

**EXHIBIT B-1**

**West Bay Exploration Co. Permit Application**

West Bay Exploration Company (WBEC), Haystead #9 SWD  
(Permit #MI-079-2D-0010)

**Administrative Record  
Item # 1**

April 27, 2011

Timothy Brock, WBEC



United States Environmental Protection Agency  
**Underground Injection Control  
 Permit Application**  
 (Collected under the authority of the Safe Drinking  
 Water Act. Sections 1421, 1422, 40 CFR 144)

I. EPA ID Number		
	T/A	C
RECEIVED		

Read Attached Instructions Before Starting  
 For Official Use Only

Application approved mo day year	Date received mo day year	Permit Number	Well ID	FINDS Number

II. Owner Name and Address			III. Operator Name and Address		
Owner Name West Bay Exploration Company			Owner Name West Bay Exploration Company		
Street Address 13685 South West Bay Shore Drive, Suite 200		Phone Number (231) 946-0200	Street Address 13685 South West Bay Shore Drive, Suite #200		Phone Number (231) 946-0200
City Traverse City	State MI	ZIP CODE 49684	City Traverse City	State MI	ZIP CODE 49685

IV. Commercial Facility	V. Ownership	VI. Legal Contact	VII. SIC Codes
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Private <input type="checkbox"/> Federal <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator	1311

VIII. Well Status (Mark "x")			
<input type="checkbox"/> A Operating	Date Started mo day year	<input type="checkbox"/> B. Modification/Conversion	<input checked="" type="checkbox"/> C. Proposed

IX. Type of Permit Requested (Mark "x" and specify if required)			
<input checked="" type="checkbox"/> A. Individual	<input type="checkbox"/> B. Area	Number of Existing Wells 0	Number of Proposed Wells 1
		Name(s) of field(s) or project(s) Haystead 9 SWD	

X. Class and Type of Well (see reverse)			
A. Class(es) (enter code(s)) II	B. Type(s) (enter code(s)) D	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)

XI. Location of Well(s) or Approximate Center of Field or Project													XII. Indian Lands (Mark "x")		
Latitude			Longitude			Township and Range							<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Deg	Min	Sec	Deg	Min	Sec	Sec	Twp	Range	1/4 Sec	Feet From	Line	Feet From	Line		
42	08	02	84	12	23	9	4S	2E	SW	2475	S	1123	W		

XIII. Attachments  
 (Complete the following questions on a separate sheet(s) and number accordingly; see instructions)  
 For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A--U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application.

XIV. Certification  
 I certify under the penalty of law that I have personally 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)

A. Name and Title (Type or Print) Timothy Brock - Petroleum Engineer-Agent for West Bay Exploration Company	B. Phone No. (Area Code and No.) (231) 946-0200
C. Signature <i>Timothy Brock AB</i>	D. Date Signed 04/27/2011

**RECEIVED**

APR 29 2011

**UIC BRANCH**  
EPA, REGION 5

**Haystead 9 SWD**  
**EPA Permit Attachments and Appendices 2/21/11**  
**Attachment A**

Area of Review Methods:

The area of review is a fixed radius of ¼ mile from the well bore.

**Attachment B**

Maps of Wells/Area and Area of Review:

Attached is a topographic map that extends at least 1 mile beyond the proposed injection well. Shown are the following: the injection well, the ¼ mile radius of review, all producing wells, injection wells, abandoned wells, surface bodies of water, springs and other pertinent surface features. The map also shows residences and roads. There are no residences within the area of review, and as such there are no fresh water wells of record within the area of review. It is planned to drill a temporary fresh water well for water supply for drilling in the vicinity of the proposed injection well. No faults are known to exist or suspected in the area of review. The following is a list of the wells drilled or proposed within the area of review and their type:

