S R 2E	
Township Norvell		County Jackson	
Footages: North/South 271 Ft. from South line and 1440 Ft. from West line of Sec.		Footages: North/South 600 Ft. from North line and 660 Ft. from West line of Sec.	
Date well completed 2/20/10		Date of first injection	
Producing formation(s) Black River		Disposal formation(s)	
Injection formation(s)		Solution formation(s)	

**COMPLETION INTERVALS(S)**

Date	Number holes	Perforation or open hole interval	Open	
			Yes	No
2/19/2010	Open Hole	O.H. 4495-4525	X	

**STIMULATION BY ACID OR FRACTURING**

Date	Interval treated	Materials and amount used
2/20/2010	4495-4525	5000 gal 28% Hcl Acid

**PRODUCTION TEST DATA**

Oil Bbls/day	Gravity °API	Condensate Bbls/day	Gas MCF/day	Water Bbls/day	H <sub>2</sub> S Grains/100 ft <sup>3</sup>	B.H.P. and depth
200	47		95	0	0	TBD

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (print or type) Timothy L. Baker Operations Manager	Signature <i>Timothy L. Baker</i>	Date 2-23-10
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30256  
LANSING MI 48909-7756



**RECORD OF WELL DRILLING OR DEEPENING**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number  
60011

(Submit 3 copies within 60 days of drilling completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Suite 200 Traverse City Mi. 49684		API number 21-075-60011	
Name and address of drilling contractor Advanced Energy Services P.O. Box 85 South Boardman Mi. 49680		Well name and number West Bay & Boyd #2-27	
Date drilling began 02/15/2010		Surface location SW 1/4 of SE 1/4 of SW 1/4 Section 22 T4S R2E	
Date drilling completed 03/03/2010		Township Norvell	
Total depth of well Driller 4845 Log 4846		County Jackson	
Formation at total depth Black River		Footages North/South East/West 186' ft. from S line and 1440' ft. from W line of sec.	
Elevations K.B. 1042.6 ft. R.F. ft. R.T. 1041 ft. Grd 1029.2 ft		Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
		Previous permit numbers	
		Subsurface location (if directionally drilled) SE 1/4 of NE 1/4 of NW 1/4 Section 27 T 4S R 2E	
		Township Norvell	
		County Jackson	
		Footages North/South East/West 963' ft. from N line and 2264' ft. from W line of sec.	
		Feet drilled - cable tools from to	
		Feet drilled - rotary tools from surf to TD	

Casing, Casing Liners and Cementing, Operating Strings					Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)				
Size	Where set	Cement	T.O.C.	Ft. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4"	424'	150 lite/150 A	surface		Niagaran		x	3300	Partial
8 5/8"	3417'	650 lite/200 A	surface						
5 1/2"	4842'	75 Halcem	3300"						
		150 Halcem							

Gross Pay Intervals				All Other Oil and Gas Shows Observed or Logged								
Formation	Oil or Gas	From	To	Where Observed (X)								
				Formation	Oil or Gas	Depth	Samples	Odor	Pits	Mud Line	Gas Log	Fill Up
Black River	both	4510'	4590'									

Depth Correction		Deviation Survey		Plugged Back		
Depth	Correction	Run at	Degrees	Yes	No	Depth
see	attached	directional				

Geophysical / Mechanical Logs (list each type run)		
Brand	Log types	Logged intervals
Baker Atlas	CNL/ZDL/GR	4846'-Surf
	DLL/MLL/GR	4846'-3417

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date 06/20/2010	Name and title (print) Timothy L. Baker	Signature 
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Submit to: OFFICE OF GEOLOGICAL SURVEY,  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256, LANSING, MI 48909-7756

# FORMATION LOG

Attach additional sheets ... necessary

Elevation used 1043	Geologist name Fowler/Baker/Vancyce	API number	Permit number/Deepening number 60011
		Tops taken from <input type="checkbox"/> Driller's log <input checked="" type="checkbox"/> Sample log <input checked="" type="checkbox"/> Electric log	

From	To	Formation (type, color, hardness)	From	To	Formation (type, color, hardness)
Note: if well directionally drilled, add true vertical depth formation tops where appropriate					
surf	222(log)	Drift- Unconsolidated sand and gravel			
222	290	Shale& Siltstone- brn-gy-Grn, silty at top organic at base			
290	1230	Shale-Coldwater- Md-dk Brn-Blk,Silty, incr organic at base			
1230	1370	Sunbury Sh/Berea siltstone-Sh, Md Brn-Blk Silty,pyr. mixed w/siltstone, SSO-Lt md brn, Arg			
1370	15	Antrim-Dk Brn-Blk,Pyrand incr organic at base,SG incr toward base			
1554	1622	Traverse Fm- Limestone, Dk Brn-md Brn, Dns, Pyr, Dolomite, Md Gy-Gy, Dns			
1622	1744	Traverse Limestone-Md Brn-lt Brn Vfxln,Hd,			
1744	1978	Shale intbd w Dolomite and Lmst, Md Brn-Gy, Vfxln, Dns, Pos Dundee@1728'-Brn-Lt brn,Poor Samp,Pos Cvgs			
1978	2200	Detroit River- Anhydrite and Dolomite/Limestone, Lt-Md Brn Dns,Vfxln in pt,NS			
2200	2416	Bass Island/Bois Blanc-Dolomite,Anhydrite & Limestone AA			
2416	2685	G-Unit-Dolomite-Arg,Hd grading to Anhydrite- Lt-md Gy Brn			
2685	2766	C Shale-Gy-rdBrn, W/Dolomite and Anhydrite,Lt gy-Brn-bf Poor Samp.l			
2766	2972	B Evap-Anhydrite Wh-Lt Gy W/Dolomite-Vfxln, Lt-md Gy, Intbd at base with Anhy. AA	If well was cored, attach core description		
2972	3160	Dolo & Lmst-Wh-lt Gy,Dns,Anhydritic @3110-Wh, Dns	DRILL STEM TEST DATA		
3160	3386	Niagaran-Dolomite,AA,Md Gy, Vfxln Intbd W/Anhydrite AA,V porous 2880'-3300'			
3386	3884	Clinton/Cinn-Dolomite, Arg, hd, dk gy, grd to lt gy intbd w/Lmst,lit-md gy Dns			
3884	4212	Utica- Shale, Gy-Grn,Gummy-Hd			
4212	4526	Trenton-Dolo, Lt -Md Gy,Dns,W/ Lmst @ 4236'-4526' Lt-Md Gy Brn,Vfxln,			
4526	TD	Black River- Dolomite,Md Brn-GyBrn,SO&G@4590'			



Directional Drilling Contractors, LLC.

Job Number: DR100040

Company: WEST BAY EXPLORATION

Lease/Well: WEST BAY/ BOYD 2-27

Location: NORVELL TWP., JACKSON CO.

Rig Name: ADVANCED # 2

RKB:

G.L. or M.S.L.:

State/Country: MICHIGAN / USA

Declination: 6.33 DEGREES WEST

Grid:

File name: C:\WINSERVE\ASDRIL-1\2010\BOYD227.SVY

Date/Time: 04-Mar-10 / 10:03

Curve Name: WESTBAY/BOYD 2-27 ( as drilled )

Directional Drilling Contractors  
SURVEY REPORT

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 144.40

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
<b>KOP @ 484 MD</b>									
484.00	.00	.00	484.00	.00	.00	.00	.00	.00	.00
486.00	.70	169.10	486.00	-.01	.00	.01	.01	169.05	35.00
516.00	1.80	164.20	515.99	-.65	.17	.62	.67	165.64	3.68
546.00	3.20	162.10	545.96	-1.90	.55	1.86	1.97	163.79	4.68
576.00	4.70	161.00	575.89	-3.85	1.21	3.84	4.04	162.59	5.01
606.00	6.10	159.30	605.76	-6.51	2.17	6.56	6.86	161.54	4.70
636.00	7.70	157.80	635.54	-9.86	3.49	10.05	10.46	160.48	5.37
667.00	9.10	156.80	666.21	-14.04	5.25	14.47	14.98	159.51	4.54
697.00	10.70	157.80	695.76	-18.80	7.23	19.49	20.14	158.95	5.36
728.00	12.80	157.80	726.11	-24.64	9.62	25.63	26.45	158.68	6.77
757.00	14.90	157.80	754.26	-31.07	12.24	32.39	33.39	158.50	7.24
788.00	17.30	157.50	784.04	-39.02	15.51	40.75	41.99	158.32	7.75
818.00	19.80	156.10	812.48	-47.78	19.28	50.08	51.53	158.03	8.46
848.00	22.10	154.30	840.50	-57.52	23.78	60.61	62.24	157.53	7.96
878.00	24.20	152.90	868.08	-68.08	29.03	72.25	74.01	156.90	7.24
907.00	26.50	151.50	894.29	-79.06	34.83	84.55	86.39	156.22	8.20
937.00	28.90	150.10	920.85	-91.22	41.64	98.41	100.28	155.47	8.29
968.00	31.00	148.00	947.71	-104.49	49.60	113.84	115.67	154.61	7.57
1008.00	31.60	144.80	981.89	-121.79	61.10	134.60	136.26	153.36	4.42
1038.00	31.70	142.70	1007.43	-134.48	70.41	150.34	151.80	152.37	3.69
1068.00	31.70	141.70	1032.95	-146.94	80.07	166.09	167.34	151.41	1.75
1097.00	31.90	141.70	1057.60	-158.93	89.54	181.35	182.42	150.60	.69
1126.00	32.20	142.00	1082.18	-171.03	99.05	196.73	197.64	149.92	1.17

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S		E-W		Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
				FT	FT	FT	FT		Distance FT	Direction Deg	
1156.00	32.10	141.70	1107.58	-183.59	108.91	212.67	213.46	149.32	.63		
1177.00	32.30	142.00	1125.35	-192.39	115.82	223.85	224.56	148.95	1.22		
1207.00	32.40	142.00	1150.69	-205.04	125.71	239.89	240.50	148.49	.33		
1237.00	32.70	141.70	1175.98	-217.73	135.68	256.02	256.54	148.07	1.14		
1267.00	33.00	142.00	1201.18	-230.53	145.73	272.27	272.73	147.70	1.14		
1297.00	32.60	141.70	1226.40	-243.31	155.77	288.51	288.90	147.37	1.44		
1327.00	32.10	141.30	1251.74	-255.87	165.76	304.54	304.87	147.06	1.81		
1356.00	32.40	141.30	1276.27	-267.95	175.44	319.99	320.27	146.79	1.03		
1385.00	32.40	141.70	1300.75	-280.11	185.11	335.51	335.75	146.54	.74		
1415.00	31.80	141.70	1326.17	-292.62	194.99	351.44	351.63	146.32	2.00		
1446.00	31.80	141.70	1352.51	-305.44	205.11	367.75	367.92	146.12	.00		
1476.00	30.90	140.60	1378.13	-317.60	214.90	383.34	383.47	145.92	3.56		
1506.00	30.20	140.60	1403.97	-329.38	224.58	398.55	398.66	145.71	2.33		
1536.00	30.20	142.00	1429.90	-341.15	234.02	413.62	413.70	145.55	2.35		
1566.00	30.40	143.10	1455.80	-353.17	243.22	428.75	428.82	145.45	1.97		
1596.00	30.80	143.10	1481.62	-365.38	252.39	444.01	444.08	145.37	1.33		
1626.00	31.00	143.40	1507.36	-377.73	261.61	459.42	459.47	145.29	.84		
1656.00	31.70	143.40	1532.98	-390.26	270.91	475.02	475.07	145.23	2.33		
1688.00	31.90	143.10	1560.18	-403.77	281.00	491.88	491.93	145.16	.80		
1719.00	32.30	142.40	1586.44	-416.88	290.97	508.35	508.38	145.09	1.76		
1750.00	32.30	142.40	1612.65	-430.00	301.08	524.90	524.93	145.00	.00		
1782.00	32.40	142.40	1639.68	-443.57	311.53	542.01	542.04	144.92	.31		
1813.00	32.20	142.40	1665.88	-456.70	321.63	558.57	558.59	144.84	.65		
1845.00	32.40	141.70	1692.93	-470.18	332.15	575.65	575.67	144.76	1.33		
1876.00	33.10	141.30	1719.00	-483.30	342.59	592.40	592.41	144.67	2.36		
1908.00	33.40	141.00	1745.76	-496.97	353.60	609.92	609.92	144.57	1.07		
1939.00	33.10	142.00	1771.69	-510.27	364.18	626.89	626.90	144.48	2.02		
1970.00	32.60	143.10	1797.73	-523.62	374.40	643.70	643.70	144.43	2.51		
2001.00	32.60	143.10	1823.85	-536.97	384.43	660.40	660.40	144.40	.00		
2031.00	32.60	143.40	1849.12	-549.92	394.10	676.56	676.56	144.37	.54		
2064.00	32.90	144.80	1876.88	-564.38	404.57	694.41	694.41	144.37	2.47		
2096.00	33.20	144.80	1903.70	-578.64	414.63	711.86	711.86	144.38	.94		
2127.00	33.40	144.80	1929.61	-592.55	424.44	728.88	728.88	144.39	.65		
2158.00	33.70	144.10	1955.44	-606.49	434.40	746.01	746.01	144.39	1.58		
2189.00	34.00	144.10	1981.19	-620.48	444.52	763.28	763.28	144.38	.97		
2221.00	33.30	143.80	2007.83	-634.81	454.96	781.01	781.01	144.37	2.25		
2252.00	32.30	143.10	2033.88	-648.31	464.96	797.80	797.80	144.35	3.45		
2285.00	32.20	143.10	2061.79	-662.39	475.53	815.41	815.41	144.33	.30		
2317.00	32.50	143.10	2088.83	-676.08	485.81	832.52	832.53	144.30	.94		
2348.00	32.40	143.40	2114.99	-689.41	495.76	849.15	849.16	144.28	.61		
2379.00	32.40	144.10	2141.16	-702.80	505.59	865.76	865.77	144.27	1.21		
2411.00	32.10	145.90	2168.22	-716.79	515.38	882.84	882.84	144.28	3.14		
2442.00	31.80	146.20	2194.53	-730.40	524.54	899.23	899.23	144.32	1.09		
2474.00	31.20	145.20	2221.81	-744.21	533.96	915.95	915.95	144.34	2.49		
2506.00	31.60	144.80	2249.13	-757.87	543.53	932.62	932.62	144.35	1.41		

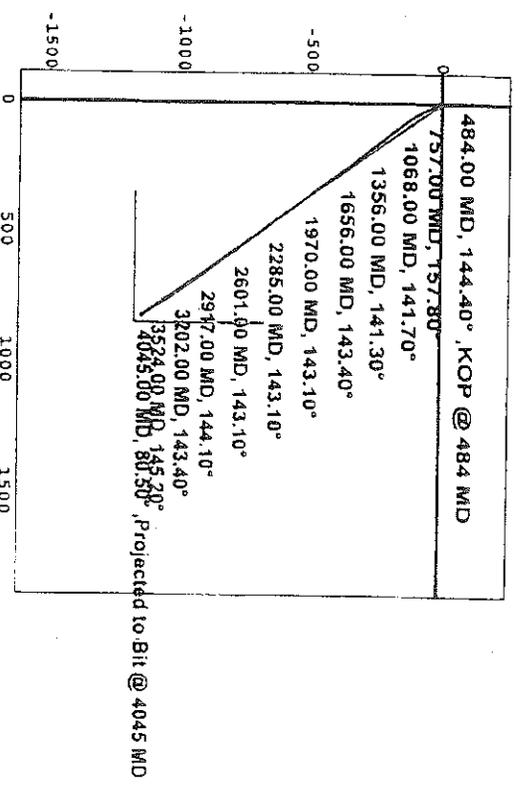
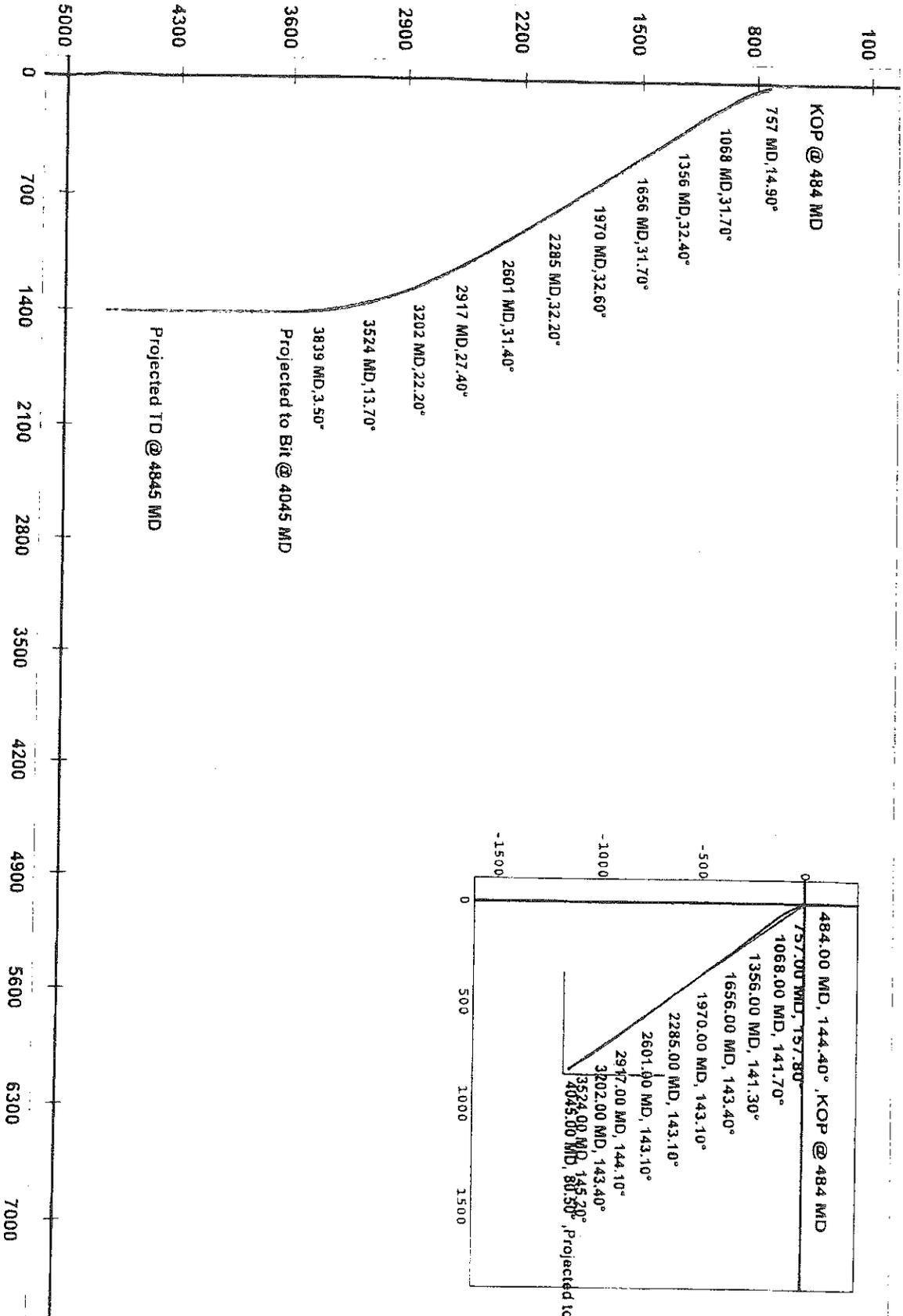
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth			Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
				N-S FT	E-W FT		Distance FT	Direction Deg	
2538.00	31.50	144.10	2276.40	-771.49	553.26	949.36	949.36	144.35	1.19
2569.00	31.40	143.40	2302.84	-784.53	562.82	965.54	965.54	144.34	1.22
2601.00	31.40	143.10	2330.16	-797.89	572.80	982.21	982.21	144.33	.49
2632.00	31.70	144.10	2356.57	-810.95	582.42	998.42	998.43	144.31	1.95
2664.00	31.60	144.10	2383.81	-824.55	592.27	1015.22	1015.22	144.31	.31
2696.00	31.20	143.80	2411.13	-838.03	602.08	1031.89	1031.89	144.30	1.34
2727.00	30.90	143.80	2437.69	-850.93	611.52	1047.88	1047.88	144.30	.97
2759.00	30.60	143.80	2465.19	-864.13	621.19	1064.24	1064.24	144.29	.94
2791.00	30.30	143.40	2492.77	-877.19	630.81	1080.45	1080.45	144.28	1.13
2823.00	29.60	142.40	2520.50	-889.93	640.45	1096.42	1096.42	144.26	2.69
2855.00	28.70	143.10	2548.45	-902.34	649.88	1112.00	1112.01	144.24	3.01
2886.00	27.90	143.40	2575.74	-914.11	658.68	1126.70	1126.70	144.22	2.62
2917.00	27.40	144.10	2603.20	-925.71	667.18	1141.08	1141.09	144.22	1.92
2949.00	27.20	144.50	2631.64	-937.63	675.75	1155.76	1155.76	144.22	.85
<b>TOP NIAGRINE</b>									
2972.00	26.34	144.22	2652.17	-946.05	681.78	1166.12	1166.12	144.22	3.79
2981.00	26.00	144.10	2660.25	-949.27	684.11	1170.08	1170.09	144.22	3.79
3013.00	25.60	143.40	2689.06	-960.50	692.34	1184.01	1184.02	144.22	1.57
3044.00	25.10	143.40	2717.08	-971.15	700.26	1197.28	1197.29	144.21	1.61
3075.00	25.00	143.40	2745.16	-981.69	708.08	1210.40	1210.41	144.20	.32
3107.00	24.90	143.80	2774.17	-992.56	716.09	1223.90	1223.91	144.19	.61
3139.00	24.30	143.10	2803.27	-1003.26	724.02	1237.22	1237.23	144.18	2.08
3171.00	23.00	143.10	2832.58	-1013.52	731.73	1250.05	1250.06	144.17	4.06
3202.00	22.20	143.40	2861.20	-1023.07	738.86	1261.96	1261.98	144.16	2.61
3233.00	21.70	144.50	2889.95	-1032.44	745.68	1273.55	1273.56	144.16	2.09
3264.00	20.80	145.50	2918.84	-1041.64	752.13	1284.79	1284.80	144.17	3.13
3296.00	20.20	146.60	2948.82	-1050.93	758.38	1295.99	1296.00	144.18	2.23
3327.00	19.40	147.70	2977.99	-1059.75	764.08	1306.48	1306.48	144.21	2.85
3358.00	18.80	148.40	3007.28	-1068.36	769.45	1316.60	1316.60	144.24	2.07
3368.00	18.80	148.40	3016.74	-1071.10	771.14	1319.81	1319.82	144.25	.00
3430.00	17.50	149.10	3075.66	-1087.61	781.16	1339.07	1339.07	144.31	2.13
3460.00	16.30	148.40	3104.36	-1095.07	785.68	1347.77	1347.77	144.34	4.06
3492.00	15.10	146.60	3135.17	-1102.37	790.33	1356.41	1356.41	144.36	4.05
3524.00	13.70	145.20	3166.16	-1108.97	794.79	1364.37	1364.37	144.37	4.51
3556.00	12.70	144.10	3197.32	-1114.93	799.01	1371.67	1371.67	144.37	3.22
3587.00	11.40	143.40	3227.63	-1120.15	802.84	1378.14	1378.14	144.37	4.22
3619.00	10.60	143.80	3259.04	-1125.06	806.46	1384.25	1384.25	144.37	2.51
3650.00	9.20	144.80	3289.58	-1129.39	809.58	1389.58	1389.58	144.37	4.55
3682.00	7.70	146.20	3321.23	-1133.26	812.24	1394.28	1394.28	144.37	4.73
3713.00	6.60	145.90	3351.99	-1136.46	814.40	1398.14	1398.14	144.37	3.55
3744.00	5.80	144.80	3382.81	-1139.22	816.30	1401.48	1401.48	144.38	2.61
3776.00	5.10	145.50	3414.67	-1141.71	818.04	1404.52	1404.52	144.38	2.20
3808.00	4.50	145.90	3446.55	-1143.92	819.55	1407.20	1407.20	144.38	1.88
3839.00	3.50	143.40	3477.48	-1145.69	820.79	1409.36	1409.36	144.38	3.27
3870.00	2.60	141.30	3508.43	-1147.00	821.80	1411.01	1411.01	144.38	2.93