Map Ref.	Well Name	Surface Location	Date Drilled	State PN	Operator	Total Depth	Status
60076	Haystead 1-9	NE/NW/SW SEC.9 T4S R2E	05/2010	60076	West Bay Exploration Company	4804' MD	Dry Hole
60106	Haystead 1-9A	NE/NW/SW SEC.9 T4S R2E	06/2010	60106	West Bay Exploration Company	4589' MD	Producing Oil Well (kick of 1-9)
60078	Haystead 3-9	NE/NW/SW SEC.9 T4S R2E	N/A	60078	West Bay Exploration Company	Not Drilled Yet	Permitted Oil and Gas Well
PROP 60425	Haystead SWD	NE/NW/SW SEC.9 T4S R2E	N/A	N/A	West Bay Exploration Company	Not Drilled Yet	Proposed UIC Well

All of these wells either will or have penetrated the injection zone (only three penetrations due to the directional geometries of the wells) and have been cased and cemented across the injection zone. An unnamed intermittent stream flows from the southeast to the northwest in the northeastern part of the AOR. This stream empties into the River Raisin. There are no known springs within the area of review. There is a marshy area on the southeast part of the AOR and a marshy area that follows the unnamed intermittent stream.

**Attachment C**

Corrective Action Plan and Well Data:

**Haystead 9 SWD**  
**EPA Permit Attachments and Appendices 2/21/11**

Should upward fluid migration occur through the well bore of any previously unknown, improperly plugged or unplugged well due to injection of permitted fluids, injection will be shut-in until proper plugging can be accomplished. The UIC branch of the EPA will be notified immediately. Should any problems develop in the casing of the injection well, injection will be shut-in until such repairs can be made to remedy the situation. Operations shall not be resumed until the Director gives approval in writing.

Attached are copies of the well completion reports for all wells within the area of review.

**Attachment D**

Maps and Cross Sections of USDW's:

Does not apply to Class II wells.

**Attachment E**

Name and Depth of USDW's:

The following are the USDW's in the area of the subject permit. This information was gathered from public well records, as well as the publication 'Hydrogeology for Underground Injection Control in Michigan: Part 1' and the Michigan Hydrogeologic Atlas (Plate 24), both published by the Department of Geology, College of Arts and Sciences, Western Michigan University, Kalamazoo, Michigan, 1981. The depth to the base of the lowermost USDW was determined by mapping the existing well control in the area. Attached is a map showing the subsea depth of the base of lowest USDW in this area.

<b>Name of USDW</b>	<b>Measured Top of USDW</b>	<b>Measured Base of USDW</b>
Glacial Drift	Surface	85'
Marshall Sandstone	85'	217'

**Attachment F**

Maps and Cross Sections of Geologic Structure of Area:

Does not apply to Class II injection wells.

**Attachment G**

Geologic Data on Injection and Confining Zones:

Upper Confining Zone:

**Haystead 9 SWD**  
**EPA Permit Attachments and Appendices 2/21/11**

Name: Salina Gray Niagaran  
Depth: 2830'-2870'  
Thickness: 40 feet  
Lithologic Description: Argillaceous carbonate, dense, hard, gray, excellent barrier to flow.

**Injection Zone:**

Name: White Niagaran  
Depth: 2870'-3100'  
Thickness: 230 feet  
Lithologic Description: Dolomite, hard, sucrosic, vuggular, porous and permeable, brown and grey.

**Lower Confining Zone:**

Name: Clinton Shale  
Depth: 3,100'-3,210'  
Thickness: 110 feet  
Lithologic Description: Shale and tight argillaceous limestone and dolomite. Hard and dense. Excellent barrier to flow.

**Attachment H**

Operating Data:

Estimated maximum injection rate: 1200 bbl/day

Proposed maximum injection pressure:

Assumed frac gradient: 0.8 psi/ft  
Specific Gravity of Fluid: 1.193 (fresh water = 1)  
Upper Depth of Inj. Zone: 2,870 feet

$$P_{\max} = \{[0.8 - (0.433) \cdot (\text{SG of Inj. Fluid} + 0.05)] \cdot \text{Upper Depth of Inj. Zone}\} - 14.7$$

$$P_{\max} = \{[0.8 - (0.433) \cdot (1.193 + 0.05)] \cdot 2,870\} - 14.7$$

$$P_{\max} = 737 \text{ psig}$$

**Attachment I**

Formation Testing Program:

No formation testing is planned for this well.