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3902.00	2.30	143.40	3540.40	-1148.08	822.63	1412.38	1412.38	144.38	.98
3934.00	1.70	141.00	3572.38	-1148.96	823.31	1413.49	1413.49	144.38	1.89
3965.00	.60	142.70	3603.38	-1149.45	823.70	1414.11	1414.11	144.37	3.55
3997.00	.30	80.50	3635.38	-1149.57	823.89	1414.32	1414.32	144.37	1.66
<b>Projected to Bit @ 4045 MD</b>									
4045.00	.30	80.50	3683.38	-1149.53	824.13	1414.43	1414.43	144.36	.00
<b>Projected TD @ 4845 MD</b>									
4845.00	.30	80.50	4483.37	-1148.84	828.27	1416.27	1416.28	144.21	.00

Job Number: DR100040  
 Company: WEST BAY EXPLORATION  
 Lease/Well: WEST BAY/BOYD 2-27  
 Location: NORVELL TWP, JACKSON CO.  
 Rig Name: ADVANCED # 2  
 State/Country: MICHIGAN / USA

Declination: 6.33 DEGREES WEST  
 File name: C:\WINSERVER\EA\SDRIL~1\2011  
 Date/Time: 04-Mar-10 / 10:01

Directional Drilling Contractors, LLC





## RECORD OF WELL COMPLETION

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

(Submit 3 copies within 60 days of well completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Permit number/deepening permit no. 60011	API number 21-075-60011
Type of well (after completion) oil	
Well name & number West Bay Boyd #2-27	

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Drive Suite 200, Traverse City Mi. 49684				
Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Previous permit numbers		Total depth of well M.D. 4845' T.V.D. 4483'
Surface location SW ¼ of SE ¼ of SW ¼ Section 27 T 4S R 2E			Subsurface location (if directionally drilled) SE ¼ of NE ¼ of NW ¼ Section 27 T 4S R 2E	
Township Napoleon		County Jackson		
Footages: North/South 186' Ft. from South line and 1440' Ft. from West line of Sec.		Footages: North/South 963' Ft. from North line and 2264' Ft. from West line of Sec.		
Part 615 - oil/gas wells				
Date well completed D&A	Producing formation(s) D&A	Injection formation(s)	Part 625 - mineral wells Date of first injection Disposal formation(s) Solution formation(s)	

## COMPLETION INTERVALS(S)

Date	Number holes	Perforation or open hole interval	Open	
			Yes	No
3/11/10	52	4592-4605		X
3/15/10	28	4507-4514		X

## STIMULATION BY ACID OR FRACTURING

Date	Interval treated	Materials and amount used
3/12/10	4592-4605	500 gal 28% Hcl acid
3/15/10	4507-4514	500 gal 28% Hcl acid

## PRODUCTION TEST DATA

Oil Bbls/day	Gravity °API	Condensate Bbls/day	Gas MCF/day	Water Bbls/day	H <sub>2</sub> S Grains/100 ft <sup>3</sup>	B.H.P. and depth
0				100		

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (print or type) Timothy L. Baker	Signature 	Date 7/29/10
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Submit to: OFFICE OF GEOLOGICAL SURVEY  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30256  
LANSING MI 48909-7756



**RECORD OF WELL PLUGGING  
OR CHANGE OF WELL STATUS**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells of Act 451 PA 1994, as amended  
Non-submission and/or falsification of this information may result in fines and/or imprisonment.

- Part 615 Oil/Gas Well       Plugging  
 Part 625 Mineral Well       Change of Well Status

Permit number 60094	Well name and number West Bay Boyd #2-27
API number 21-075-60011	
Name and address of permittee West Bay Exploration 13685 S West Bay Shore Drive Suite 200, Traverse City Mi. 49684	
Type of well Oil & Gas	Field name
Surface location SW 1/4 SE 1/4 SW 1/4 Sec 2 <sup>A</sup> T 4S R 2E	
Township Napoleon	County Jackson
Date plugging/change started 05/14/10	Date plugging/change completed 05/21/10

Name and address of contractor/service company  
McConnell & Scully  
146 W. Main St.  
Homer, Mi.  
49245

DEQ employee issuing plugging permit or approving Change of Well Status.  
Walt Danyluk  
Date issued  
05/03/10

Any change of well status which results in a change of production or a change in injectivity must include production or injection test records. All records must include a narrative or daily chronology and signed certification noted on reverse.

**WELL PLUGGING**  
(Hole conditions after plugging)

CASING

Casing size	Where set	Amount casing pulled	Depth casing cut/perfed; or windows milled
11 3/4"	424	0	NA
8 5/8"	3417	0	NA
5 1/2"	4842	0	window milled to facilitate lateral under permit # 60094

PLUGS

Depth of plug Bottom	Depth of plug Top	Make and type of bridge or plug	Cement plugs: type, amount of cement & mix water	Additives, type and percent	Volume and types of spacers/flushes	Wait time	Tagged
							Top? Y/N
4571	4570	Bakerl	Mechanical				y
4322	4321	Baker	Mechanical				y

- Check if NORM or other materials were left or reinserted into wellbore. If so, describe materials fully in the Daily Chronology section on reverse.  
 Check if cores were taken and attach core descriptions

Mail completed original and three copies to the appropriate DEQ district office within 60 days after completion of plugging/change of a Part 615 oil/gas well or within 30 days of a Part 625 mineral well.

OFFICE OF GEOLOGICAL SURVEY  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256  
LANSING, MI 48909-7756

COMPLETE BOTH SIDES

API number  
21-075-60011

Permit number  
60094

**CHANGE OF WELL STATUS**

Change was to:  Convert current zone to:  Remediate well:  Plugback (recomplete as)  Redrill:

Production  Perf and test existing zone  New production zone  Horizontal drain hole

Disposal  Repair casing/cement  Disposal  Collapsed casing

Secondary recovery  Other \_\_\_\_\_  Secondary recovery  Underream open hole

Storage  Storage  Storage

Other \_\_\_\_\_  Other \_\_\_\_\_

**Well casing record - BEFORE change**

Casing		Cement		Perforations			Acid or fracture treatment record
Size	Depth	Sacks	Type	From	To	If plugged, HOW?	
11 3/4"	424'	150/150	lite/A				
8 5/8"	3417'	650/200	lite/A				
5 1/2"	4842'	75/150	Halcm/A	4592	4605		500 gal 28% Hcl acid
				4507	4514		500 gal 28% Hcl acid

**Well casing record - AFTER change (Indicate additions and changes only, complete test record)**

Casing		Cement		Perforations			Acid or fracture treatment record
Size	Depth	Sacks	Type	From	To	If plugged, HOW?	
				4592	4605	CIBP	
				4507	4514	CIBP	

**BEFORE CHANGE**

Total depth	Completed Fm	Well completed for	
4842	Black River	Oil & GAS	
BOPD	MCFGPD	Inj Rate	Pressure
0			

**AFTER CHANGE**

Total depth	Completed Fm	Well completed for	
4583	Black River	Oil & Gas	
BOPD	MCFGPD	Inj Rate	Pressure
200	98		460

**DAILY PRODUCTION TEST RECORD**

Date	Oil (bbls)	Water (bbls)	Gas (Mcf)	Pressure	
				Tubing	Casing
5/25/10	231	0	68	520	620
5/26/10	178	0	96	482	688
5/27/10	196	0	100	492	690
5/28/10	211	0	100	460	691
5/29/10	188	0	100	457	688
5/30/10	195	0	100	453	688
5/31/10	195	0	100	447	688

**DAILY INJECTION TEST RECORD**  Injection well  Brine disposal

Date	Bbls water or Mcf gas	Pressure		Specific gravity of water
		Beginning	Ending	

**DAILY CHRONOLOGY**

Describe in detail the daily chronology of change/plugging, include days shut down. Describe exceptions to issued plugging instructions. Describe tools, tubing, etc. left in hole and any logs run. Include dates pits filled, surface restored etc. Use additional pages as needed.

Date	Narrative
5/14/10	MIRU set CIBP @ 4321' Mill Window & Kick off at 4310 under permit # 60094 land lateral at 4267', 2140' South of surface and 824' East TOH Run tbg to T.D.
5/21/10	Test Well

NOTICE: Under Part 615 Supervisor of Wells or Part 625 Mineral Wells, Act 451 PA 1994, as amended, a well owner has continuing liability for the integrity of a plugged well.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (printed or typed) *Timothy L. Baker - Operations Mgr* Authorized signature *[Signature]* Date *5/21/10*

NOTE: Bonds cannot be terminated until plugging is completed, cellar, rat and mouse holes, and pits filled, site leveled and cleaned and records filed.



## REC( D OF WELL DRILLING OR DEEPENING

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number  
60094

(Submit 3 copies within 60 days of drilling completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Suite 200 Traverse City Mi. 49684		API number 21-075-60011	
Name and address of drilling contractor Advanced Energy Services P.O. Box 85 South Boardman Mi. 49680		Well name and number West Bay & Boyd #2-27 HD 1	
Date drilling began 05/15/2010		Surface location SW 1/4 of SE 1/4 of SW 1/4 Section 22 T4S R2E	
Date drilling completed 05/21/2010		Township Norvell	
Total depth of well Driller 5102 Log NA		County Jackson	
Formation at total depth Black River		Footages North/South East/West 186' ft. from S line and 1440' ft. from W line of sec.	
Elevations K.B. 1042.6 ft. R.F. ft. R.T. 1041 ft. Grd 1029.2 ft		Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
		Previous permit numbers	
		Subsurface location (if directionally drilled) NE 1/4 of SE 1/4 of NW 1/4 Section 27 T 4S R 2E	
		Township Norvell	
		County Jackson	
		Footages North/South East/West 1590' ft. from N line and 2256' ft. from W line of sec.	
		Feet drilled - cable tools from to	
		Feet drilled - rotary tools from surf to TD	

Casing, Casing Liners and Cementing, Operating Strings					Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)				
Size	Where set	Cement	T.O.C.	Ft. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4"	424'	150 lite/150 A	surface						
8 5/8"	3417'	650 lite/200 A	surface						
5 1/2"	4842'	75 Halcem	3300"						
		150 Halcem							
		(PN 60011)							

Gross Pay Intervals				All Other Oil and Gas Shows Observed or Logged								
Formation	Oil or Gas	From	To	Where Observed (X)								
				Formation	Oil or Gas	Depth	Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
Black River	both	4310'	5102'									

Depth Correction		Deviation Survey		Plugged Back		
Depth	Correction	Run at	Degrees	Yes	No	Depth
see	attached	directional				

Geophysical / Mechanical Logs (list each type run)		
Brand	Log types	Logged intervals
Unable to run logs in lateral		

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date 06/22/2010	Name and title (print) Timothy L. Baker	Signature 
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Submit to: OFFICE OF GEOLOGICAL SURVEY,  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256, LANSING, MI 48909-7756

# FORMATION RECORD

Attach additional sheets if necessary

Elevation used <b>1043</b>	Geologist name <b>Fowler/Baker/Vancyce</b>	API number	Permit number/Deepening number <b>60094</b>
		Tops taken from <input type="checkbox"/> Driller's log <input checked="" type="checkbox"/> Sample log <input type="checkbox"/> Electric log	

	From	To	Formation (type, color, hardness)		From	To	Formation (type, color, hardness)
	<p>Note: if well directionally drilled, add true vertical depth formation tops where appropriate</p>						
surf		222(log)	Drift- Unconsolidated sand and gravel				
222		290	Shale& Siltstone- brn-gy-Grn, silty at top organic at base				
290		1230	Shale-Coldwater- Md-dk Brn-Blk, Silty, incr organic at base				
1230		1370	Sunbury Sh/Berea siltstone-Sh, Md Brn-Blk Silty, pyr. mixed w/siltstone, SSO-Lt md brn, Arg				
1370		15	Antrim-Dk Brn-Blk, Pyrand incr organic at base, SG incr toward base				
1554		1622	Traverse Fm- Limestone, Dk Brn-md Brn, Dns, Pyr, Dolomite, Md Gy-Gy, Dns				
1622		1744	Traverse Limestone-Md Brn-lt Brn Vfxln, Hd,				
1744		1978	Shale intbd w Dolomite and Lmst, Md Brn-Gy, Vfxln, Dns, Pos Dundee@1728'-Brn-Lt brn, Poor Samp, Pos Cvgs				
1978		2200	Detroit River- Anhydrite and Dolomite/Limestone, Lt-Md Brn Dns, Vfxln in pt, NS				
2200		2416	Bass Island/Bois Blanc- Dolomite, Anhydrite & Limestone AA				
2416		2685	G-Unit-Dolomite-Arg, Hd grading to Anhydrite- Lt-md Gy Brn				
2685		2766	C Shale-Gy-rdBrn, W/Dolomite and Anhydrite, Lt gy-Brn-bf Poor Samp. l				
2766		2972	B Evap-Anhydrite Wh-Lt Gy W/Dolomite-Vfxln, Lt-md Gy, Intbd at base with Anhy. AA	If well was cored, attach core description			
2972		3160	Dolo & Limst-Wh-lt Gy, Dns, Anhydritic @3110-Wh, Dns	DRILL STEM TEST DATA			
3160		3386	Niagaran-Dolomite, AA, Md Gy, Vfxln Intbd W/Anhydrite AA, V porous 2880'-3300'				
3386		3884	Clinton/Cinn-Dolomite, Arg, hd, dk gy, grd to lt gy intbd w/Lmst, lt-md gy Dns				
3884		4212	Ulrica- Shale, Gy-Grn, Gummy-Hd				
4212		4526	Trenton-Dolo, Lt -Md Gy, Dns, W/ Lmst @ 4236'-4526' Lt-Md Gy Brn, Vfxln,				
4526		TD	Black River- Dolomite, Md Brn-GyBrn, SO&G@4590'				
		Under PN 60011					

4311

5102

discriptions of rock cuttings after  
drilling windc  
Dolomite- Lt Gy - Lt Brn, fxln,so &G,  
G cul & Flu ,Tr Frac,Partial loss of  
returns

LIST ATTACHMENTS

OFFICE OF GEOLOGICAL SURVEY USE ONLY

Reviewed by

Date of review



Directional Drilling Contractors, LLC.

Job Number: DR100134

Company: WEST BAY EXPLORATION

Lease/Well: WEST BAY/ BOYD 2-27 HD1

Location: NORVELL TWP., JACKSON CO.

Rig Name: MCCONNELL & SCULLY

RKB:

G.L. or M.S.L.:

State/Country: MICHIGAN / USA

Declination: 6.37 DEGREES WEST

Grid:

File name: C:\WINSERVE\PENDING\2010\BOYD227.SVY

Date/Time: 24-May-10 / 12:20

Curve Name: WEST BAY/BOYD 2-27 HD1 ( as drilled )

Directional Drilling Contractors  
SURVEY REPORT

WINSERVE SURVEY CALCULATIONS  
Minimum Curvature Method  
Vertical Section Plane 158.94  
Vertical Section Referenced to Wellhead  
Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
KOP @ TIE @ 4315 MD									
4315.00	.30	80.50	3953.37	-1149.29	825.53	1369.17	1415.05	144.31	.00
4346.00	5.20	164.10	3984.33	-1150.63	826.00	1370.59	1416.41	144.33	16.69
4379.00	11.30	164.50	4016.97	-1155.19	827.27	1375.30	1420.86	144.39	18.49
4409.00	18.00	173.60	4045.98	-1162.63	828.57	1382.72	1427.67	144.52	23.55
4440.00	25.90	180.70	4074.72	-1174.18	829.03	1393.66	1437.36	144.78	26.84
4472.00	34.30	181.70	4102.38	-1190.21	828.67	1408.49	1450.28	145.15	26.30
4503.00	40.00	181.70	4127.08	-1208.92	828.12	1425.75	1465.35	145.59	18.39
4535.00	45.80	181.70	4150.51	-1230.68	827.47	1445.83	1483.00	146.08	18.12
4567.00	51.30	181.40	4171.68	-1254.65	826.83	1467.96	1502.59	146.61	17.20
4598.00	57.90	180.70	4189.63	-1279.90	826.37	1491.36	1523.49	147.15	21.37
4630.00	64.60	181.00	4205.01	-1307.94	825.95	1517.37	1546.90	147.73	20.95
4662.00	72.30	183.10	4216.76	-1337.66	824.87	1544.72	1571.54	148.34	24.82
4693.00	79.20	184.90	4224.39	-1367.61	822.77	1571.92	1596.03	148.97	22.96
4722.00	83.30	184.50	4228.80	-1396.17	820.42	1597.73	1619.38	149.56	14.20
4754.00	86.60	184.50	4231.61	-1427.94	817.92	1626.48	1645.61	150.20	10.31
4786.00	89.10	183.40	4232.81	-1459.84	815.72	1655.46	1672.28	150.80	8.53
4817.00	89.90	182.40	4233.08	-1490.80	814.15	1683.78	1698.63	151.36	4.13
4848.00	89.60	180.70	4233.22	-1521.79	813.31	1712.40	1725.49	151.88	5.57
4880.00	90.20	180.00	4233.28	-1553.79	813.12	1742.19	1753.69	152.38	2.88
4911.00	92.70	180.70	4232.49	-1584.77	812.93	1771.04	1781.11	152.84	8.37
4943.00	92.80	180.00	4230.96	-1616.74	812.73	1800.80	1809.52	153.31	2.21

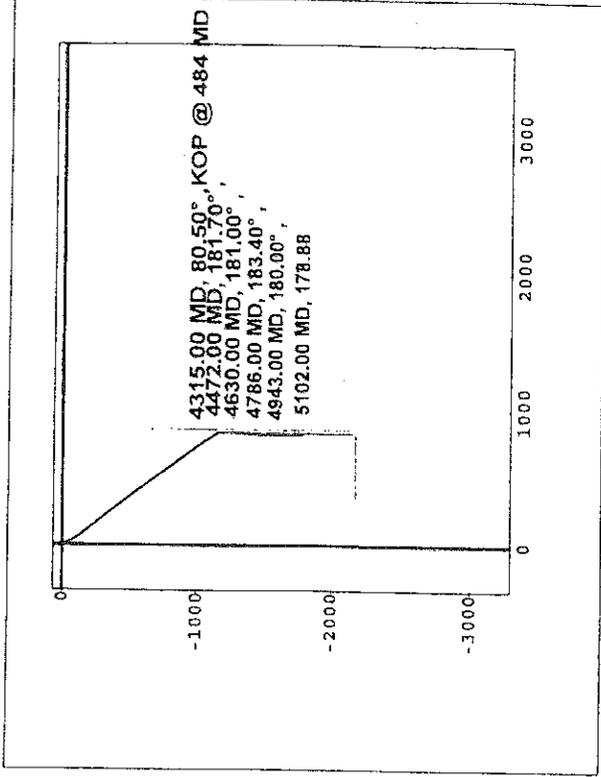
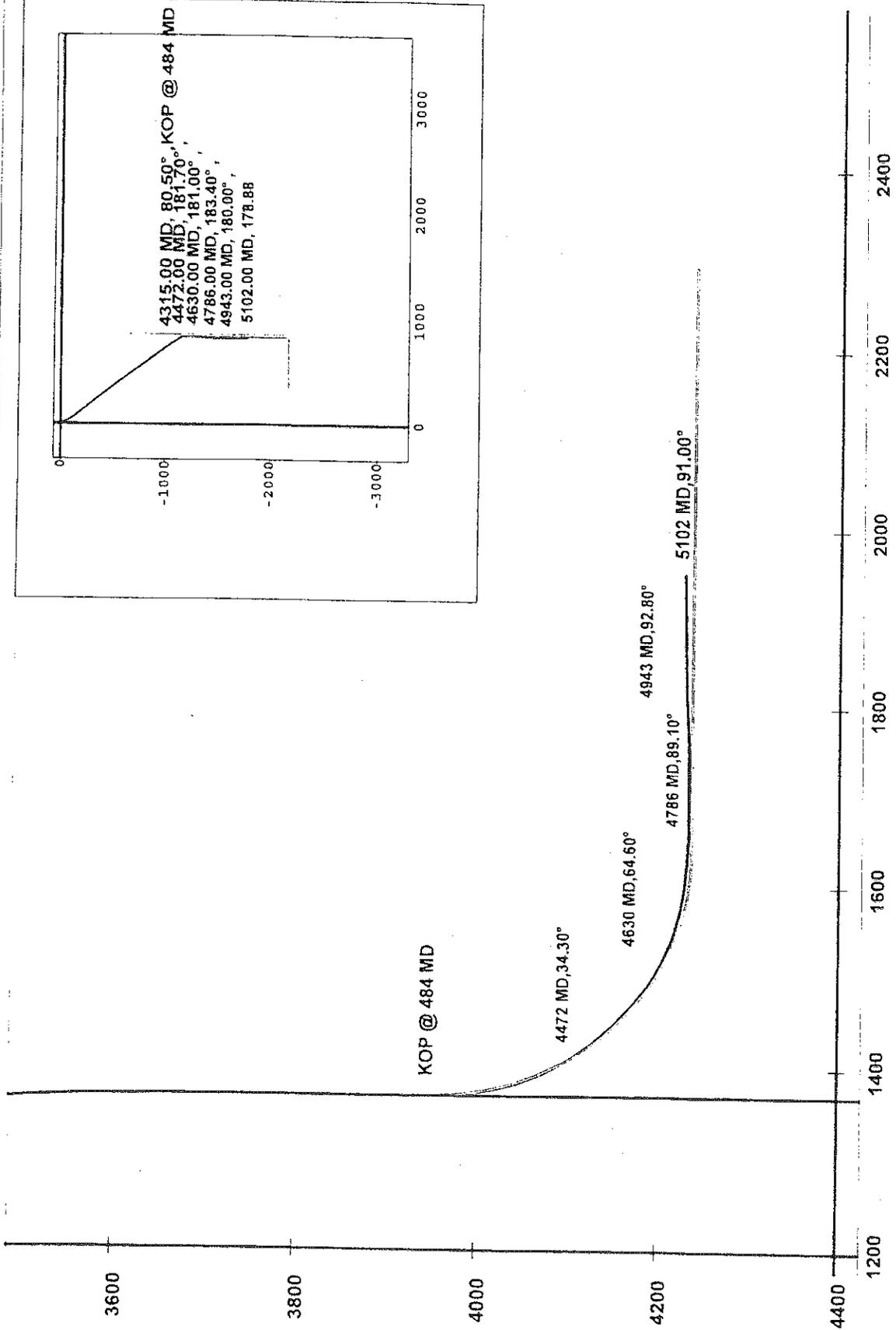
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
4974.00	91.40	179.30	4229.82	-1647.71	812.92	1829.77	1837.34	153.74	5.05
5036.00	90.70	178.20	4228.68	-1709.69	814.28	1888.09	1893.69	154.53	2.10
5092.00	90.95	178.88	4227.87	-1765.66	815.70	1940.84	1944.98	155.20	1.29
<b>PROJECTED TD @ 5102 MD</b>									
5102.00	91.00	179.00	4227.70	-1775.66	815.89	1950.24	1954.13	155.32	1.29

Job Number: DR100134  
 Company: WEST BAY EXPLORATION  
 Lease/Well: WEST BAY/BOYD 2-27 HD1  
 Location: NORVELL TWP, JACKSON CO.  
 Rig Name: MCCONNELL & SCULLY  
 State/Country: MICHIGAN / USA

Declination: 6.37 DEGREES WEST  
 File name: C:\WINSERVE\I\PENDING\20  
 Date/Time: 24-May-10 / 12:17



Directional Drilling Contractors, LLC.





## RECORD OF WELL COMPLETION

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

(Submit 3 copies within 60 days of well completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Permit number/deepening permit no. 60094	API number 21-075-60011
Type of well (after completion) oil	
Well name & number West Bay Boyd #2-27 HD 1	

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Drive Suite 200, Traverse City Mi. 49684		
Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Previous permit numbers	Total depth of well M.D. 5102' T.V.D. 4228'
Surface location SW 1/4 of SE 1/4 of SW 1/4 Section 22 T 4S R 2E		Subsurface location (if directionally drilled) NE 1/4 of SE 1/4 of NW 1/4 Section 27 T 4S R 2E
Township Napoleoni	County Jackson	Township Napoleon County Jackson
Footages: North/South East/West 186' Ft. from South line and 1440' Ft. from West line of Sec.		Footages: North/South East/West 1590' Ft. from North line and 2256' Ft. from West line of Sec.
Part 615 - oil/gas wells		Part 625 - mineral wells
Date well completed oil & Gas	Producing formation(s) Black River	Injection formation(s) Date of first injection Disposal formation(s) Solution formation(s)

## COMPLETION INTERVALS(S)

Date	Number holes	Perforation or open hole interval	Open	
			Yes	No
5/25/10	open hole	4311-5102'	x	

## STIMULATION BY ACID OR FRACTURING

Date	Interval treated	Materials and amount used

## PRODUCTION TEST DATA

Oil Bbls/day	Gravity °API	Condensate Bbls/day	Gas MCF/day	Water Bbls/day	H <sub>2</sub> S Grains/100 ft <sup>3</sup>	B.H.P. and depth
200	43		98			

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (print or type) Timothy L. Baker	Signature 	Date 05/30/10
--	---------------	------------------

Submit to: OFFICE OF GEOLOGICAL SURVEY  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30256  
LANSING MI 48909-7756

12148 LADD

Geological Survey No.  

# MICHIGAN DEPARTMENT OF PUBLIC HEALTH WATER WELL AND PUMP RECORD

W 7871  
PERMIT NUMBER

<b>1 LOCATION OF WELL</b>					
County <b>JACKSON</b>	Township Name <b>NORVELL</b>	Fraction <b>SE 1/4 NE 1/4 NE 1/4</b>	Section <b>27</b>	Town Number <b>4 S</b>	Range Number <b>2 E</b>

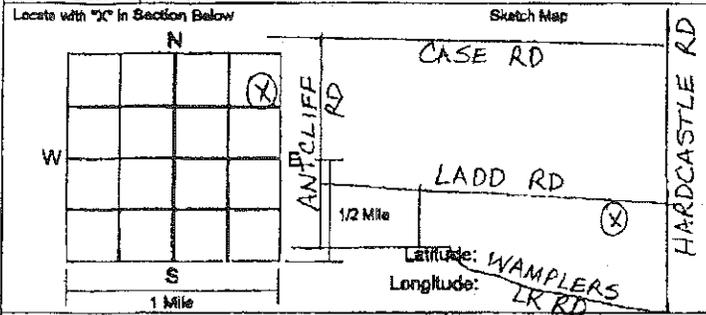
Distance and Direction From Road Intersection

**12148 LADD**  
**BROOKLYN MI 49230**

Street Address City Of Well location

**3 OWNER OF WELL: ROBERT A. BRISTLE**  
12148 LADD  
BROOKLYN MI 49230

Address Same as Well Location?



**4 WELL DEPTH: 188 ft.**      Date Completed: **8/6/99**      **NEW WELL**

**5 DRILLING METHOD: ROTARY**

**6 USE: DOMESTIC**

**7 CASING: PLASTIC**  
Diameter 5" to 173 ft. depth      Height: ABOVE Surface 1'  
Grouted Drill Hole Diameter 9" to 173 ft. depth      Weight SDR 21  
Drive Shoes?

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND	20	20
YELLOW CLAY	8	28
GRAY CLAY	24	52
GRAVEL	3	55
GRAY CLAY	112	167
SAND ROCK	21	188
<b>PUMPING LEVEL</b>		
<b>EST WITH AIR</b>		
<b>100+ GPM</b>		

**8 SCREEN: Type: NONE**      Diameter \* Nominal

**FITTINGS:**

**9 STATIC WATER LEVEL: 52 ft. below land surface**      Flow?

**10 PUMPING LEVEL: below land surface**  
52 ft. after 2 hrs. pumping at 12 G.P.M.

**11 WELL HEAD COMPLETION: PITLESS ADAPTOR**

**12 WELL GROUTED?**   
EZ SEAL From 0 to 173 ft.  
19 bags of cement.

**13 NEAREST SOURCE OF CONTAMINATION:**  
Type SEPTIC Distance 150 ft. Direction S  
Well disinfected upon completion?   
Old Well Plugged?

**14 PUMP: Manufacturers name RED JACKET**  
Model number 75CONSWI-126BC HP 3/4 VOLTS 230V  
Length of Drop Pipe 75 ft. capacity 12 G.P.M.  
Type SUBMERSIBLE  
**PRESSURE TANK:**  
Manufacturers Name AMTROL (OWNERS)  
Model Number VVX 202 Capacity 6.2 Gallons

RECEIVED SEP 09 1999

RECEIVED

OCT 08 1999

MICH DEPT OF ENVTL & NATURAL QUALITY

Drinking Water & Ground Water Protection Division  
Ground Water, Surface Water & Wells Construction Unit

**CRIBLEY OFFICE NOTES**

**WELLS AWC 6-1 1" PVC 75**  
**CDCW14574P18609**

**15 REMARKS, ELEVATION, SOURCE OF DATA, ETC.**

**NO LINER**

**17 RIG OPERATOR'S NAME: KEN PEARCE**

**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.

**Cribley Drilling Co., Inc.**      **81-0524**  
REGISTERED BUSINESS NAME      REGISTRATION NO.

Address: **6300 Dexter Chelms Rd., Dexter, MI 48130**

Signed: *Jack A. Clark*      Date: **8/17/99**  
AUTHORIZED REPRESENTATIVE

D87d 2/89

**IMPORTANT: File with deed.**

GEOLOGICAL SURVEY COPY

Authority: Act 368 PA 1878  
Completion: Required  
Penalty: Conviction of a violation of any provision is a misdemeanor

W 313-481-7901

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

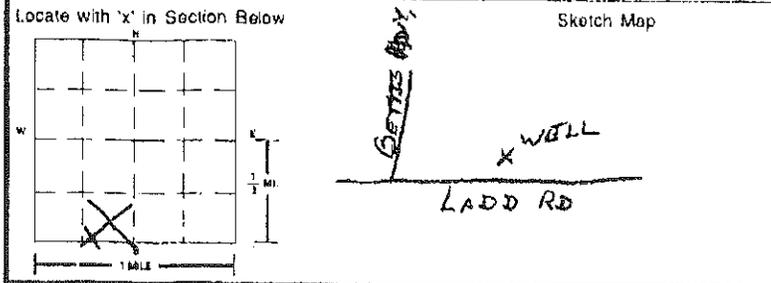
PERMIT NO:  
**W-4119**

TAX NO:  
1. LOCATION OF WELL  
County **JACKSON**

Township Name **NORWELL** Fraction **SW 1/4 SE 1/4 SW 1/4** Section No. **22** Town No. **45** Range No. **2E**

Distance and Direction from Road Intersection  
**1/4 MILE EAST OF BETTIE'S HWY.  
ON N. SIDE OF LADD RD.**

3. OWNER OF WELL **LARRY KLOPFER**  
Address **12160 LADD RD.  
BROOKLYN, MI**  
Address Same as Well Location  Yes  No



4. WELL DEPTH: **114** ft. Date Completed **5/20/98**  
 New Well  
 Replacement Well

2. FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
<b>SAND</b>	<b>27</b>	<b>27</b>
<b>CLAY</b>	<b>64</b>	<b>91</b>
<b>GRAVEL + CLAY</b>	<b>12</b>	<b>103</b>
<b>SAND + GRAVEL</b>	<b>11</b>	<b>114</b>

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

7. CASING:  Steel  Threaded  Plastic  Welded  
 Other  
Height: Above/Below Surface: **1** ft.  
Diameter: **5** in. to **108** ft. depth Weight: **PVC** lbs./ft.  
BORE HOLE: Diameter: **8** in. to **114** ft. depth  
 Drive Shoe  Shale Packer

8. SCREEN:  Not Installed  Gravel-Packed  
Type **JOHNSON** Diameter **4"**  
Slot/Gauze **.020** Length: **6 FT**  
Set Between **108** ft. and **114** ft.  
FITTINGS:  K-Packer  Bremer Check  
 Blank Above Screen ft. Other **THREAD ON**

9. STATIC WATER LEVEL: **30** ft. Below Land Surface  Flowing

10. PUMPING LEVEL: Below Land Surface **50** ft. After **2** hrs. Pumping at **12** G.P.M.  
 Plunger  Baller  Air  Test Pump

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

12. WELL GROUTED?  No  Yes From **0** to **108** ft.  
 Neat Cement  Bentonite  Other  
No. of Bags **5 1/2** Additives **BEN SEAL**

13. NEAREST SOURCE OF POSSIBLE CONTAMINATION:  
Type **SEPTIC** Distance **50+** ft. Direction **NORTH**  
Type \_\_\_\_\_ Distance \_\_\_\_\_ ft. Direction \_\_\_\_\_

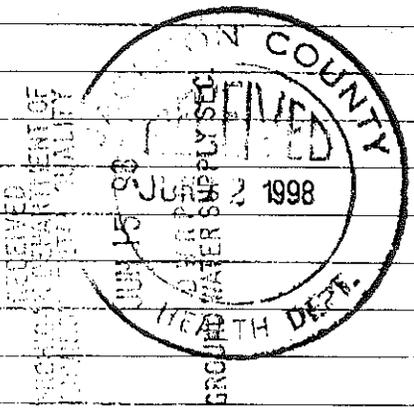
15. ABANDONED WELL PLUGGED?  Yes  No  
Casing Diameter \_\_\_\_\_ in. Depth \_\_\_\_\_ ft.  
PLUGGING MATERIAL:  Neat Cement  Bentonite Slurry  
 Cement/Bentonite Slurry  Concrete Grout  Bentonite Chips  
No. of Bags \_\_\_\_\_ Casing Removed?  Yes  No

14. PUMP:  Not Installed  Pump Installation Only  
Manufacturer's Name **MYERS**  
Model Number **JS12A** HP **1/2** Volts **230**  
Length of Drop Pipe **80** ft. Capacity **10** G.P.M.  
TYPE:  Submersible  Jet  Other  
PRESSURE TANK:  
Manufacturer's Name **WEL-X-TROL**  
Model Number **WX-202** Capacity **20** Gallons

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

17. DRILLING MACHINE OPERATOR:  
 Employee  Subcontractor  
Name **CHARLES F. TORNOW**

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.  
**GARDON & SONS INC.** **2039**  
REGISTERED BUSINESS NAME REGISTRATION NO.  
Address **3768 M-50 TIPTON, MI 49287**  
Signed **Philip R. Good** Date **5-20-98**  
AUTHORIZED REPRESENTATIVE

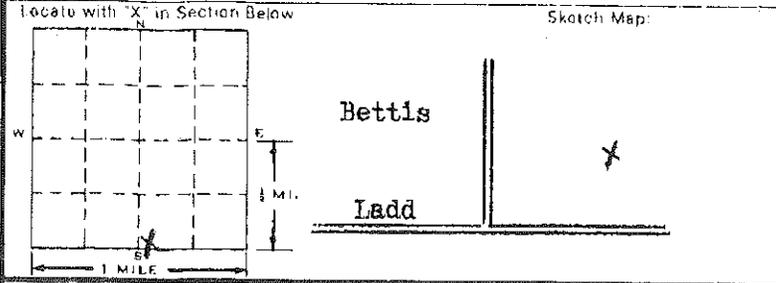


1 LOCATION OF WELL

County **Jackson** Township Name **Norvell** Section **SW 1/4 SW 1/4 SE 1/4** Section Number **(22) 21** Town Number **T4S N/S** Range Number **R2E E/W**

Distance And Direction From Road Intersection  
**1/2 mi E Bettis & Ladd Roads**  
**12180 Ladd Rd**  
 Street Address & City of Well Location

3 OWNER OF WELL:  
**Harry Haligus**  
 Address **12180 Ladd Road**  
**Brooklyn, MI 49230**  
 Address Same As Well Location?  Yes  No



4 WELL DEPTH: (completed) **180** ft Date of Completion **11/30/83**

5  Cable tool  Rotary  Driven  Dug  
 Hollow rod  Auger  Jetted

6 USE:  Domestic  Type I Public  Type II Public  
 Irrigation  Type Ila Public  Heat pump  
 Test Well  Type Iib Public

7 CASING: Diameter  Steel  Threaded  Plastic  Welded  
 Height Above/SURFACE **1** ft  
 Surface **1** ft  
 Weight **2** lbs./ft.  
 Drive Shoe  Yes  No

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand and gravel	21	21
Sand, gravel and shale	89	110
Dirty shale, sand and gravel	24	134
Sand, gravel and shale	14	148
Sandstone	32	180

8 SCREEN:  Not installed  
 Type \_\_\_\_\_ Diameter \_\_\_\_\_  
 Slot/Gauze \_\_\_\_\_ Length \_\_\_\_\_  
 Set between \_\_\_\_\_ ft and \_\_\_\_\_ ft  
 FITTINGS  K-Packer  Lead Packer  Bremer Check  
 Blank above screen \_\_\_\_\_ ft. Other \_\_\_\_\_

9 STATIC WATER LEVEL: **43** ft. below land surface  Flow

10 PUMPING LEVEL: below land surface  
**44** ft. after **1** hrs pumping at **15** G.P.M.  
 \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. pumping at \_\_\_\_\_ G.P.M.

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

12 WELL GROUTED?  No  Yes From **1** to **156** ft.  
 Neat cement  Bentonite  Other \_\_\_\_\_  
 No. of bags of cement **1** Additives \_\_\_\_\_

13 Nearest source of possible contamination  
 Type \_\_\_\_\_ Distance \_\_\_\_\_ ft. Direction \_\_\_\_\_  
 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

ADDED INFO BY DRILLER, ITEM NO.  
 \*CORRECTED BY  
 \*\*ADDITION BY  
 ELEVATION  
 DEPTH TO SPK

8640

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.  
**Tox & Boley Well Drilling, Inc.** 167 - 1517  
 REGISTERED BUSINESS NAME REGISTRATION NO.  
 Address **6655 Brooklyn Rd., Jackson, MI 49201**  
 Signed **Thomas J. McDeville** Date **5/14/84**  
 AUTHORIZED REPRESENTATIVE

Probably  
12215 Ladd Rd



# Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.



Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 11701	<b>County:</b> Jackson		<b>Township:</b> Norvell	
<b>Well ID:</b> 38000006689	<b>Town/Range:</b> 04S 02E	<b>Section:</b> 27	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
	<b>Distance and Direction from Road Intersection:</b> .4 MILE E OF LADD RD & BETTIS RD				
	<b>Well Owner:</b> NEIL WELCH				
	<b>Well Address:</b> 1215 LADD RD		<b>Owner Address:</b> 305 CASS AVE JACKSON, MI 49203		
<b>Elevation:</b>					
<b>Latitude:</b> 42.10084738					
<b>Longitude:</b> -84.18260323					
<b>Method of Collection:</b> Interpolation-Map					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 196.00 ft.	<b>Date Completed:</b> 8/1/2003	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Aermotor	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> A-12-50	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 65.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Shale packer/trap		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 168.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 168.00 ft. depth 4.75 in. to 196.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	<b>Pressure Tank Type:</b> Unknown
		<b>Manufacturer:</b> Well-Mate	<b>Model Number:</b> WM-6
		<b>Pressure Relief Valve Installed:</b> No	<b>Tank Capacity:</b> 5.0 Gallons

<b>Static Water Level:</b> 43.00 ft. Below Grade (Not Flowing) <b>Unrestricted Flow Rate:</b> <b>Well Yield Test:</b> Pumping level 47.00 ft. after 1.00 hrs. at 20 GPM	<b>Yield Test Method:</b> Test pump	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
		Clay Sand Gravel	8.00	8.00
		Sand & Gravel W/Stones	4.00	12.00
		Sand & Gravel	25.00	37.00
		Clay	18.00	55.00
		Clay Sand Gravel	31.00	86.00
		Sand & Gravel Silty	19.00	105.00
		Clay Sand Gravel	50.00	155.00
		Sand & Gravel	7.00	162.00
		Gray Sandstone	34.00	196.00

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well	<b>Geology Remarks:</b>
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 16.00	<b>Additives:</b> None
	<b>Depth:</b> 0.00 ft. to 168.00 ft.	

**Wellhead Completion:** Pileless adapter

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> TBURKHOLDER/MSEXTON
<b>Type:</b> Septic tank	<b>Employment:</b> Employee
<b>Distance:</b> 50 ft.	
<b>Direction:</b> Southwest	

**Contractor Type:** Water Well Drilling Contractor **Reg No:** 167  
**Business Name:** FOX & BOLEY WELL DRILLING, INC  
**Business Address:**

**Water Well Contractor's Certification**

This well was drilled under my supervision and this report is true to the best of my knowledge and belief.