**Haystead 9 SWD**  
**EPA Permit Attachments and Appendices 2/21/11**  
**Attachment J**

Stimulation Program:

A small acid job of about 3,000 gallons of 28% HCl acid will be used to stimulate the well and clean up any drilling damage.

**Attachment K**

Injection Procedures:

Injection into the subject well will be from a tank, equipped with a dump valve. The wellhead will be equipped with a check valve to prevent backflow. It is anticipated that the well will accept the estimated daily injection volume on a vacuum. However, if it becomes necessary to use a pump to dispose of fluids from the separator, an appropriately sized positive displacement pump will be installed. This pump will be equipped with a bypass downstream of the pump with a pressure relief valve that will be set to maintain an injection pressure below the maximum permitted injection pressure. This relief will be plumbed back into the tank and will be periodically tested to insure it is in good, working order.

**Attachment L**

Construction Procedures:

It is proposed to drill the West Bay 22 SWD as a dedicated disposal well. Attached are the State of Michigan forms that will be filed to permit the drilling of this well. They show casing and cementing details for all the strings. After the well is drilled, it is planned to drill out the casing shoe, clean out to TD and stimulate it with about 3,000 gallons of 28% HCl acid to remove drilling damage and improve injectivity. No other stimulation is planned. A packer will be run to about 2,850' and set. Treated fluid will be circulated into the annulus between the 5-1/2" production casing and the 2-7/8" tubing to inhibit corrosion and scavenge oxygen.

**Attachment M**

Construction Details:

Attached is a schematic showing the construction details of the well. The injection fluid will be sampled at the wellhead.

**Attachment N**

Changes in Injection Fluid:

**Haystead 9 SWD**  
**EPA Permit Attachments and Appendices 2/21/11**

Does not apply to Class II wells.

**Attachment O**

Plans for Well Failures:

Should any situation arise which would indicate a possible well failure, injection will be immediately discontinued and the source of the problem traced. If a loss of mechanical integrity occurs, the EPA will be immediately notified and plans to remediate the well will be prepared. Upon approval, the well will be repaired and a new, witnessed mechanical integrity test will be performed. Upon EPA approval, the well will then be placed back into service. A shut-in of the injection well will not pose a threat to USDW's, as long as mechanical integrity is maintained. Brine production from wells using this injection well will either be trucked in the interim or the wells will be shut-in until the well is placed back into service.

**Attachment P**

Monitoring Program:

The monitoring program for this well will consist of compliance with the EPA permit requirements of filing monthly, quarterly and annual reports.

**Attachment Q**

Plugging and Abandonment (P&A) Plan:

Attached is the plugging and abandonment plan for this well. Also attached is a detailed plugging cost estimate prepared by West Bay Exploration Company.

**Attachment R**

Necessary Resources:

Attached is information to verify that the financial resources are available to close, plug and abandon the well. **NEED TO ATTACH YET**

**Attachment S**

Aquifer Exemption:

An aquifer exemption is not being requested for this injection well.

**Haystead 9 SWD**  
**EPA Permit Attachments and Appendices 2/21/11**  
**Attachment T**

Existing EPA Permits:

West Bay Exploration has the following other existing EPA permits:

<b>Well Name</b>	<b>EPA Permit Number</b>	<b>State Permit Number</b>	<b>Location</b>	<b>Township</b>	<b>County</b>
Neeley 1-22	MI-025-25-2D-0037	39700	NW/SW/SE 22 1S 5W	Lee	Calhoun
Tel B2-25	MI-101-2D-C030	47875	NW/SE/NW 25 23N 15W	Bear Lake	Manistee

**Attachment U**

Description of Business:

West Bay Exploration Company is involved in the exploration, production and marketing of crude oil and natural gas.