**Signature of Registered Contractor** \_\_\_\_\_ **Date** \_\_\_\_\_

**General Remarks:**

**Other Remarks:**

**ATTENTION WELL OWNER: FILE WITH DEED**



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 8613	<b>County:</b> Jackson	<b>Township:</b> Norvell
<b>Well ID:</b> 38000004062	<b>Town/Range:</b> 04S 02E	<b>Section:</b> 27	<b>Well Status:</b> Active
	<b>WSSN:</b>		
	<b>Source ID/Well No:</b>		
<b>Distance and Direction from Road Intersection:</b> 2/10 MI E. OF LADD RD. & BETTIS RD			
<b>Well Owner:</b> HOLLIS HAMM			
<b>Well Address:</b> 12161 LADD RD. BROOKLYN, MI 49230		<b>Owner Address:</b> 12161 LADD RD. BROOKLYN, MI 49230	
<b>Method of Collection:</b> Address Matching-House Number			

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 212.00 ft.	<b>Date Completed:</b> 7/7/2000	<b>Pump Installation Date:</b>	<b>HP:</b> 1.00
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Aermotor	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> A+20-100	<b>Pump Capacity:</b> 20 GPM
<b>Casing Joint:</b> Other		<b>Drop Pipe Length:</b> 65.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 176.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 176.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	
		<b>Pressure Tank Type:</b> Unknown	
		<b>Manufacturer:</b> Well-Mate	
		<b>Model Number:</b> WM-14WB	<b>Tank Capacity:</b> 14.0 Gallons
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 45.00 ft. Below Grade (Not Flowing) <b>Unrestricted Flow Rate:</b> <b>Well Yield Test:</b> Pumping level 46.00 ft. after 1.00 hrs. at 20 GPM	<b>Yield Test Method:</b> Test pump	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
		Sand & Gravel	2.00	2.00
		Clay	7.00	9.00
		Sand & Gravel	6.00	15.00
		Clay	4.00	19.00
		Clay Sand Gravel	65.00	84.00
		Sand & Gravel	11.00	95.00
		Sand & Gravel	13.00	108.00
		Clay Sand Gravel	22.00	130.00
		Gray Sandstone	2.00	132.00
		Clay Sand Gravel	20.00	152.00
		Sand Gravel Clay	8.00	160.00
		Sand & Gravel	11.00	171.00
		Gray Sandstone	27.00	198.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 18.00	<b>Additives:</b> Other	<b>Depth:</b> 0.00 ft. to 175.00 ft.

<b>Wellhead Completion:</b> Pileless adapter	<b>Geology Remarks:</b>
--	-------------------------

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> TBURKHOLDER/HHARRIS
<b>Type:</b> None	<b>Employment:</b> Employee
<b>Distance:</b>	
<b>Direction:</b>	

(Continued on page 2)

<b>General Remarks:</b>
<b>Other Remarks:</b> Casing Joint: GLUED, Grouting Additive 1: QUICK-GROUT/BENSEAL

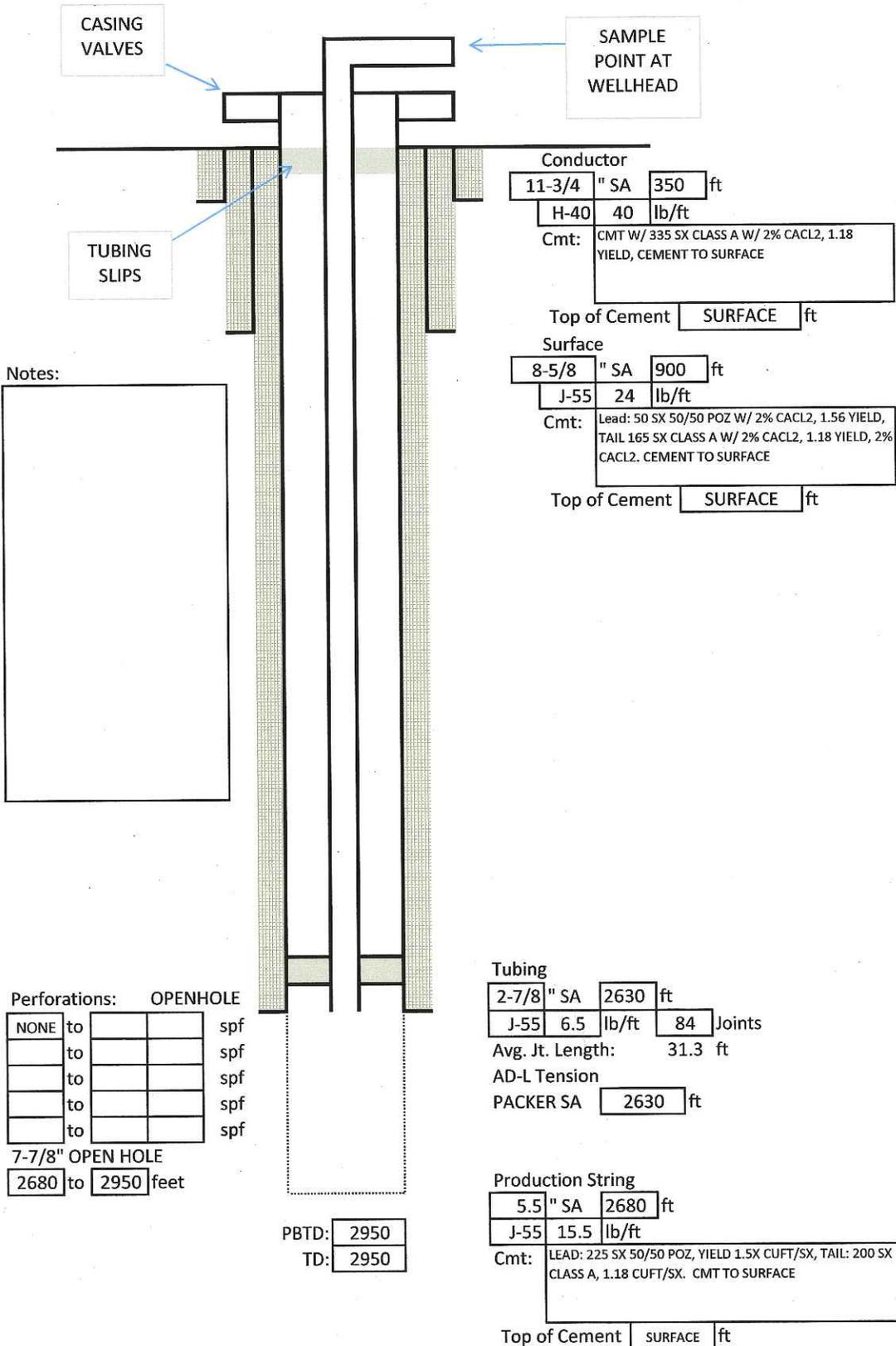
**ATTENTION WELL OWNER: FILE WITH DEED**



**Attachment  
"M"**

### Wellbore Sketch

Well: WEST BAY 22 SWD KB: TBD Permit#: TBD  
 Operator: West Bay Exploration Company GL: TBD  
 Surf. Loc.: NW /Q NE /Q SW /Q Sec. 22 T 4S R 2E

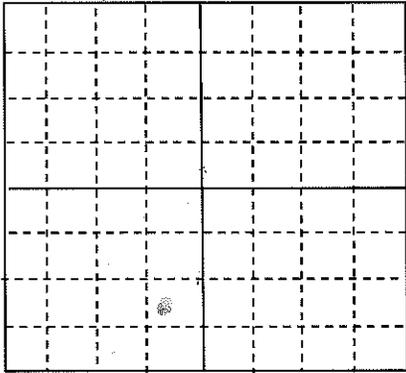


**Attachment  
"Q"**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

**PLUGGING AND ABANDONMENT PLAN**

<b>Name and Address of Facility</b> West Bay 22 SWD	<b>Name and Address of Owner/Operator</b> West Bay Exploration Company 13685 West Bay Shore Drive Suite 200 Traverse City, MI 49684
--	--

Locate Well and Outline Unit on Section Plat - 640 Acres  	State <b>Michigan</b>	County <b>Jackson</b>	Permit Number	Surface Location Description <b>SW 1/4 of NE 1/4 of SE 1/4 of SW 1/4 of Section 22 Township 4S Range 2E</b>  Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location _____ <u>665</u> ft. From (N/S) _____ <u>S</u> Line of Quarter Section And _____ <u>1407</u> ft. From (E/W) _____ <u>W</u> Line of Quarter Section
<b>TYPE OF AUTHORIZATION</b> <input checked="" type="checkbox"/> Individual Permit <input type="checkbox"/> Area Permit <input type="checkbox"/> Rule		<b>WELL ACTIVITY</b> <input type="checkbox"/> Class I <input type="checkbox"/> Hazardous <input type="checkbox"/> Nonhazardous <input checked="" type="checkbox"/> Class II <input checked="" type="checkbox"/> Brine Disposal <input type="checkbox"/> Enhanced Recovery <input type="checkbox"/> Hydrocarbon Storage <input type="checkbox"/> Class III		
Number of Wells _____ <u>1</u>  Lease Name _____ <u>WEST BAY</u>		Well Number _____ <u>22 SWD</u>		

CASING AND TUBING RECORD AFTER PLUGGING					METHOD OF EMPLACEMENT OF CEMENT PLUGS			
SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE				
11-3/4	42	350	350	14-3/4	<input checked="" type="checkbox"/> Balance Method <input type="checkbox"/> Dump Bailer Method <input type="checkbox"/> Two Plug Method <input checked="" type="checkbox"/> Other			
8-5/8	24	900	900	10-3/4				
5-1/2	15.5	2,680	2,680	7-7/8				

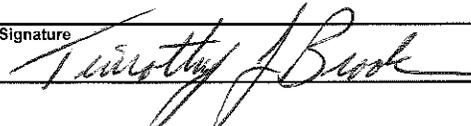
CEMENT TO PLUG AND ABANDON DATA:								
	Plug #1	Plug #2	Plug #3	Plug #4	Plug #5	Plug #6	Plug #7	
Size of Hole or Pipe in Which Plug Will Be Placed (inches)	7/7/8	5	5	5				
Depth to Bottom of Tubing or Drill Pipe (ft)	2,630	2,630	1,000	350				
Sacks of Cement To Be Used (each plug)	83	25	25	40				
Slurry Volume To Be Pumped (cu. Ft.)	98	27	27	47				
Calculated Top of Plug (ft.)	2,630	2430	800	0				
Measured Top of Plug (if tagged, ft.)	2,630	2430	800	0				
Slurry Weight (Lb./Gal.)	15.6	15.6	15.6	15.6				
Type of Cement or Other Material (Class III)	CLASS A	CLASS A	CLASS A	CLASS A				

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)			
From	To	From	To
2,950'	2,680'		
			OPEN HOLE

Estimated Cost to Plug Wells			
RIG	4815	MISC COSTS	2700
CEMENT	6970	CONTING	1055
RETAINER	3000	TOTAL	21300
SITE COST	3000	SEE ATTACHED WORKSHEET	

**CERTIFICATION**

I certify under the penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref.40 CFR 144.32)

Name and Official Title (Please type or print) TIMOTHY J BROCK, AGENT	Signature 	Date Signed 1/24/2011
--	---	--------------------------

ORIGINAL WELL CONSTRUCTION DURING OPERATION	PLUGGING AND ABANDONMENT CONSTRUCTION
<p>Surface</p> <hr/> <p>Top of cement SURFACE</p> <hr/> <p>Surface Casing 11-3/4" @ 350'</p> <hr/> <p>Top of cement SURFACE</p> <hr/> <p>Intermediate Csg. 8-5/8" @ 900'</p> <hr/> <p>Top of Cement SURFACE</p> <hr/> <p>Packer Depth 2,630'</p> <hr/> <p>Long String Csg. 5-1/2" @ 2,680'</p> <hr/> <p>Hole Size 7-7/8"</p> <hr/> <p>* Depth 2,950'</p>	<p>Surface</p> <hr/> <p>Top Plug Interval SEE BELOW</p> <hr/> <p>*USDW Base Plug Interval 350'-0'</p> <hr/> <p>*Intermediate Cut/Rip Point Plug Interval 1,000'-800'</p> <hr/> <p>*Middle Plug Interval 2,630'-2,430'</p> <hr/> <p>*Long String Cut/Rip Point Plug Interval N/A</p> <hr/> <p>Bottom Plug Depth 2,950'-2'630'</p> <hr/> <p>*Mechanical Plug Depth 2,630'</p>
<p>Surface Casing 11-3/4" @ 350'</p> <hr/> <p>USDW Base 226'</p> <hr/> <p>*Intermediate Cut/Rip Depth N/A</p> <hr/> <p>*Intermediate Csg. 8-5/8" @ 900'</p> <hr/> <p>*Long String Csg Cut/Rip Depth N/A</p> <hr/> <p>Long String Csg. 5-1/2" @ 2,680'</p> <hr/> <p>Depth 2,950'</p>	<p>** Add Any Additional Information</p> <p>* May not Apply</p>

**LIST OF ALL OPEN AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED**

Specify Open Hole/ Perforations/ Varied Casing	From	To	Formation Name
OPEN HOLE	2,680	2,950	NIAGARAN

**COST ESTIMATE FOR PLUGGING AND ABANDONMENT**

Permittee:	West Bay Exploration Company
Well Name:	West Bay 22 SWD
EPA Permit Number:	Proposed Well
Party Providing Cost Estimate:	Brock Engineering, LLC
Total Cost Estimate:	\$21,300
Date of Cost Estimate:	1/24/2011

**Plug Locations Required for Proper P&A:**

Plug Identifier*	Plug Top	Plug Bottom	Zone Being Protected (such as USDW, gas, rip point etc.)
Examples: 7" casing shoe 2700'-2600', surface, perforations 2100'-1900			
BELOW RETAINER	2630	2950	INJECTION ZONE
ABOVE RETAINER	2430	2630	BASE OF LONG STRING
ACROSS BASE OF 8-5/8	800	1000	BASE OF INTERMEDIATE CASING
BASE OF USDW TO SURFACE	0	350	BASE OF USDW

Have any intervals/sections of the wellbore been plugged previously? If so, give the location of the plugs, the circumstances that required the plug and how the plug was set.

NO

**Plugging and Abandonment Normal Costs**

**1. Rig Costs**

Travel	1	miles @	175	per mile =	\$175
Labor (Super & Crew)		hrs @		per hour =	
Equipment Costs (Rig cost, drilling package, etc.)	20	hrs @	232	per hour =	\$4,640
Miscellaneous Site Costs (Tubing work string rental, water storage, flow tanks, mud pit, etc.)		hrs @		per hour =	
Well Head Cutting				=	
Cement Tagging		feet @		per foot =	
Pulling Casing/Tubing		hrs @		per hour =	

**2. Cement Costs**

Pump Truck & Operator (Including Set Up)	8	hrs @	340	per hour =	\$2,720
Tank Truck & Operator	8	hrs @	90	per hour =	\$720
Type Cement CLASS A	175	sacks @	10	per sack =	\$1,750
Type Cement		sacks @		per sack =	
Type Cement		sacks @		per sack =	
Cement Retainer(s)	1	retainer(s) @	3000	each =	\$3,000
List Retainers					
Cement Additives (high temperature/pressure)				=	
Balance Plug inc. fluids and testing		plugs @		per plug =	
List Plugs:	MILEAGE AND TRANSPORTATION NOPLACE ELSE TO PUT ON THIS FORM				
Surface Plug inc. fluids and testing				=	\$1,780

3. Wireline Service

Transportation		hrs @		per hour =	
Labor		hrs @		per hour =	
Service Charges				=	
Perf/Squeeze		shots @		per shot =	
Cut/pull Casing		rips @		per rip =	
Cement Retainer(s)		retainer(s) @		each =	
List Retainers					
TOC Log				=	
Depth charge for gage rings, junk basket		feet @		per foot =	
Specialized tools for fluid sampling				=	

4. Site Preparations & Costs

General Site Engineering & Plan Development				=	
Owner/Operator Site Supervisor				=	\$1,700
Backhoe & Operator	4	hrs @	80	per hour =	\$320
Dozer & Operator	3	hrs @	80	per hour =	\$240
Road Construction and Improvement Costs				=	
Pit Liner				=	\$500

5. Transportation & Miscellaneous

Special Land Use Costs (Zoning & Permits)				=	
Winch truck w/driver (wages & mileage)	4	hrs @	100	per hour =	\$400
Water truck w/ driver (wages & mileage)		hrs @		per hour =	
Vacuum Truck w/ driver (wages & mileage)		hrs @		per hour =	
2 axle rig-up truck driver& crew wages & mileage)		hrs @		per hour =	
1 axle truck w/ driver (wages & mileage)		hrs @		per hour =	
Hot oiler (equip, labor & mileage)		hrs @		per hour =	
Welder (equip, labor & mileage)	4	hrs @	75	per hour =	\$300
Packer Fluid per specs		bbl @		per bbl =	
Hydraulic Jacks		hrs @		per hour =	
Bridge Plug				=	
Waste Disposal Costs				=	\$2,000
Tool Rental (Describe; examples: Casing Ripper, Collar Buster, etc.)					
Tool 1					=
Tool 2					=
Tool 3					=

6. Remediation Costs (mostly applicable to shallow wells)

Sample Analysis (fluid or soil)		=	
Soil Removal		=	
Site Assessment Study Costs		=	
System Removal Costs		=	
Disposal System Modification Costs		=	
Installation of Monitoring Well Costs		=	
# Wells:			
Type:			
Depth:			
Construction:			

SUBTOTAL:		=	\$20,245
Contingency:	5.0 %	=	\$1,012
INITIAL TOTAL		=	\$21,257
Inflation factor		=	1.00
TOTAL AMOUNT, Rounded to \$100		=	\$21,300

**Attachment  
"R"**



Copy - orig. in 9/7/05

**BOND FOR CONFORMANCE**

By authority of Part 615, Supervisor of Wells, Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

OIL AND GAS OPERATIONS BOND	
Bond number <u>08784181</u>	
<input type="checkbox"/> Single	<input checked="" type="checkbox"/> Blanket
\$ _____	\$ <u>250,000</u>
Well name and number _____	Attach initial well list

West Bay Exploration Company, 13685 South West Bay Shore, Suite #200, Traverse City, MI 49684

(name and address of Principal)

\_\_\_\_\_ in the State of Michigan as Principal and

Fidelity and Deposit Company of Maryland, PO Box 1227, Baltimore, Maryland 21203

(name and address of Surety)

a corporation organized and existing under the laws of the State of Maryland and duly authorized to transact business in the State of Michigan, as Surety, are held and firmly bound unto the State of Michigan in the penal sum of

Two Hundred Fifty Thousand & No/100 Dollars (\$250,000.00)----- Dollars.

The Principal named is about to commence and prosecute to final completion well(s) and operations authorized by permits issued or to be issued under Part 615, Act 451 PA 1994, as amended.

"Final completion" means the time when locating, drilling, deepening, converting, operating, producing, reworking, plugging, and proper site restoration have been performed on a well in a manner approved by the supervisor, including the filing of the mandatory records, and when the conformance bond has been released.

When the Principal complies with the provisions of the applicable provisions of Part 615, Act 451 PA 1994, as amended, in the final completion of the well(s), the Surety's obligations can be terminated otherwise this obligation remains in full force and effect. The Surety's liability herein is co-extensive with that of the Principal and the State of Michigan has the same remedies against the Surety as against the Principal.

This bond is executed and accepted subject to the following condition: The liability of this bond is set forth in R 324.211, R 324.213, R 324.214, and R 324.215 of the rules promulgated under section 61506 of Part 615, Supervisor of Wells, Act 451 PA 1994, as amended. (See reverse side of bond)

The Surety, by execution of the bond, accepts the liability covered by prior bond(s) Replaces Continental Casualty Bond #265000022

(number(s) and company)

and gives notice to the Supervisor of Wells of the need for terminating the prior bond(s) as listed herein with such termination to be effective as of the time that this bond becomes effective.

Signed, sealed and dated the 16th day of September, 2005

West Bay Exploration Company  
(Principal)

Fidelity and Deposit Company of Maryland  
(Surety)

By \_\_\_\_\_  
(Signature)

By Brigitte Burgess  
(Signature)

**Gary L. Gottschalk, Vice-President**

**Brigitte Burgess  
Attorney-In-Fact**

(Name and title)

(Name and title)

When the Principal or Surety executes this bond by an agent, power of attorney or other evidence of authority must accompany the bond.

DEQ USE ONLY		
Permit number	Issue date	
Type of well	Current true vertical depth	Purpose of bond

MAIL TO:  
OFFICE OF GEOLOGICAL SURVEY  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256  
LANSING, MI 48909-7756

Excerpts from General Rules governing oil and gas operations (effective 9/20/96)

**R 324.211 Liability on conformance bond.**

*Rule 211.*

(1) The liability on the conformance bond is conditioned upon compliance with the act, these rules, permit conditions, instructions, or orders of the supervisor. Subject to the provisions in R 324.213, liability shall cover all operations of the permittee as follows:

- (a) Through transfer of the permit for the subject well pursuant to R 324.206(6).
- (b) Through final completion approved by the supervisor of the subject well.
- (c) Otherwise as approved by the supervisor.

(2) The supervisor shall look to the conformance bond for immediate compliance with, and fulfillment of, the full conditions of the act, these rules, permit conditions, instructions, or orders of the supervisor. All expenses incurred by the supervisor in achievement of compliance with, and fulfillment of, all conditions of the act, these rules, permit conditions, instructions, or orders of the supervisor shall be paid by the permittee or the surety or from cash or securities on deposit. The claim shall be paid within 30 days of notification to the permittee or surety that expenses have been incurred by the supervisor. If the claim is not paid within 30 days, the supervisor, acting for and on behalf of the state, may bring suit for the payment of the claim.

**R 324.212 Conformance bond amounts.**

*Rule 212.*

A person who drills or operates a well shall file a conformance bond with the supervisor for the following amounts, as applicable:

(a) Single well conformance bonds shall be filed in the following amounts, as applicable:

- (i) \$10,000.00 for wells up to and including 2,000 feet deep; true vertical depth.
- (ii) \$20,000.00 for wells deeper than 2,000 feet, but not deeper than 4,000 feet, true vertical depth.
- (iii) \$25,000.00 for wells deeper than 4,000 feet, but not deeper than 7,500 feet, true vertical depth.
- (iv) \$30,000.00 for wells deeper than 7,500 feet, true vertical depth.

(b) A person may file single well conformance bonds in an amount equal to 1/2 of the amount specified in subdivision (a) of this rule for wells where well completion operations have not commenced. A person may not file single well conformance bonds under this subdivision for more than 5 wells. A person shall file single well conformance bonds in the full amount specified in subdivision (a) of this rule or file a blanket conformance bond as specified in subdivision (c) of this rule or submit a statement of financial responsibility pursuant to R 324.210 before the commencement of well completion operations on any well.

(c) Blanket conformance bonds may be filed as an alternative to single well conformance bonds. If a blanket conformance bond is utilized, then the permittee shall provide the supervisor with a list of wells covered by the blanket conformance bond. A maximum of 100 wells may be covered by a blanket conformance bond. If the permittee has more than 100 wells in a category, then the additional wells may be covered by single well conformance bonds or additional blanket conformance bonds. Blanket conformance bonds shall be filed in the following amounts, as applicable:

- (i) \$100,000.00 for wells up to and including 2,000 feet deep, true vertical depth.
- (ii) \$200,000.00 for wells deeper than 2,000 feet, but not deeper than 4,000 feet, true vertical depth.
- (iii) \$250,000.00 for wells deeper than 4,000 feet, true vertical depth.

(d) A person shall not be required to file a blanket conformance bond or bonds in an aggregate amount of more than \$250,000.00. When the aggregate amount of the conformance bonds is \$250,000.00, the permittee may file 1 blanket conformance bond of \$250,000.00 to cover all of his or her wells.

**R 324.213 Cancellation of conformance bonds issued by a surety.**

*Rule 213.*

(1) A surety company may cancel a conformance bond acquired pursuant to these rules upon 90 days' notice to the supervisor of the effective date of cancellation. However, the surety company shall retain liability for all violations of the act, these rules, permit conditions, instructions, or orders of the supervisor that occurred during the time the conformance bond was in effect.

(2) Forty days before the effective date of cancellation, as provided in subrule (1) of this rule, a permittee shall secure a conformance bond from another surety company authorized to do business in the state of Michigan, deposit cash or other securities, or bring the well to final completion. Failure to comply with this subrule shall be cause for the immediate suspension of any or all components of the operations on the well.

(3) A surety company shall remain liable until the violations have been corrected and the corrections are accepted by the supervisor for all violations of the act, these rules, permit conditions, instructions, or orders of the supervisor that occurred at the well during the time the conformance bond was in effect before the effective date of cancellation.

**R 324.214 Limitation of additional liability of blanket conformance bonds.**

*Rule 214.*

A surety company may refuse to accept liability for additional wells under a blanket conformance bond by giving 10 days' notice by registered mail to the supervisor. Subject to the provisions of R 324.213, the blanket conformance bond shall continue in full force and effect as to all other wells covered by the blanket conformance bond for which permits were granted or transferred to the permittee before the effective date of the notice.

**R 324.215 Release of conformance bonds; release of well from blanket conformance bond.**

*Rule 215.*

(1) A conformance bond shall be released or a well shall be released from a blanket conformance bond, subject to the provisions of R 324.213, by the supervisor or authorized representative of the supervisor if a permittee disposes of the well and the permit for the well has been transferred to a new person pursuant to R 324.206(6) or if the well has been plugged and proper site restoration has been performed pursuant to R 324.1003, including the filing of the mandatory records.

(2) The release of the conformance bond or the release of a well from a blanket conformance bond does not release a permittee from liability for any violations of the act, these rules, permit conditions, instructions, or orders of the supervisor which occurred during the time the conformance bond was in effect and which have not been corrected and accepted by the supervisor.

(3) A conformance bond filed to comply with a permit that has become terminated shall be released if there is final completion.

**Power of Attorney  
FIDELITY AND DEPOSIT COMPANY OF MARYLAND  
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY**

KNOW ALL MEN BY THESE PRESENTS: That the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, and the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, corporations of the State of Maryland, by THEODORE G. MARTINEZ, Vice President, and ERIC D. BARNES, Assistant Secretary, in pursuance of authority granted by Article VI, Section 2, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, does hereby nominate, constitute and appoint Diane KERN, Janet L. JENKINS, Stuart F. DESELMS, William A. GRANT, Jeffrey W. HOLMES, Brigitte BURGESS and Michelle RICHIE, all of Tulsa, Oklahoma, EACH as true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed, any and all bonds and undertakings, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in Baltimore, Md., in their own proper persons. This power of attorney revokes that issued on behalf of Diane KERN, Carol OSBORNE, Janet L. JENKINS, Stuart F. DESELMS, William A. GRANT, Jeffrey W. HOLMES, Brigitte BURGESS, Colleen THAYER, Christy THOMPSON, dated May 30, 2003.

The said Assistant Secretary does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article VI, Section 2, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President and Assistant Secretary have hereunto subscribed their names and affixed the Corporate Seals of the said FIDELITY AND DEPOSIT COMPANY OF MARYLAND, and the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, this 11th day of January, A.D. 2005.

ATTEST:

**FIDELITY AND DEPOSIT COMPANY OF MARYLAND  
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY**



*Eric D. Barnes*

Eric D. Barnes Assistant Secretary

*Theodore G. Martinez*

By: Theodore G. Martinez

State of Maryland }  
City of Baltimore } ss:

On this 11th day of January, A.D. 2005, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, came THEODORE G. MARTINEZ, Vice President, and ERIC D. BARNES, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, and the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and they each acknowledged the execution of the same, and being by me duly sworn, severally and each for himself depose and saith, that they are the said officers of the Companies aforesaid, and that the seals affixed to the preceding instrument is the Corporate Seals of said Companies, and that the said Corporate Seals and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

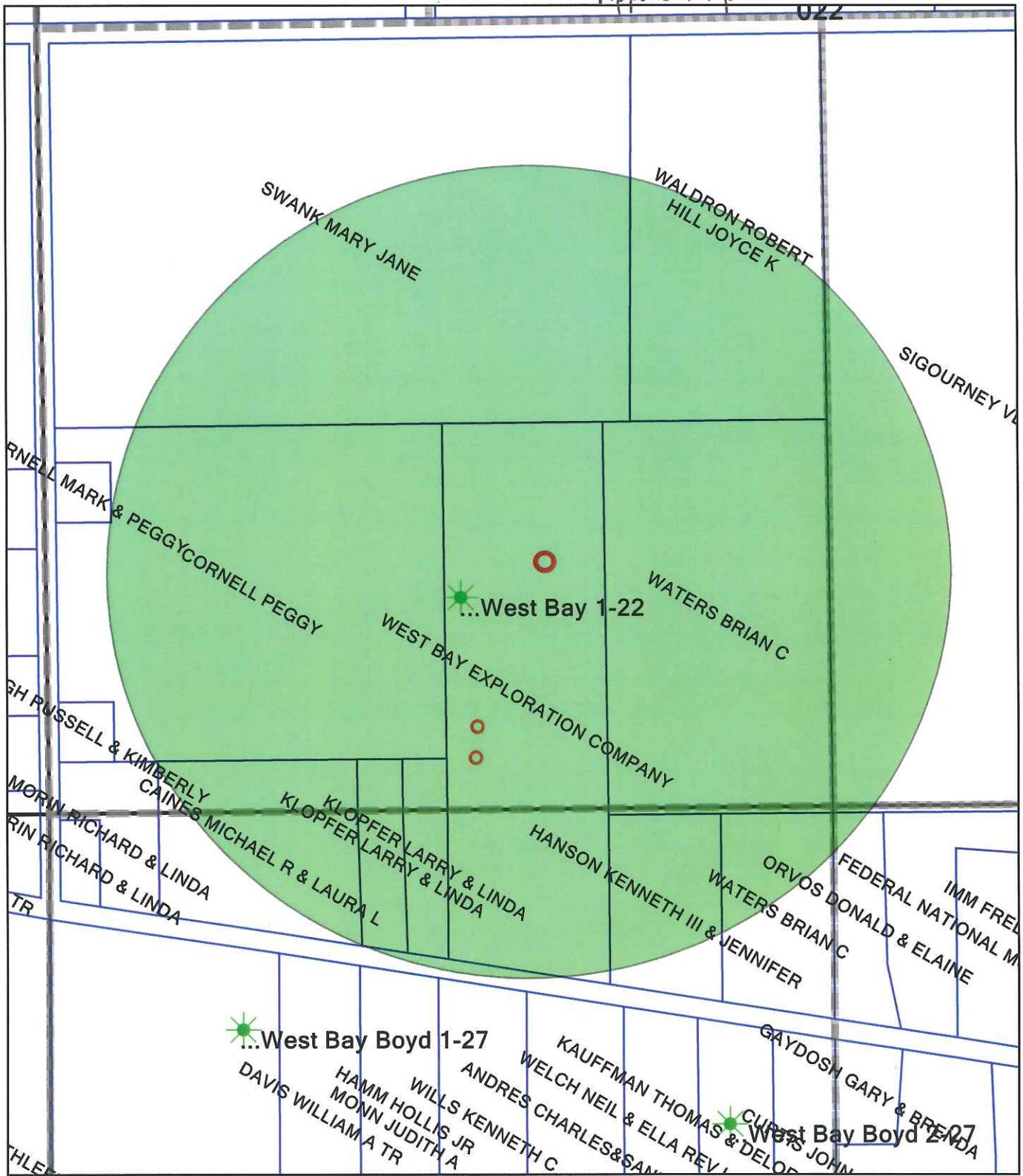
IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.



*Constance A. Dunn*

Constance A. Dunn Notary Public  
My Commission Expires: July 14, 2007

**Appendix  
"1"**



West Bay Exploration Company		
SWD 1/4 Mile Area of review		
January 25, 2011	16:25:23	
link map 9-14-10.gm		KWaterson

¼ mile area of review owners

Larry and Linda Klopfer  
12160 Ladd Rd  
Brooklyn, MI 49230

Michael and Laura Caines  
12148 Ladd Rd  
Brooklyn, MI 49230

Peggy Cornell  
10875 Bettis Rd  
Brooklyn, MI 49230

Robert Waldron and Joyce Hill  
12767 Waterman Rd  
Brooklyn, MI 49230

Brian Waters  
20310 Schwab  
Brooklyn, MI 49230

Mary Jane Swank  
12101 Waterman  
Brooklyn, MI 49230

West Bay Exploration Company  
13685 S West Bay Shore, Suite 200  
Traverse City, MI 49684

Kenneth and Jennifer Hanson  
12190 Ladd Rd  
Brooklyn, MI 49230

Donald and Elaine Orvos  
12536 Ladd Rd  
Brooklyn, MI 49230

**Appendix  
"2"**

# West Bay Exploration company

13685 S. West Bay Shore / Suite 200  
Traverse City, MI 49684  
231-946-0200 / Fax: 231-946-8180

5555 N. Hogback Road  
Fowlerville, MI 48836  
517-223-4011 / Fax: 517-223-4020

April 18, 2011

Mr. Brian Conway  
State Historic Preservation Officer  
State Historic Preservation Office  
Michigan Historical Center  
702 West Kalamazoo Street  
P.O. Box 30740  
Lansing, MI 48909-8240

**Re: National Historic Register Request**  
New Underground Injection Well Location:  
Well Name: West Bay 22 SWD  
T4S, R2E, Sec. 22, NW¼; NE¼, SW¼ (655' SL, 1,407' WL)  
(Jackson County)

Dear Mr. Conway:

In order to apply for a United States Environmental Protection Agency (USEPA) permit for an underground injection well, the USEPA regulations require a determination that the injection well will not impact any properties listed or eligible for listing in the National Register of Historic Places. The well is/will be located as shown on the enclosed attachment. Please review this well location to make a determination in this matter. Please contact our office in writing with your determination so that we may forward the information to the USEPA.

Should you have any questions or requires any additional information regarding this location, please feel free to call me at (231) 946-0200.

Sincerely yours,



Ann Baker

Enclosure

**Appendix  
"4"**

**RECORD OF WELL DRILLING OR DEEPENING**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number  
59996

(Submit 3 copies within 60 days of drilling completion.)

 Part 615 Oil/Gas Well  Part 625 Mineral Well

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Suite 200 Traverse City Mi. 49684		API number 21-075-59996	
Name and address of drilling contractor Advanced Enerav Services P.O. Box 85 South Boardman Mi. 49680		Well name and number West Bay #1-22	
Date drilling began 01/11/2010		Surface location NW 1/4 of SE 1/4 of SW 1/4 Section 22 T4S R2E	
Date drilling completed 01/27/2010		Township Norvell	
Total depth of well Driller 4370' Log 4369'		County Jackson	
Formation at total depth Black River		Footages North/South East/West 567' ft. from N line and 575' ft. from E line of sec.	
Elevations K.B. 1028.24 ft. R.F. ft. R.T. 1027 ft. Grd 1015.27 ft		Directionally drilled (check one) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		Previous permit numbers	
		Subsurface location (if directionally drilled) 1/4 of 1/4 of 1/4 Section T R	
		Township County	
		Footages North/South East/West ft. from line and ft. from line of sec.	
		Feet drilled - cable tools from to	
		Feet drilled - rotary tools from surf to 4370'	

Casing, Casing Liners and Cementing, Operating Strings					Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)				
Size	Where set	Cement	T.O.C.	Ft. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4"	419'	150 lite/150 A	surface		Niagaran		x	2920	partial
8 5/8"	3112'	600 lite/200 A	surface						
5 1/2"	4151'	80 Halcem	1998'						
		300 Halcem							

Gross Pay Intervals				All Other Oil and Gas Shows Observed or Logged							
Formation	Oil or Gas	From	To	Where Observed (X)							
Formation	Oil or Gas	Depth	Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up			
Trenton/Black River	both	3966'	4290'								

Depth Correction		Deviation Survey			Plugged Back		
Depth	Correction	Run at	Degrees	Yes	No	Operation	Depth

Geophysical / Mechanical Logs (list each type run)		
Brand	Log types	Logged intervals
Baker Atlas	CDL/CNL/GR	TD-Surf
	DLL/MLL/GR	TD-Min

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date 02/15/2010	Name and title (print) Timothy L. Baker	Signature 
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Submit to: OFFICE OF GEOLOGICAL SURVEY,  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256, LANSING, MI 48909-7756





MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - OFFICE OF GEOLOGICAL SURVEY

**RECORD OF WELL DRILLING OR DEEPENING**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number  
60010

(Submit 3 copies within 60 days of drilling completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Suite 200 Traverse City Mi. 49684		API number 21-075-60010	
Name and address of drilling contractor Advanced Enerav Services P.O. Box 85 South Boardman Mi. 49680		Well name and number West Bay & Boyd #1-27	
Date drilling began 01/30/2010		Surface location SW 1/4 of SE 1/4 of SW 1/4 Section 22 T4S R2E	
Date drilling completed 02/14/2010		Township Norvell	
Total depth of well Driller 4495 Log 4490		County Jackson	
Formation at total depth Black River		Footages North/South East/West 271' ft. from S line and 1440' ft. from W line of sec.	
Elevations K.B. 1043 ft. R.F. ft. R.T. 1042 ft. Grd 1029 ft		Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
		Previous permit numbers	
		Subsurface location (if directionally drilled) NW 1/4 of NW 1/4 of NW 1/4 Section 27 T 4S R 2E	
		Township Norvell	
		County Jackson	
		Footages North/South East/West 679' ft. from N line and 661' ft. from W line of sec.	
		Feet drilled - cable tools from to	
		Feet drilled - rotary tools from surf to TD	

Casing, Casing Liners and Cementing, Operating Strings					Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)				
Size	Where set	Cement	T.O.C.	Ft. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4"	426'	150 lite/150 A	surface		Niagaran		x	3220	Partial
8 5/8"	3333'	650 lite/200 A	surface		Trenton/Black River		x	4267	Full
5 1/2"	4151'	80 Halcem	2580'						
		250 Halcem							

Gross Pay Intervals				All Other Oil and Gas Shows Observed or Logged								
Formation	Oil or Gas	From	To	Formation	Oil or Gas	Depth	Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
Trenton/Black River	both	4273'	TD									

Depth Correction		Deviation Survey		Plugged Back		
Depth	Correction	Run at	Degrees	Yes	No	Depth
see	attached	directional				

Geophysical / Mechanical Logs (list each type run)		
Brand	Log types	Logged intervals
Baker Atlas	CNL/GR/CCL (Unable to run open hole)	4487'-Surf
	SBT/GR/CCL	4487'-2100'

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date 02/19/2010	Name and title (print) Timothy L. Baker	Signature 
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Submit to: OFFICE OF GEOLOGICAL SURVEY,  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256, LANSING, MI 48909-7756



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - OFFICE OF GEOLOGICAL SURVEY

**RECORD OF WELL COMPLETION**

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

(Submit 3 copies within 60 days of well completion.)  
 Part 615 Oil/Gas Well     Part 625 Mineral Well

Permit number/deepening permit no. 60010	API number 21-075-60010-00-00
Type of well (after completion) Oil & Gas	
Well name & number West Bay Boyd 1-27	

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Dr #200 Traverse City, MI 49684			
Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Previous permit numbers	Total depth of well M.D. _____ T.V.D. _____	
Surface location SW ¼ of SE ¼ of SW ¼ Section 27 T 4S R 2E		Subsurface location (if directionally drilled) NW ¼ of NW ¼ of NW ¼ Section 27 T 4S R 2E	
Township Norvell	County Jackson	Township Norvell	County Jackson
Footages: North/South _____ East/West _____ 271 Ft. from South line and 1440 Ft. from West line of Sec.		Footages: North/South _____ East/West _____ 600 Ft. from North line and 660 Ft. from West line of Sec.	
Date well completed 2/20/10	Producing formation(s) Black River	Injection formation(s)	Part 615 - oil/gas wells
		Date of first injection	Part 625 - mineral wells
		Disposal formation(s)	Solution formation(s)

**COMPLETION INTERVALS(S)**

Date	Number holes	Perforation or open hole interval	Open	
			Yes	No
2/19/2010	Open Hole	O.H. 4495-4525	X	

**STIMULATION BY ACID OR FRACTURING**

Date	Interval treated	Materials and amount used
2/20/2010	4495-4525	5000 gal 28% Hcl Acid

**PRODUCTION TEST DATA**

Oil Bbls/day	Gravity °API	Condensate Bbls/day	Gas MCF/day	Water Bbls/day	H <sub>2</sub> S Grains/100 ft <sup>3</sup>	B.H.P. and depth
200	47		95	0	0	TBD

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (print or type) Timothy L. Baker Operations Manager	Signature 	Date 2-23-10
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Submit to: OFFICE OF GEOLOGICAL SURVEY  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30256  
LANSING MI 48909-7756



**RECORD OF WELL DRILLING OR DEEPENING**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number  
60011

(Submit 3 copies within 60 days of drilling completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Suite 200 Traverse City Mi. 49684		API number 21-075-60011	
Name and address of drilling contractor Advanced Energv Services P.O. Box 85 South Boardman Mi. 49680		Well name and number West Bay & Boyd #2-27	
Date drilling began 02/15/2010	Date drilling completed 03/03/2010	Surface location SW 1/4 of SE 1/4 of SW 1/4 Section 22 T4S R2E	
Total depth of well Driller 4845 Log 4846	Formation at total depth Black River	Township Norvell	
Elevations K.B. 1042.6 ft. R.F. ft. R.T. 1041 ft. Grd 1029.2 ft		County Jackson	
		Footages North/South East/West 186' ft. from S line and 1440' ft. from W line of sec.	
		Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
		Previous permit numbers	
		Subsurface location (if directionally drilled) SE 1/4 of NE 1/4 of NW 1/4 Section 27 T 4S R 2E	
		Township Norvell	
		County Jackson	
		Footages North/South East/West 963' ft. from N line and 2264' ft. from W line of sec.	
		Feet drilled - cable tools from to	
		Feet drilled - rotary tools from surf to TD	

Casing, Casing Liners and Cementing, Operating Strings					Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)				
Size	Where set	Cement	T.O.C.	Ft. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4"	424'	150 lite/150 A	surface		Niagaran		x	3300	Partial
8 5/8"	3417'	650 lite/200 A	surface						
5 1/2"	4842'	75 Halcem	3300"						
		150 Halcem							

Gross Pay Intervals				All Other Oil and Gas Shows Observed or Logged								
Formation	Oil or Gas	From	To	Where Observed (X)								
Formation	Oil or Gas	Depth	Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up				
Black River	both	4510'	4590'									

Depth Correction		Deviation Survey		Plugged Back		
Depth	Correction	Run at	Degrees	Yes	No	Depth
see	attached	directional				

Geophysical / Mechanical Logs (list each type run)		
Brand	Log types	Logged intervals
Baker Atlas	CNL/ZDL/GR	4846'-Surf
	DLL/MLL/GR	4846'-3417

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date 06/20/2010	Name and title (print) Timothy L. Baker	Signature 
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Submit to: OFFICE OF GEOLOGICAL SURVEY,  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256, LANSING, MI 48909-7756

# FORMATION LOG

Attach additional sheets if necessary

API number

Permit number/Deepening number

60011

Elevation used

Geologist name

Tops taken from

1043

Fowler/Baker/Vancyce

Driller's log

Sample log

Electric log

From	To	Formation (type, color, hardness)	From	To	Formation (type, color, hardness)
<p>Note: if well directionally drilled, add true vertical depth formation tops where appropriate</p>					
surf	222(log)	Drift- Unconsolidated sand and gravel			
222	290	Shale& Siltstone- brn-gy-Grn, silty at top organic at base			
290	1230	Shale-Coldwater- Md-dk Brn-Blk, Silty, incr organic at base			
1230	1370	Sunbury Sh/Berea siltstone-Sh, Md Brn-Blk Silty, pyr. mixed w/siltstone, SSO-Lt md brn, Arg			
1370	15	Antrim-Dk Brn-Blk, Pyrand incr organic at base, SG incr toward base			
1554	1622	Traverse Fm- Limestone, Dk Brn-md Brn, Dns, Pyr, Dolomite, Md Gy-Gy, Dns			
1622	1744	Traverse Limestone-Md Brn-lt Brn Vfxln, Hd,			
1744	1978	Shale intbd w Dolomite and Lmst, Md Brn-Gy, Vfxln, Dns, Pos Dundee@1728'-Brn-Lt brn, Poor Samp, Pos Cvgs			
1978	2200	Detroit River- Anhydrite and Dolomite/Limestone, Lt-Md Brn Dns, Vfxln in pt, NS			
2200	2416	Bass Island/Bois Blanc- Dolomite, Anhydrite & Limestone AA			
2416	2685	G-Unit-Dolomite-Arg, Hd grading to Anhydrite- Lt-md Gy Brn			
2685	2766	C Shale-Gy-rdBrn, W/Dolomite and Anhydrite, Lt gy-Brn-bf Poor Samp. I			
2766	2972	B Evap-Anhydrite Wh-Lt Gy W/Dolomite-Vfxln, Lt-md Gy, Intbd at base with Anhy. AA	if well was cored, attach core description		
2972	3160	Dolo & Lmst-Wh-lt Gy, Dns, Anhydritic @3110-Wh, Dns	DRILL STEM TEST DATA		
3160	3386	Niagaran-Dolomite, AA, Md Gy, Vfxln Intbd W/Anhydrite AA, V porous 2880'-3300'			
3386	3884	Clinton/Cinn-Dolomite, Arg, hd, dk gy, grd to lt gy intbd w/Lmst, lt-md gy Dns			
3884	4212	Utica- Shale, Gy-Grn, Gummy-Hd			
4212	4526	Trenton-Dolo, Lt -Md Gy, Dns, W/ Lmst @ 4236'-4526' Lt-Md Gy Brn, Vfxln,			
4526	TD	Black River- Dolomite, Md Brn-GyBrn, SO&G@4590'			



Directional Drilling Contractors, LLC.