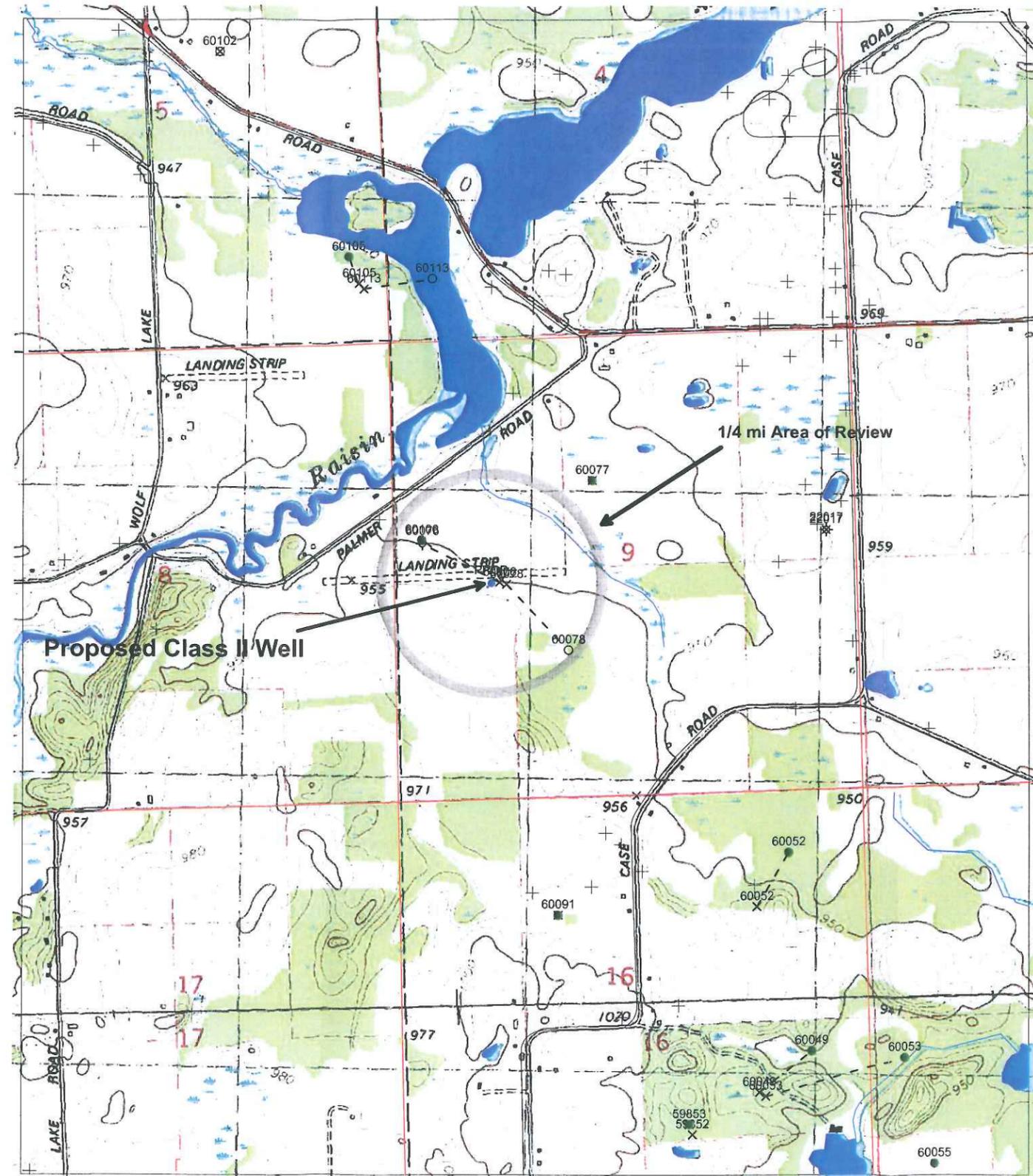
## **Attachment B**

# West Bay Exploration Company

## Haystead 9 SWD

### Attachment B

- ◆ Proposed Class II Well
- × Surface Loc of Oil and Gas Wells
- Oil Well BHL
- ◇ Dry Hole BHL
- Permitted Oil and Gas Well BHL
- +
- Section Lines
- Roads
- State Roads
- Water Features