Job Number: DR100040  
 Company: WEST BAY EXPLORATION  
 Lease/Well: WEST BAY/ BOYD 2-27  
 Location: NORVELL TWP., JACKSON CO.  
 Rig Name: ADVANCED # 2  
 RKB:  
 G.L. or M.S.L.:

State/Country: MICHIGAN / USA  
 Declination: 6.33 DEGREES WEST  
 Grid:  
 File name: C:\WINSERVE\ASDRIL-1\2010\BOYD227.SVY  
 Date/Time: 04-Mar-10 / 10:03  
 Curve Name: WESTBAY/BOYD 2-27 ( as drilled )

Directional Drilling Contractors  
 SURVEY REPORT

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane 144.40  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
<b>KOP @ 484 MD</b>									
484.00	.00	.00	484.00	.00	.00	.00	.00	.00	.00
486.00	.70	169.10	486.00	-.01	.00	.01	.01	169.05	35.00
516.00	1.80	164.20	515.99	-.65	.17	.62	.67	165.64	3.68
546.00	3.20	162.10	545.96	-1.90	.55	1.86	1.97	163.79	4.68
576.00	4.70	161.00	575.89	-3.85	1.21	3.84	4.04	162.59	5.01
606.00	6.10	159.30	605.76	-6.51	2.17	6.56	6.86	161.54	4.70
636.00	7.70	157.80	635.54	-9.86	3.49	10.05	10.46	160.48	5.37
667.00	9.10	156.80	666.21	-14.04	5.25	14.47	14.98	159.51	4.54
697.00	10.70	157.80	695.76	-18.80	7.23	19.49	20.14	158.95	5.36
728.00	12.80	157.80	726.11	-24.64	9.62	25.63	26.45	158.68	6.77
757.00	14.90	157.80	754.26	-31.07	12.24	32.39	33.39	158.50	7.24
788.00	17.30	157.50	784.04	-39.02	15.51	40.75	41.99	158.32	7.75
818.00	19.80	156.10	812.48	-47.78	19.28	50.08	51.53	158.03	8.46
848.00	22.10	154.30	840.50	-57.52	23.78	60.61	62.24	157.53	7.96
878.00	24.20	152.90	868.08	-68.08	29.03	72.25	74.01	156.90	7.24
907.00	26.50	151.50	894.29	-79.06	34.83	84.55	86.39	156.22	8.20
937.00	28.90	150.10	920.85	-91.22	41.64	98.41	100.28	155.47	8.29
968.00	31.00	148.00	947.71	-104.49	49.60	113.84	115.67	154.61	7.57
1008.00	31.60	144.80	981.89	-121.79	61.10	134.60	136.26	153.36	4.42
1038.00	31.70	142.70	1007.43	-134.48	70.41	150.34	151.80	152.37	3.69
1068.00	31.70	141.70	1032.95	-146.94	80.07	166.09	167.34	151.41	1.75
1097.00	31.90	141.70	1057.60	-158.93	89.54	181.35	182.42	150.60	.69
1126.00	32.20	142.00	1082.18	-171.03	99.05	196.73	197.64	149.92	1.17

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1156.00	32.10	141.70	1107.58	-183.59	108.91	212.67	213.46	149.32	.63
1177.00	32.30	142.00	1125.35	-192.39	115.82	223.85	224.56	148.95	1.22
1207.00	32.40	142.00	1150.69	-205.04	125.71	239.89	240.50	148.49	.33
1237.00	32.70	141.70	1175.98	-217.73	135.68	256.02	256.54	148.07	1.14
1267.00	33.00	142.00	1201.18	-230.53	145.73	272.27	272.73	147.70	1.14
1297.00	32.60	141.70	1226.40	-243.31	155.77	288.51	288.90	147.37	1.44
1327.00	32.10	141.30	1251.74	-255.87	165.76	304.54	304.87	147.06	1.81
1356.00	32.40	141.30	1276.27	-267.95	175.44	319.99	320.27	146.79	1.03
1385.00	32.40	141.70	1300.75	-280.11	185.11	335.51	335.75	146.54	.74
1415.00	31.80	141.70	1326.17	-292.62	194.99	351.44	351.63	146.32	2.00
1446.00	31.80	141.70	1352.51	-305.44	205.11	367.75	367.92	146.12	.00
1476.00	30.90	140.60	1378.13	-317.60	214.90	383.34	383.47	145.92	3.56
1506.00	30.20	140.60	1403.97	-329.38	224.58	398.55	398.66	145.71	2.33
1536.00	30.20	142.00	1429.90	-341.15	234.02	413.62	413.70	145.55	2.35
1566.00	30.40	143.10	1455.80	-353.17	243.22	428.75	428.82	145.45	1.97
1596.00	30.80	143.10	1481.62	-365.38	252.39	444.01	444.08	145.37	1.33
1626.00	31.00	143.40	1507.36	-377.73	261.61	459.42	459.47	145.29	.84
1656.00	31.70	143.40	1532.98	-390.26	270.91	475.02	475.07	145.23	2.33
1688.00	31.90	143.10	1560.18	-403.77	281.00	491.88	491.93	145.16	.80
1719.00	32.30	142.40	1586.44	-416.88	290.97	508.35	508.38	145.09	1.76
1750.00	32.30	142.40	1612.65	-430.00	301.08	524.90	524.93	145.00	.00
1782.00	32.40	142.40	1639.68	-443.57	311.53	542.01	542.04	144.92	.31
1813.00	32.20	142.40	1665.88	-456.70	321.63	558.57	558.59	144.84	.65
1845.00	32.40	141.70	1692.93	-470.18	332.15	575.65	575.67	144.76	1.33
1876.00	33.10	141.30	1719.00	-483.30	342.59	592.40	592.41	144.67	2.36
1908.00	33.40	141.00	1745.76	-496.97	353.60	609.92	609.92	144.57	1.07
1939.00	33.10	142.00	1771.69	-510.27	364.18	626.89	626.90	144.48	2.02
1970.00	32.60	143.10	1797.73	-523.62	374.40	643.70	643.70	144.43	2.51
2001.00	32.60	143.10	1823.85	-536.97	384.43	660.40	660.40	144.40	.00
2031.00	32.60	143.40	1849.12	-549.92	394.10	676.56	676.56	144.37	.54
2064.00	32.90	144.80	1876.88	-564.38	404.57	694.41	694.41	144.37	2.47
2096.00	33.20	144.80	1903.70	-578.64	414.63	711.86	711.86	144.38	.94
2127.00	33.40	144.80	1929.61	-592.55	424.44	728.88	728.88	144.39	.65
2158.00	33.70	144.10	1955.44	-606.49	434.40	746.01	746.01	144.39	1.58
2189.00	34.00	144.10	1981.19	-620.48	444.52	763.28	763.28	144.38	.97
2221.00	33.30	143.80	2007.83	-634.81	454.96	781.01	781.01	144.37	2.25
2252.00	32.30	143.10	2033.88	-648.31	464.96	797.80	797.80	144.35	3.45
2285.00	32.20	143.10	2061.79	-662.39	475.53	815.41	815.41	144.33	.30
2317.00	32.50	143.10	2088.83	-676.08	485.81	832.52	832.53	144.30	.94
2348.00	32.40	143.40	2114.99	-689.41	495.76	849.15	849.16	144.28	.61
2379.00	32.40	144.10	2141.16	-702.80	505.59	865.76	865.77	144.27	1.21
2411.00	32.10	145.90	2168.22	-716.79	515.38	882.84	882.84	144.28	3.14
2442.00	31.80	146.20	2194.53	-730.40	524.54	899.23	899.23	144.32	1.09
2474.00	31.20	145.20	2221.81	-744.21	533.96	915.95	915.95	144.34	2.49
2506.00	31.60	144.80	2249.13	-757.87	543.53	932.62	932.62	144.35	1.41

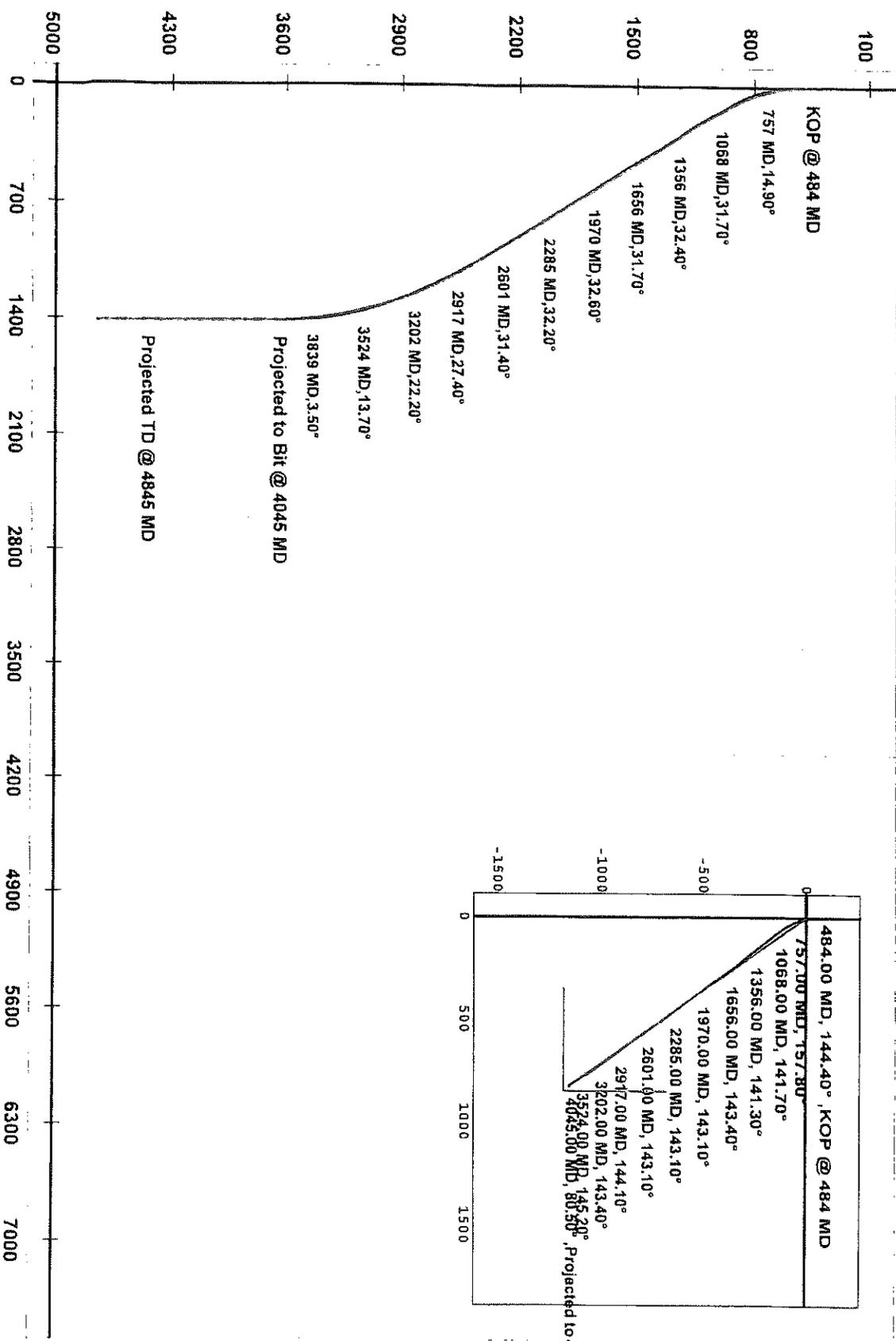
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2538.00	31.50	144.10	2276.40	-771.49	553.26	949.36	949.36	144.35	1.19
2569.00	31.40	143.40	2302.84	-784.53	562.82	965.54	965.54	144.34	1.22
2601.00	31.40	143.10	2330.16	-797.89	572.80	982.21	982.21	144.33	.49
2632.00	31.70	144.10	2356.57	-810.95	582.42	998.42	998.43	144.31	1.95
2664.00	31.60	144.10	2383.81	-824.55	592.27	1015.22	1015.22	144.31	.31
2696.00	31.20	143.80	2411.13	-838.03	602.08	1031.89	1031.89	144.30	1.34
2727.00	30.90	143.80	2437.69	-850.93	611.52	1047.88	1047.88	144.30	.97
2759.00	30.60	143.80	2465.19	-864.13	621.19	1064.24	1064.24	144.29	.94
2791.00	30.30	143.40	2492.77	-877.19	630.81	1080.45	1080.45	144.28	1.13
2823.00	29.60	142.40	2520.50	-889.93	640.45	1096.42	1096.42	144.26	2.69
2855.00	28.70	143.10	2548.45	-902.34	649.88	1112.00	1112.01	144.24	3.01
2886.00	27.90	143.40	2575.74	-914.11	658.68	1126.70	1126.70	144.22	2.62
2917.00	27.40	144.10	2603.20	-925.71	667.18	1141.08	1141.09	144.22	1.92
2949.00	27.20	144.50	2631.64	-937.63	675.75	1155.76	1155.76	144.22	.85
<b>TOP NIAGRINE</b>									
2972.00	26.34	144.22	2652.17	-946.05	681.78	1166.12	1166.12	144.22	3.79
2981.00	26.00	144.10	2660.25	-949.27	684.11	1170.08	1170.09	144.22	3.79
3013.00	25.60	143.40	2689.06	-960.50	692.34	1184.01	1184.02	144.22	1.57
3044.00	25.10	143.40	2717.08	-971.15	700.26	1197.28	1197.29	144.21	1.61
3075.00	25.00	143.40	2745.16	-981.69	708.08	1210.40	1210.41	144.20	.32
3107.00	24.90	143.80	2774.17	-992.56	716.09	1223.90	1223.91	144.19	.61
3139.00	24.30	143.10	2803.27	-1003.26	724.02	1237.22	1237.23	144.18	2.08
3171.00	23.00	143.10	2832.58	-1013.52	731.73	1250.05	1250.06	144.17	4.06
3202.00	22.20	143.40	2861.20	-1023.07	738.86	1261.96	1261.98	144.16	2.61
3233.00	21.70	144.50	2889.95	-1032.44	745.68	1273.55	1273.56	144.16	2.09
3264.00	20.80	145.50	2918.84	-1041.64	752.13	1284.79	1284.80	144.17	3.13
3296.00	20.20	146.60	2948.82	-1050.93	758.38	1295.99	1296.00	144.18	2.23
3327.00	19.40	147.70	2977.99	-1059.75	764.08	1306.48	1306.48	144.21	2.85
3358.00	18.80	148.40	3007.28	-1068.36	769.45	1316.60	1316.60	144.24	2.07
3368.00	18.80	148.40	3016.74	-1071.10	771.14	1319.81	1319.82	144.25	.00
3430.00	17.50	149.10	3075.66	-1087.61	781.16	1339.07	1339.07	144.31	2.13
3460.00	16.30	148.40	3104.36	-1095.07	785.68	1347.77	1347.77	144.34	4.06
3492.00	15.10	146.60	3135.17	-1102.37	790.33	1356.41	1356.41	144.36	4.05
3524.00	13.70	145.20	3166.16	-1108.97	794.79	1364.37	1364.37	144.37	4.51
3556.00	12.70	144.10	3197.32	-1114.93	799.01	1371.67	1371.67	144.37	3.22
3587.00	11.40	143.40	3227.63	-1120.15	802.84	1378.14	1378.14	144.37	4.22
3619.00	10.60	143.80	3259.04	-1125.06	806.46	1384.25	1384.25	144.37	2.51
3650.00	9.20	144.80	3289.58	-1129.39	809.58	1389.58	1389.58	144.37	4.55
3682.00	7.70	146.20	3321.23	-1133.26	812.24	1394.28	1394.28	144.37	4.73
3713.00	6.60	145.90	3351.99	-1136.46	814.40	1398.14	1398.14	144.37	3.55
3744.00	5.80	144.80	3382.81	-1139.22	816.30	1401.48	1401.48	144.38	2.61
3776.00	5.10	145.50	3414.67	-1141.71	818.04	1404.52	1404.52	144.38	2.20
3808.00	4.50	145.90	3446.55	-1143.92	819.55	1407.20	1407.20	144.38	1.88
3839.00	3.50	143.40	3477.48	-1145.69	820.79	1409.36	1409.36	144.38	3.27
3870.00	2.60	141.30	3508.43	-1147.00	821.80	1411.01	1411.01	144.38	2.93

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3902.00	2.30	143.40	3540.40	-1148.08	822.63	1412.38	1412.38	144.38	.98
3934.00	1.70	141.00	3572.38	-1148.96	823.31	1413.49	1413.49	144.38	1.89
3965.00	.60	142.70	3603.38	-1149.45	823.70	1414.11	1414.11	144.37	3.55
3997.00	.30	80.50	3635.38	-1149.57	823.89	1414.32	1414.32	144.37	1.66
<b>Projected to Bit @ 4045 MD</b>									
4045.00	.30	80.50	3683.38	-1149.53	824.13	1414.43	1414.43	144.36	.00
<b>Projected TD @ 4845 MD</b>									
4845.00	.30	80.50	4483.37	-1148.84	828.27	1416.27	1416.28	144.21	.00

Job Number: DR1000040  
 Company: WEST BAY EXPLORATION  
 Lease/Well: WEST BAY/BOYD 2-27  
 Location: NORVELL TWP; JACKSON CO.  
 Rig Name: ADVANCED #2  
 State/Country: MICHIGAN / USA

Declination: 6.33 DEGREES WEST  
 File name: C:\WINSERVE\ASDRIL~12011  
 Date/Time: 04-Mar-10 / 10:01

**DDC**  
 Directional Drilling Contractors, LLC.



**RECORD OF WELL COMPLETION**

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

(Submit 3 copies within 60 days of well completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Permit number/deepening permit no. 60011		API number 21-075-60011	
Type of well (after completion) oil			
Well name & number West Bay Boyd #2-27			
Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Drive Suite 200, Traverse City Mi. 49684			
Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Previous permit numbers	
Total depth of well M.D. 4845'		T.V.D. 4483'	
Surface location SW ¼ of SE ¼ of SW ¼ Section 27 T 4S R 2E		Subsurface location (if directionally drilled) SE ¼ of NE ¼ of NW ¼ Section 27 T 4S R 2E	
Township Napoleon		County Jackson	
Footages: North/South 186' Ft. from South line and 1440' Ft. from West line of Sec.		Footages: North/South 963' Ft. from North line and 2264' Ft. from West line of Sec.	
Date well completed D&A		Producing formation(s) D&A	
Injection formation(s)		Date of first injection	
Part 615 - oil/gas wells		Part 625 - mineral wells	
Disposal formation(s)		Solution formation(s)	

**COMPLETION INTERVALS(S)**

Date	Number holes	Perforation or open hole interval	Open	
			Yes	No
3/11/10	52	4592-4605		x
3/15/10	28	4507-4514		x

**STIMULATION BY ACID OR FRACTURING**

Date	Interval treated	Materials and amount used
3/12/10	4592-4605	500 gal 28% Hcl acid
3/15/10	4507-4514	500 gal 28% Hcl acid

**PRODUCTION TEST DATA**

Oil Bbls/day	Gravity °API	Condensate Bbls/day	Gas MCF/day	Water Bbls/day	H <sub>2</sub> S Grains/100 ft <sup>3</sup>	B.H.P. and depth
0				100		

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (print or type) Timothy L. Baker	Signature 	Date 7/20/10
--	---------------	-----------------

Submit to: OFFICE OF GEOLOGICAL SURVEY  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30256  
LANSING MI 48909-7756



API number 21-075-60011 Permit number 60094

**CHANGE OF WELL STATUS**

Change was to:  Convert current zone to:  Remediate well:  Plugback (recomplete as)  Redrill:

Production  Perf and test existing zone  New production zone  Horizontal drain hole  
 Disposal  Repair casing/cement  Disposal  Collapsed casing  
 Secondary recovery  Other \_\_\_\_\_  Secondary recovery  Underream open hole  
 Storage  Storage  Storage  
 Other \_\_\_\_\_  Other  Other

Well casing record - BEFORE change							
Casing		Cement		Perforations			Acid or fracture treatment record
Size	Depth	Sacks	Type	From	To	If plugged, HOW?	
11 3/4"	424'	150/150	lite/A				
8 5/8"	3417'	650/200	lite/A				
5 1/2"	4842'	75/150	Halcm/A	4592	4605		500 gal 28% Hcl acid
				4507	4514		500 gal 28% Hcl acid

Well casing record - AFTER change (Indicate additions and changes only, complete test record)							
Casing		Cement		Perforations			Acid or fracture treatment record
Size	Depth	Sacks	Type	From	To	If plugged, HOW?	
				4592	4605	CIBP	
				4507	4514	CIBP	

BEFORE CHANGE				AFTER CHANGE			
Total depth	Completed Fm	Well completed for		Total depth	Completed Fm	Well completed for	
4842	Black River	Oil & GAs		4583	Black River	Oil & Gas	
BOPD	MCFGPD	Inj Rate	Pressure	BOPD	MCFGPD	Inj Rate	Pressure
0				200	98		460

DAILY PRODUCTION TEST RECORD						DAILY INJECTION TEST RECORD <input type="checkbox"/> Injection well <input type="checkbox"/> Brine disposal				
Date	Oil (bbls)	Water (bbls)	Gas (Mcf)	Pressure		Date	Bbls water or Mcf gas	Pressure		Specific gravity of water
				Tubing	Casing			Beginning	Ending	
5/25/10	231	0	68	520	620					
5/26/10	178	0	96	482	688					
5/27/10	196	0	100	492	690					
5/28/10	211	0	100	460	691					
5/29/10	188	0	100	457	688					
5/30/10	195	0	100	453	688					
5/31/10	195	0	100	447	688					

**DAILY CHRONOLOGY**

Describe in detail the daily chronology of change/plugging, include days shut down. Describe exceptions to issued plugging instructions. Describe tools, tubing, etc. left in hole and any logs run. Include dates pits filled, surface restored etc. Use additional pages as needed.

Date	Narrative
5/14/10	MIRU set CIBP @ 4321' Mill Window & Kick off at 4310 under permit # 60094 land lateral at 4267', 2140' South of surface and 824' East TOH Run tbg to T.D.
5/21/10	Test Well

NOTICE: Under Part 615 Supervisor of Wells or Part 625 Mineral Wells, Act 451 PA 1994, as amended, a well owner has continuing liability for the integrity of a plugged well.  
 CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (printed or typed) *Timothy L. Baker - Operations Mgr* Authorized signature *[Signature]* Date *5/21/10*

NOTE: Bonds cannot be terminated until plugging is completed, cellar, rat and mouse holes, and pits filled, site leveled and cleaned and records filed.



## RECORD OF WELL DRILLING OR DEEPENING

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Permit number/Deepening number  
60094

(Submit 3 copies within 60 days of drilling completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Suite 200 Traverse City Mi. 49684		API number 21-075-60011	
Name and address of drilling contractor Advanced Energy Services P.O. Box 85 South Boardman Mi. 49680		Well name and number West Bay & Boyd #2-27 HD 1	
Date drilling began 05/15/2010		Surface location SW 1/4 of SE 1/4 of SW 1/4 Section 22 T4S R2E	
Date drilling completed 05/21/2010		Township Norvell	
Total depth of well Driller 5102 Log NA		County Jackson	
Formation at total depth Black River		Footages North/South East/West 186' ft. from S line and 1440' ft. from W line of sec.	
Elevations K.B. 1042.6 ft. R.F. ft. R.T. 1041 ft. Grd 1029.2 ft		Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
		Previous permit numbers	
		Subsurface location (if directionally drilled) NE 1/4 of SE 1/4 of NW 1/4 Section 27 T 4S R 2E	
		Township Norvell	
		County Jackson	
		Footages North/South East/West 1590' ft. from N line and 2256' ft. from W line of sec.	
		Feet drilled - cable tools from to	
		Feet drilled - rotary tools from surf to TD	

Casing, Casing Liners and Cementing, Operating Strings					Water Fill Up (F.U.) or Lost Circulation (L.C.) (X)				
Size	Where set	Cement	T.O.C.	Fl. pulled	Formation	F.U.	L.C.	Depth	Amount
11 3/4"	424'	150 lite/150 A	surface						
8 5/8"	3417'	650 lite/200 A	surface						
5 1/2"	4842'	75 Halcem	3300"						
		150 Halcem							
		(PN 60011)							

Gross Pay Intervals				All Other Oil and Gas Shows Observed or Logged								
Formation	Oil or Gas	From	To	Formation					Where Observed (X)			
				Formation	Oil or Gas	Depth	Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
Black River	both	4310'	5102'									

Depth Correction		Deviation Survey			Plugged Back		
Depth	Correction	Run at	Degrees	Yes	No	Depth	
see	attached	directional					

Geophysical / Mechanical Logs (list each type run)		
Brand	Log types	Logged intervals
Unable to run logs in lateral		

Notice: Report complete sample and formation record, coring record, and drill stem test information on reverse side.

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Date 06/22/2010	Name and title (print) Timothy L. Baker	Signature 
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Submit to: OFFICE OF GEOLOGICAL SURVEY,  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
PO BOX 30256, LANSING, MI 48909-7756

# FORMATION RECORD

Attach additional sheets if necessary

API number	Permit number/Deepening number
	60094

Elevation used	Geologist name	Tops taken from
1043	Fowler/Baker/Vancyce	<input type="checkbox"/> Driller's log <input checked="" type="checkbox"/> Sample log <input type="checkbox"/> Electric log

From	To	Formation (type, color, hardness)	From	To	Formation (type, color, hardness)
Note: if well directionally drilled, add true vertical depth formation tops where appropriate					
surf	222(log)	Drift- Unconsolidated sand and gravel			
222	290	Shale& Siltstone- brn-gy-Grn, silty at top organic at base			
290	1230	Shale-Coldwater- Md-dk Brn-Blk, Silty, incr organic at base			
1230	1370	Sunbury Sh/Berea siltstone-Sh, Md Brn-Blk Silty, pyr. mixed w/siltstone, SSO-Lt md brn, Arg			
1370	15	Antrim-Dk Brn-Blk, Pyrand incr organic at base, SG incr toward base			
1554	1622	Traverse Fm- Limestone, Dk Brn-md Brn, Dns, Pyr, Dolomite, Md Gy-Gy, Dns			
1622	1744	Traverse Limestone-Md Brn-lt Brn Vfxln, Hd,			
1744	1978	Shale intbd w Dolomite and Lmst, Md Brn-Gy, Vfxln, Dns, Pos Dundee@1728'-Brn-Lt brn, Poor Samp, Pos Cvgs			
1978	2200	Detroit River- Anhydrite and Dolomite/Limestone, Lt-Md Brn Dns, Vfxln in pt, NS			
2200	2416	Bass Island/Bois Blanc- Dolomite, Anhydrite & Limestone AA			
2416	2685	G-Unit-Dolomite-Arg, Hd grading to Anhydrite- Lt-md Gy Brn			
2685	2766	C Shale-Gy-rdBrn, W/Dolomite and Anhydrite, Lt gy-Brn-bf Poor Samp. I			
2766	2972	B Evap-Anhydrite Wh-Lt Gy W/Dolomite-Vfxln, Lt-md Gy, Intbd at base with Anhy. AA	If well was cored, attach core description		
2972	3160	Dolo & Lmst-Wh-lt Gy, Dns, Anhydritic @3110-Wh, Dns	DRILL STEM TEST DATA		
3160	3386	Niagaran-Dolomite, AA, Md Gy, Vfxln Intbd W/Anhydrite AA, V porous 2880'-3300'			
3386	3884	Clinton/Cinn-Dolomite, Arg, hd, dk gy, grd to lt gy intbd w/Lmst, lt-md gy Dns			
3884	4212	Utica- Shale, Gy-Grn, Gummy-Hd			
4212	4526	Trenton-Dolo, Lt -Md Gy, Dns, W/ Lmst @ 4236'-4526' Lt-Md Gy Brn, Vfxln,			
4526	TD	Black River- Dolomite, Md Brn-GyBrn, SO&G@4590'			
	Under PN 60011				

4311

5102

discriptions of k cuttings after  
drilling window  
Dolomite- Lt Gy - Lt Brn, fxln,so &G,  
G cut & Flu ,Tr Frac,Partial loss of  
returns

LIST ATTACHMENTS

OFFICE OF GEOLOGICAL SURVEY USE ONLY

Reviewed by

Date of review



Directional Drilling Contractors, LLC.

Job Number: DR100134  
 Company: WEST BAY EXPLORATION  
 Lease/Well: WEST BAY/ BOYD 2-27 HD1  
 Location: NORVELL TWP., JACKSON CO.  
 Rig Name: MCCONNELL & SCULLY  
 RKB:  
 G.L. or M.S.L.:

State/Country: MICHIGAN / USA  
 Declination: 6.37 DEGREES WEST  
 Grid:  
 File name: C:\WINSERVE\PENDING\2010\BOYD227.SVY  
 Date/Time: 24-May-10 / 12:20  
 Curve Name: WEST BAY/BOYD 2-27 HD1 ( as drilled )

Directional Drilling Contractors  
 SURVEY REPORT

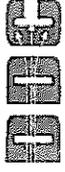
WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane 158.94  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
<b>KOP @ TIE @ 4315 MD</b>									
4315.00	.30	80.50	3953.37	-1149.29	825.53	1369.17	1415.05	144.31	.00
4346.00	5.20	164.10	3984.33	-1150.63	826.00	1370.59	1416.41	144.33	16.69
4379.00	11.30	164.50	4016.97	-1155.19	827.27	1375.30	1420.86	144.39	18.49
4409.00	18.00	173.60	4045.98	-1162.63	828.57	1382.72	1427.67	144.52	23.55
4440.00	25.90	180.70	4074.72	-1174.18	829.03	1393.66	1437.36	144.78	26.84
4472.00	34.30	181.70	4102.38	-1190.21	828.67	1408.49	1450.28	145.15	26.30
4503.00	40.00	181.70	4127.08	-1208.92	828.12	1425.75	1465.35	145.59	18.39
4535.00	45.80	181.70	4150.51	-1230.68	827.47	1445.83	1483.00	146.08	18.12
4567.00	51.30	181.40	4171.68	-1254.65	826.83	1467.96	1502.59	146.61	17.20
4598.00	57.90	180.70	4189.63	-1279.90	826.37	1491.36	1523.49	147.15	21.37
4630.00	64.60	181.00	4205.01	-1307.94	825.95	1517.37	1546.90	147.73	20.95
4662.00	72.30	183.10	4216.76	-1337.66	824.87	1544.72	1571.54	148.34	24.82
4693.00	79.20	184.90	4224.39	-1367.61	822.77	1571.92	1596.03	148.97	22.96
4722.00	83.30	184.50	4228.80	-1396.17	820.42	1597.73	1619.38	149.56	14.20
4754.00	86.60	184.50	4231.61	-1427.94	817.92	1626.48	1645.61	150.20	10.31
4786.00	89.10	183.40	4232.81	-1459.84	815.72	1655.46	1672.28	150.80	8.53
4817.00	89.90	182.40	4233.08	-1490.80	814.15	1683.78	1698.63	151.36	4.13
4848.00	89.60	180.70	4233.22	-1521.79	813.31	1712.40	1725.49	151.88	5.57
4880.00	90.20	180.00	4233.28	-1553.79	813.12	1742.19	1753.69	152.38	2.88
4911.00	92.70	180.70	4232.49	-1584.77	812.93	1771.04	1781.11	152.84	8.37
4943.00	92.80	180.00	4230.96	-1616.74	812.73	1800.80	1809.52	153.31	2.21

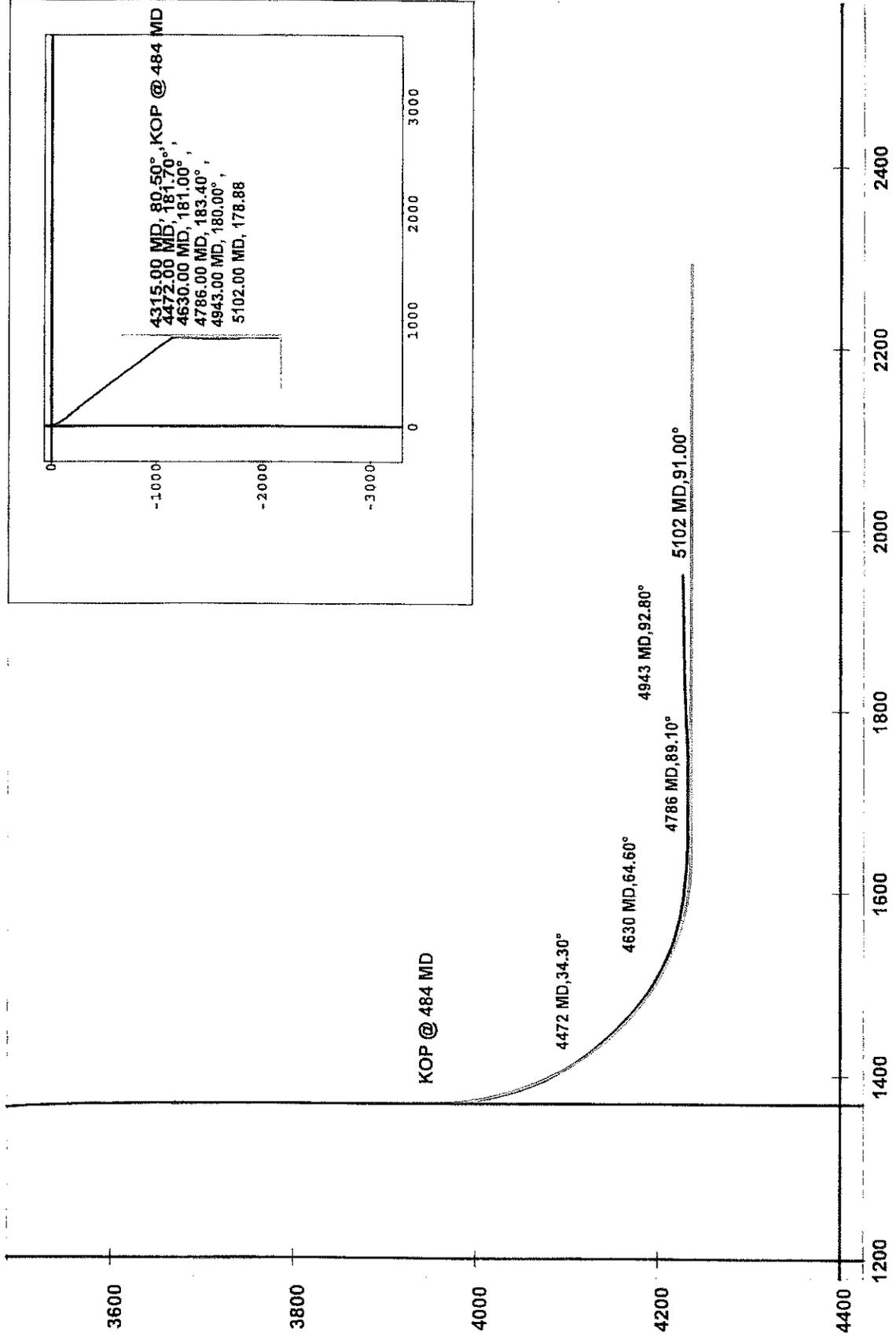
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
4974.00	91.40	179.30	4229.82	-1647.71	812.92	1829.77	1837.34	153.74	5.05
5036.00	90.70	178.20	4228.68	-1709.69	814.28	1888.09	1893.69	154.53	2.10
5092.00	90.95	178.88	4227.87	-1765.66	815.70	1940.84	1944.98	155.20	1.29
<b>PROJECTED TD @ 5102 MD</b>									
5102.00	91.00	179.00	4227.70	-1775.66	815.89	1950.24	1954.13	155.32	1.29

Job Number: DR100134  
 Company: WEST BAY EXPLORATION  
 Lease/Well: WEST BAY/BOYD 2-27 HD1  
 Location: NORVELL TWP, JACKSON CO.  
 Rig Name: MCCONNELL & SCULLY  
 State/Country: MICHIGAN / USA

Declination: 6.37 DEGREES WEST  
 File name: C:\WINSERVE\IPENDING\2  
 Date/Time: 24-May-10 / 12:17



Directional Drilling Contractors, LLC.





## RECORD OF WELL COMPLETION

By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

(Submit 3 copies within 60 days of well completion.)

Part 615 Oil/Gas Well  Part 625 Mineral Well

Permit number/deepening permit no. 60094	API number 21-075-60011
Type of well (after completion) oil	
Well name & number West Bay Boyd #2-27 HD 1	

Name and address of permittee West Bay Exploration 13685 S. West Bay Shore Drive Suite 200, Traverse City Mi. 49684					
Directionally drilled (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Previous permit numbers		Total depth of well M.D. 5102' T.V.D. 4228'	
Surface location SW ¼ of SE ¼ of SW ¼ Section 22 T 4S R 2E			Subsurface location (if directionally drilled) NE ¼ of SE ¼ of NW ¼ Section 27 T 4S R 2E		
Township Napoleoni		County Jackson		Township Napoleon	
County Jackson		Township Napoleon		County Jackson	
Footages: North/South 186' Ft. from South line and 1440' Ft. from West line of Sec.			Footages: North/South 1590' Ft. from North line and 2256' Ft. from West line of Sec.		
East/West			East/West		
Part 615 - oil/gas wells			Part 625 - mineral wells		
Date well completed oil & Gas		Producing formation(s) Black River	Injection formation(s)	Date of first injection	Disposal formation(s)
					Solution formation(s)

## COMPLETION INTERVALS(S)

Date	Number holes	Perforation or open hole interval	Open	
			Yes	No
5/25/10	open hole	4311-5102'	X	

## STIMULATION BY ACID OR FRACTURING

Date	Interval treated	Materials and amount used

## PRODUCTION TEST DATA

Oil Bbls/day	Gravity °API	Condensate Bbls/day	Gas MCF/day	Water Bbls/day	H <sub>2</sub> S Grains/100 ft <sup>3</sup> .	B.H.P. and depth
200	43		98			

CERTIFICATION "I state that I am authorized by said owner. This report was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Name and title (print or type) Timothy L. Baker	Signature 	Date 05/30/10
--	---------------	------------------

Submit to: OFFICE OF GEOLOGICAL SURVEY  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30256  
LANSING MI 48909-7756

12148 LADD

Geological Survey No.  

# MICHIGAN DEPARTMENT OF PUBLIC HEALTH WATER WELL AND PUMP RECORD

W 7671  
PERMIT NUMBER

<b>1 LOCATION OF WELL</b>		
County <b>JACKSON</b>	Township Name <b>NORVELL</b>	Fraction <b>SE 1/4 NE 1/4 NE 1/4</b>
		Section <b>27</b>
		Town Number <b>4 S</b>
		Range Number <b>2 E</b>
Distance and Direction From Road Intersection  <b>12148 LADD</b> <b>BROOKLYN MI 49230</b> <small>Street Address City Of Well location</small> <small>Locate with "X" in Section Below</small>		
<small>Sketch Map</small> 		
<b>3 OWNER OF WELL:</b> <b>ROBERT A. BRISTLE</b> <b>12148 LADD</b> <b>BROOKLYN MI 49230</b> Address Same as Well Location? <input checked="" type="checkbox"/>		
<b>4 WELL DEPTH:</b> <b>186 ft.</b> <b>Date Completed:</b> <b>8/6/99</b> <b>NEW WELL</b>		
<b>5 DRILLING METHOD:</b> <b>ROTARY</b>		
<b>6 USE:</b> <b>DOMESTIC</b>		
<b>7 CASING:</b> <b>PLASTIC</b> Diameter 5" to 173 ft. depth  Grouted Drill Hole Diameter 9" to 173 ft. depth		Height: <b>ABOVE</b> Surface 1'  Weight <b>SDR 21</b> Drive Shoe? <input type="checkbox"/>
<b>8 SCREEN:</b> Type: <b>NONE</b> Diameter " <b>Nominal</b>		
<b>FITTINGS:</b>		
<b>9 STATIC WATER LEVEL:</b> 52 ft. below land surface      Flow? <input type="checkbox"/>		
<b>10 PUMPING LEVEL:</b> below land surface 52 ft. after 2 hrs. pumping at 12 G.P.M.		
<b>11 WELL HEAD COMPLETION</b> <b>PITLESS ADAPTOR</b>		
<b>12 WELL GROUTED?</b> <input checked="" type="checkbox"/> <b>EZ SEAL</b> From 0 to 173 ft. 19 bags of cement.		
<b>13 NEAREST SOURCE OF CONTAMINATION:</b> Type <b>SEPTIC</b> Distance <b>150 ft.</b> Direction <b>S</b> Well disinfected upon completion? <input checked="" type="checkbox"/> Old Well Plugged?		
<b>14 PUMP:</b> <b>Manufacturers name RED JACKET</b> <b>Model number 75CNSWI-12SBC HP 3/4 VOLTS 230V</b> <b>Length of Drop Pipe 75 ft. capacity 12 G.P.M.</b> Type <b>SUBMERSIBLE</b>  <b>PRESSURE TANK:</b> <b>Manufacturers Name AMTROL (OWNERS)</b> <b>Model Number WX 202 Capacity 6.2 Gallons</b>		

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND	20	20
YELLOW CLAY	8	28
GRAY CLAY	24	52
GRAVEL	3	55
GRAY CLAY	112	167
SAND ROCK	21	188
PUMPING LEVEL		
EST WITH AIR		
100+ GPM		

RECEIVED SEP 09 1999

RECEIVED  
MICH DEPT OF ENVIRONMENTAL QUALITY

OCT 08 1999

Drinking Water & Foundation Division  
Ground Water, Surface Water & Wells Construction Unit

**CRIBLEY OFFICE NOTES**

WELLS AWC 5-1 1" PVC 75  
CDCW14574P18609

<b>15 REMARKS, ELEVATION, SOURCE OF DATA, ETC.</b>	<b>18 WATER WELL CONTRACTOR'S CERTIFICATION:</b>
NO LINER	This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief. <b>Cribley Drilling Co., Inc.</b> <b>81-0624</b> <small>REGISTRATION NO.</small> REGISTERED BUSINESS NAME Address: <b>8300 Dexter Chelsea Rd., Dexter, MI 48130</b> Signed: <i>Jack A. Clark</i> Date: <b>8/17/99</b> AUTHORIZED REPRESENTATIVE
<b>17 RIG OPERATOR'S NAME</b> <b>KEN PEARCE</b>	

D87d 2/89

**IMPORTANT: File with deed.**

GEOLOGICAL SURVEY COPY

Authority: Act 368 PA 1978  
 Completion: Required  
 Penalty: Conviction of a violation of any provision is a misdemeanor

H 313-675-8958  
W 313-481-7901

**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

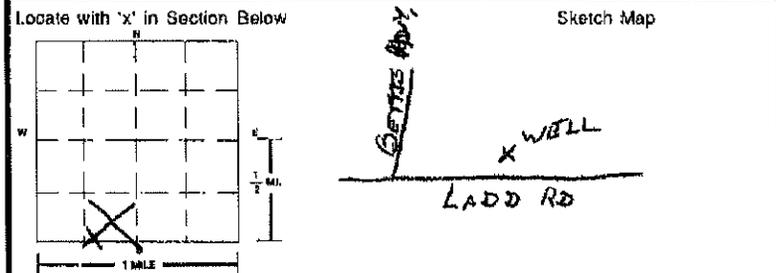
PERMIT NO:

W-4119

TAX NO: \_\_\_\_\_

1. LOCATION OF WELL  
County JACKSON Township Name NORWELL Fraction S<sup>1</sup>/<sub>4</sub> S<sup>1</sup>/<sub>4</sub> S<sup>1</sup>/<sub>4</sub> S<sup>1</sup>/<sub>4</sub> Section No. 22 Town No. 45 Range No. 2E

Distance and Direction from Road Intersection  
1/4 MILE EAST OF BETTIE'S HWY. ON N. SIDE OF LADD RD.



3. OWNER OF WELL LARRY KLOPPER  
Address 12160 LADD RD. BROOKLYN, MI  
Address Same as Well Location  Yes  No

4. WELL DEPTH: 114 ft. Date Completed 5/20/98  
 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

7. CASING:  Steel  Threaded  Welded  
 Plastic  Other  
Height: Above/Below Surface: 1 ft  
Diameter: 5 in. to 108 ft. depth Weight: PVC lbs/ft.  
BORE HOLE: Diameter: 8 in. to 114 ft. depth  Drive Shoe  Shaft Packer

8. SCREEN:  Not Installed  Gravel-Packed  
Type JOHNSON Diameter 4"  
Slot/Gauze .020 Length: 6 FT  
Set Between 108 ft. and 114 ft.  
FITTINGS:  K-Packer  Bremer Check  
 Blank Above Screen 1 ft. Other THREAD ON

9. STATIC WATER LEVEL: 30 ft. Below Land Surface  Flowing

10. PUMPING LEVEL: Below Land Surface  
50 ft. After 2 hrs. Pumping at 12 G.P.M.  
 Plunger  Bailor  Air  Test Pump

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

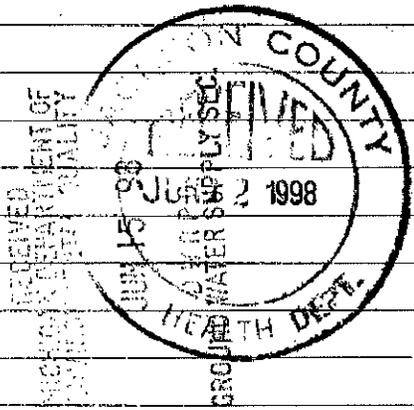
12. WELL GROUTED?  No  Yes From 0 to 108 ft.  
 Neat Cement  Bentonite  Other  
No. of Bags 5 1/2 Additives BENTONAL

13. NEAREST SOURCE OF POSSIBLE CONTAMINATION:  
Type SEPTIC Distance 50+ ft. Direction NORTH  
Type \_\_\_\_\_ Distance \_\_\_\_\_ ft. Direction \_\_\_\_\_

14. PUMP:  Not Installed  Pump Installation Only  
Manufacturer's Name MYERS  
Model Number JS12A HP 1/2 Volts 230  
Length of Drop Pipe 80 ft. Capacity 10 G.P.M.  
TYPE:  Submersible  Jet  Other  
PRESSURE TANK:  
Manufacturer's Name WEL-X-TROL  
Model Number WX-202 Capacity 20 Gallons

2. FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
<u>SAND</u>	<u>27</u>	<u>27</u>
<u>CLAY</u>	<u>64</u>	<u>91</u>
<u>GRAVEL + CLAY</u>	<u>12</u>	<u>103</u>
<u>SAND + GRAVEL</u>	<u>11</u>	<u>114</u>



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

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

17. DRILLING MACHINE OPERATOR:  
 Employee  Subcontractor  
Name CHARLES F. TORNOW

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.  
GARDNER & SONS INC. 3039  
REGISTERED BUSINESS NAME REGISTRATION NO.  
Address 3768 M-50 TIRTON, MI 49287  
Signed Philip R. Gode Date 5-20-98  
AUTHORIZED REPRESENTATIVE

**WATER WELL AND PUMP RECORD**

PART 127 ACT 368, P.A. 1978

PERMIT NUMBER

<b>1 LOCATION OF WELL</b>		PART 127 ACT 368, P.A. 1978		PERMIT NUMBER	
County <b>Jackson</b>		Township Name <b>Norvell</b>		Section Number <b>22</b>	
Distance And Direction From Road Intersection <b>1/2 mi E Bettis &amp; Ladd Roads</b>		Fraction <b>SW 1/4 SE 1/4</b>		Town Number <b>T4S</b>	
12180 Ladd Rd		Address <b>12180 Ladd Road Brooklyn, MI 49230</b>		Range Number <b>R2E</b>	
Street Address & City of Well Location		Address Same As Well Location? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		E/W	
Locate with "X" in Section Below		Sketch Map:		3 OWNER OF WELL: <b>Harry Haligus</b>	
				Date of Completion <b>11/30/83</b>	
2 FORMATION DESCRIPTION		THICKNESS OF STRATUM		DEPTH TO BOTTOM OF STRATUM	
		Sand and gravel		21 21	
		Sand, gravel and shale		89 110	
		Dirty shale, sand and gravel		24 134	
		Sand, gravel and shale		14 148	
Sandstone		32 180		4 CASING: Diameter <input type="checkbox"/> Steel <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Welded	
				Height Above/SURFACE Surface <b>1</b> ft	
				Weight <b>2</b> lbs./ft.	
				Drive Shoe <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
				7 USE: <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Type I Public <input type="checkbox"/> Type III Public	
				<input type="checkbox"/> Irrigation <input type="checkbox"/> Type IIa Public <input type="checkbox"/> Heat pump	
				<input type="checkbox"/> Test Well <input type="checkbox"/> Type IIb Public <input type="checkbox"/>	
				8 SCREEN: <input checked="" type="checkbox"/> Not installed	
				Type _____ Diameter _____	
				Slot/Gauze _____ Length _____	
				Set between _____ ft and _____ ft.	
				FITTINGS <input type="checkbox"/> K-Packer <input type="checkbox"/> Lead Packer <input type="checkbox"/> Bremer Check	
				<input type="checkbox"/> Blank above screen _____ ft. Other _____	
				9 STATIC WATER LEVEL: <b>43</b> ft. below land surface <input type="checkbox"/> Flow	
				10 PUMPING LEVEL: below land surface	
				<b>44</b> ft. after <b>1</b> hrs. pumping at <b>15</b> G.P.M.	
				_____ ft. after _____ hrs. pumping at _____ G.P.M.	
				11 WELL HEAD COMPLETION <input type="checkbox"/> Pileless adapter <input checked="" type="checkbox"/> 12" above grade	
				<input type="checkbox"/> Basement offset <input type="checkbox"/> Approved pit	
				12 WELL GROUTED? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes From <b>1</b> to <b>156</b> ft.	
				<input type="checkbox"/> Neat cement <input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Other _____	
				No. of bags of cement <b>1</b> Additives _____	
				13 Nearest source of possible contamination	
				Type _____ Distance _____ ft. Direction _____	
				Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
				14 PUMP: <input checked="" type="checkbox"/> Not installed <input type="checkbox"/> Pump installation only	
				Manufacturer's name _____	
				Model number _____ HP _____ Volts _____	
				Length of Drop Pipe _____ ft. capacity _____ G.P.M.	
				TYPE: <input type="checkbox"/> Submersible <input type="checkbox"/> Jet	
				PRESSURE TANK:	
				Manufacturer's name _____	
				Model number _____ Capacity _____ Gallons	
15. Remarks, elevation, source of data, etc.		16. WATER WELL CONTRACTOR'S CERTIFICATION:			
RECEIVED Mich. Dept. of Public Health JUN 7 1984 Bureau of Environmental and Occupational Health - GWCS		This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.		Fox & Boley Well Drilling, Inc. 167 - 1517	
8640 CORRECTED BY ADDITION BY ELEVATION DEPTH TO SACK		REGISTERED BUSINESS NAME		REGISTRATION NO.	
		Address <b>6655 Brooklyn Rd., Jackson, MI 49201</b>			
		Signed <i>Norman L. Melville</i> Date <b>5/14/84</b>			
		AUTHORIZED REPRESENTATIVE			

Probably  
12215 Ladd Rd



# Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.



Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 11701	<b>County:</b> Jackson		<b>Township:</b> Norvell	
<b>Well ID: 38000006689</b>	<b>Town/Range:</b> 04S 02E	<b>Section:</b> 27	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
	<b>Distance and Direction from Road Intersection:</b> .4 MILE E OF LADD RD & BETTIS RD				
	<b>Well Owner:</b> NEIL WELCH				
	<b>Well Address:</b> 1215 LADD RD		<b>Owner Address:</b> 305 CASS AVE JACKSON, MI 49203		
<b>Elevation:</b>					
<b>Latitude:</b> 42.10084738					
<b>Longitude:</b> -84.18260323					
<b>Method of Collection:</b> Interpolation-Map					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 196.00 ft.	<b>Date Completed:</b> 8/1/2003	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Aermotor	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> A-12-50	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 65.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Shale packer/trap		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 168.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 168.00 ft. depth 4.75 in. to 196.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	<b>Tank Capacity:</b> 5.0 Gallons
		<b>Pressure Tank Type:</b> Unknown	
		<b>Manufacturer:</b> Well-Mate	
		<b>Model Number:</b> WM-6	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 43.00 ft. Below Grade (Not Flowing) <b>Unrestricted Flow Rate:</b> <b>Well Yield Test:</b> Pumping level 47.00 ft. after 1.00 hrs. at 20 GPM <b>Yield Test Method:</b> Test pump	Formation Description		Thickness	Depth to Bottom
	Clay Sand Gravel		8.00	8.00
			4.00	12.00
			25.00	37.00
			18.00	55.00
<b>Screen Installed:</b> No <b>Intake:</b> Bedrock Well			31.00	86.00
			19.00	105.00
			50.00	155.00
			7.00	162.00
			34.00	196.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>Geology Remarks:</b>	
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 16.00	<b>Additives:</b> None	<b>Depth:</b> 0.00 ft. to 168.00 ft.
<b>Wellhead Completion:</b> Pitless adapter			

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> TBURKHOLDER/MSEXTON		
<b>Type:</b> Septic tank	<b>Distance:</b> 50 ft.	<b>Direction:</b> Southwest	<b>Employment:</b> Employee
	<b>Contractor Type:</b> Water Well Drilling Contractor		<b>Reg No:</b> 167
	<b>Business Name:</b> FOX & BOLEY WELL DRILLING, INC		
	<b>Business Address:</b>		
<b>Water Well Contractor's Certification</b>			
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.			
<b>Signature of Registered Contractor</b>			<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b>

**ATTENTION WELL OWNER: FILE WITH DEED**



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 8613	<b>County:</b> Jackson		<b>Township:</b> Norvell	
<b>Well ID: 38000004062</b>	<b>Town/Range:</b> 04S 02E	<b>Section:</b> 27	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
	<b>Distance and Direction from Road Intersection:</b> 2/10 MI E. OF LADD RD. & BETTIS RD				
	<b>Well Owner:</b> HOLLIS HAMM				
	<b>Well Address:</b> 12161 LADD RD. BROOKLYN, MI 49230		<b>Owner Address:</b> 12161 LADD RD. BROOKLYN, MI 49230		
<b>Elevation:</b>					
<b>Latitude:</b> 42.10158183					
<b>Longitude:</b> -84.18806133					
<b>Method of Collection:</b> Address Matching-House Number					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 212.00 ft.	<b>Date Completed:</b> 7/7/2000	<b>Pump Installation Date:</b>	<b>HP:</b> 1.00
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Aermotor	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> A+20-100	<b>Pump Capacity:</b> 20 GPM
<b>Casing Joint:</b> Other		<b>Drop Pipe Length:</b> 65.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 176.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 176.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	
		<b>Pressure Tank Type:</b> Unknown	
		<b>Manufacturer:</b> Well-Mate	
		<b>Model Number:</b> WM-14WB	<b>Tank Capacity:</b> 14.0 Gallons
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 45.00 ft. Below Grade (Not Flowing) <b>Unrestricted Flow Rate:</b> <b>Well Yield Test:</b> Pumping level 46.00 ft. after 1.00 hrs. at 20 GPM	<b>Yield Test Method:</b> Test pump	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
		Sand & Gravel	2.00	2.00
		Clay	7.00	9.00
		Sand & Gravel	6.00	15.00
		Clay	4.00	19.00

<b>Screen Installed:</b> No <b>Intake:</b> Bedrock Well	Clay Sand Gravel	65.00	84.00
	Sand & Gravel	11.00	95.00
	Sand & Gravel	13.00	108.00
	Clay Sand Gravel	22.00	130.00
	Gray Sandstone	2.00	132.00
	Clay Sand Gravel	20.00	152.00
	Sand Gravel Clay	8.00	160.00
	Sand & Gravel	11.00	171.00
	Gray Sandstone	27.00	198.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>(Continued On Page 2)</b>		
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 18.00	<b>Additives:</b> Other	<b>Depth:</b> 0.00 ft. to 175.00 ft.	<b>Geology Remarks:</b>

<b>Wellhead Completion:</b> Pitless adapter	
---	--

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> TBURKHOLDER/HHARRIS
<b>Type:</b> None	<b>Employment:</b> Employee
<b>Distance:</b>	
<b>Direction:</b>	

<b>(Continued on page 2)</b>	
------------------------------	--

<b>General Remarks:</b>
<b>Other Remarks:</b> Casing Joint:GLUED, Grouting Additive 1:QUICK-GROUT/BENSEAL

**ATTENTION WELL OWNER: FILE WITH DEED**



MAR 30 1973

**WATER WELL RECORD**  
ACT 204 PA 1965

MICHIGAN DEPARTMENT  
OF  
PUBLIC HEALTH

<b>1 LOCATION OF WELL</b>					
County <b>Jackson</b>	Township Name <b>Norvell</b>	Fraction <b>SW<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub></b>	Section Number <b>22</b>	Town Number <b>T4S N/S.</b>	Range Number <b>R2E E/W.</b>

Distance And Direction from Road Intersections  
**NE corner Bettis & Ladd Roads**

**Ladd Road**  
Street address & City of Well Location

Locate with "X" in section below

Sketch Map:

**3 OWNER OF WELL:**  
Address **Joseph Natter**  
**1005 Lakeview**  
**Brooklyn, Michigan 49230**

**4 WELL DEPTH:** (completed) Date of Completion  
**180** ft. **2/7/73**

**5**  Cable tool  Rotary  Driven  Dug  
 Hollow rod  Jotted  Bored

**6 USE:**  Domestic  Public Supply  Industry  
 Irrigation  Air Conditioning  Commercial  
 Test Well

**7 CASING:** Threaded  Welded  Height: Above/Surface **1** ft.  
Diam. \_\_\_\_\_ Weight **11** lbs./ft.  
Drive Shoe? Yes  No

**4** in. to **184** ft. Depth  
\_\_\_\_\_ in. to \_\_\_\_\_ ft. Depth

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Send	15	15
Shale and gravel	110	125
Shale	8	137
Gravel	8	145
Shale	10	155
Gravel	6	161
Shale	4	165
Sandstone	15	180

**8 SCREEN:**  
Type: **none** Dia.: \_\_\_\_\_  
Slot/Gauze \_\_\_\_\_ Length: \_\_\_\_\_  
Set between \_\_\_\_\_ ft. and \_\_\_\_\_ ft.  
Fittings: \_\_\_\_\_

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

**10 PUMPING LEVEL** below land surface  
**50** ft. after **2** hrs. pumping **20** G.P.M.  
\_\_\_\_\_ ft. after \_\_\_\_\_ hrs. pumping \_\_\_\_\_ G.P.M.

**11 WATER QUALITY** in Parts Per Million:  
Iron (Fe) \_\_\_\_\_ Chlorides (Cl) \_\_\_\_\_  
Hardness \_\_\_\_\_ Other \_\_\_\_\_

**12 WELL HEAD COMPLETION:**  In Approved Pit  
 Pitless Adaptor  12" Above Grade

**13 Well Grouted?**  Yes  No  
 Neat Cement  Bentonite   
Depth: From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**14 Nearest Source** of possible contamination  
**none** feet \_\_\_\_\_ Direction \_\_\_\_\_ Type \_\_\_\_\_  
Well disinfected upon completion  Yes  No

**15 PUMP:**  Not installed **as yet**  
Manufacturer's Name \_\_\_\_\_  
Model Number \_\_\_\_\_ HP \_\_\_\_\_ Volts \_\_\_\_\_  
Length of Drop Pipe \_\_\_\_\_ ft. capacity \_\_\_\_\_ G.P.M.  
Type:  Submersible  Jet  Reciprocating

**16 Remarks, elevation, source of data, etc.**

ADDED INFO. BY DRILLER, ITEM ALL

CORRECTED BY

ADDITION

**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.

**For Brothers Drillers, Inc.** 167  
REGISTERED BUSINESS NAME REGISTRATION NO.

Address **6655 Brooklyn Road, Jackson, Michigan**  
**49201**

Signed *[Signature]* Date **2/20/73**  
AUTHORIZED REPRESENTATIVE

**Appendix  
"5"**



# APPENDIX 5

SPL Inc.  
459 Hughes Drive  
Traverse City, MI 49686  
Phone: (231) 947-5777  
Fax: (231) 947-1072

## GENERAL WATER ANALYSIS

WorkOrder: T10080299 LANTIS 2-30 WELL

Lab ID: T10080299001 Date/Time Received: 8/26/2010 10:51 Matrix: Water  
Sample ID: LANTIS 2-30 WELL Date/Time Collected: 8/19/2010 12:30

Method	Parameters	Results	Analyzed
<b>ANION</b>			
EPA 310.1	Alkalinity, CO <sub>3</sub> <sup>2-</sup> as CaCO <sub>3</sub>	ND mg/l	09/02/2010 14:19 by MD
EPA 310.1	Alkalinity, HCO <sub>3</sub> <sup>-</sup> as CaCO <sub>3</sub>	230 mg/l	09/02/2010 14:19 by MD
EPA 325.2	Chloride	174000 mg/l	09/10/2010 16:27 by MD
EPA 375.4	Sulfate	315 mg/l	09/09/2010 14:20 by MD
EPA 376.2	Sulfide	ND mg/l	09/09/2010 15:49 by JS
<b>CATION</b>			
EPA 200.8	Calcium	28400 mg/l	09/09/2010 21:40 by JS
EPA 200.8	Magnesium	4870 mg/l	09/09/2010 22:39 by JS
EPA 200.8	Potassium	3000 mg/l	09/09/2010 22:39 by JS
EPA 200.8	Sodium	37600 mg/l	09/09/2010 21:40 by JS
EPA 200.8	Barium	2.25 mg/l	09/09/2010 22:39 by JS
EPA 200.8	Iron	81.4 mg/l	09/09/2010 22:39 by JS
<b>OTHER</b>			
EPA 150.1	pH	6.1 SU	09/03/2010 11:59 by MD
EPA 120.1	Resistivity	0.0460 ohm-meter	09/03/2010 00:37 by MD
ASTM D1429	Specific Gravity	1.193	09/08/2010 14:39 by JS
	Total dissolved solids (calculated) =	248498.65	



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