Scale In Feet

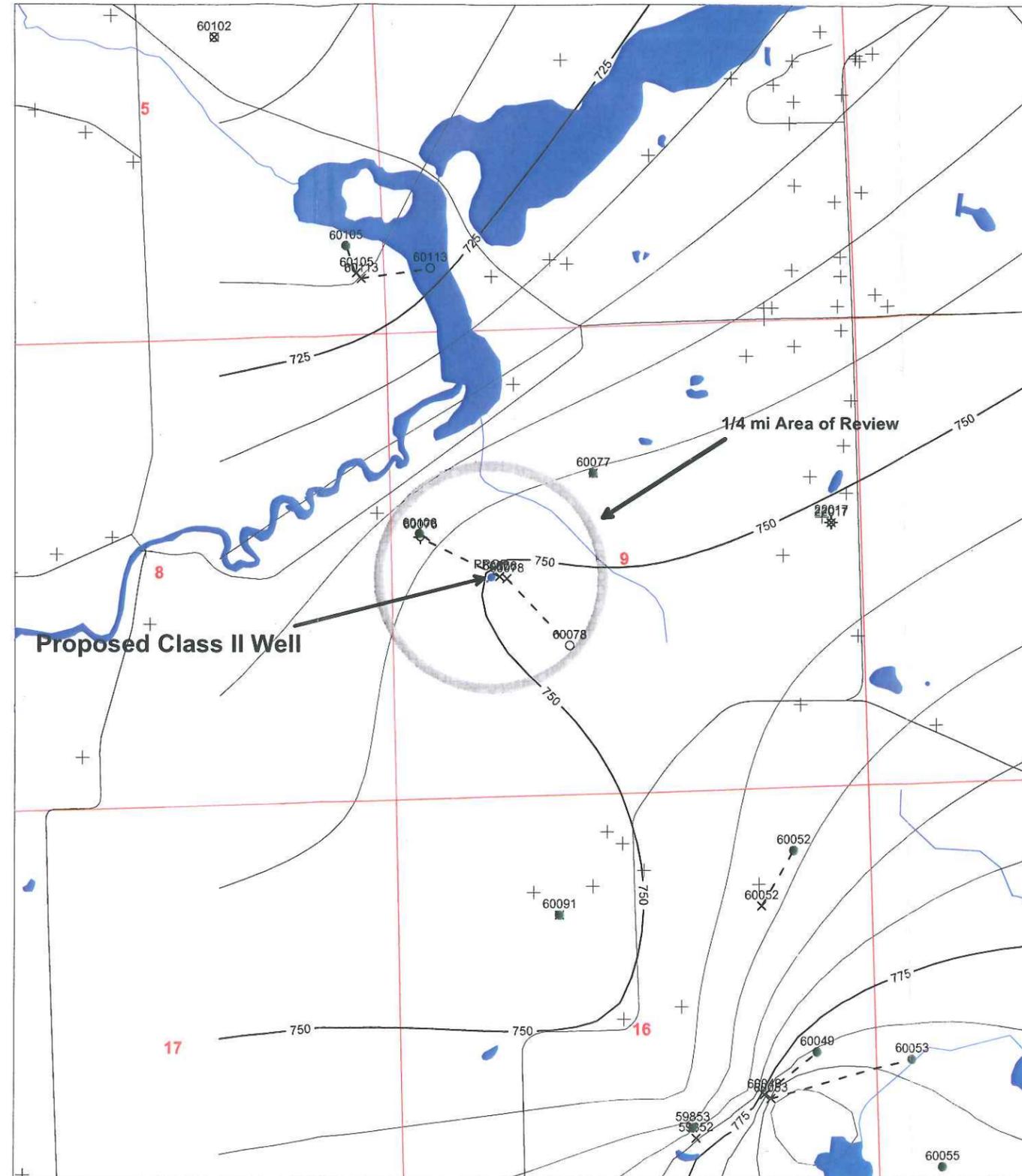


## **Attachment E**

# West Bay Exploration Company

## Attachment E Subsea Top of Base of USDW

-  Proposed Class II Well
-  Surface Loc of Oil and Gas Wells
-  Oil Well BHL
-  Dry Hole BHL
-  Permitted Oil and Gas Well BHL
-  Water Well
-  Section Lines
-  Roads
-  State Roads
-  Water Features



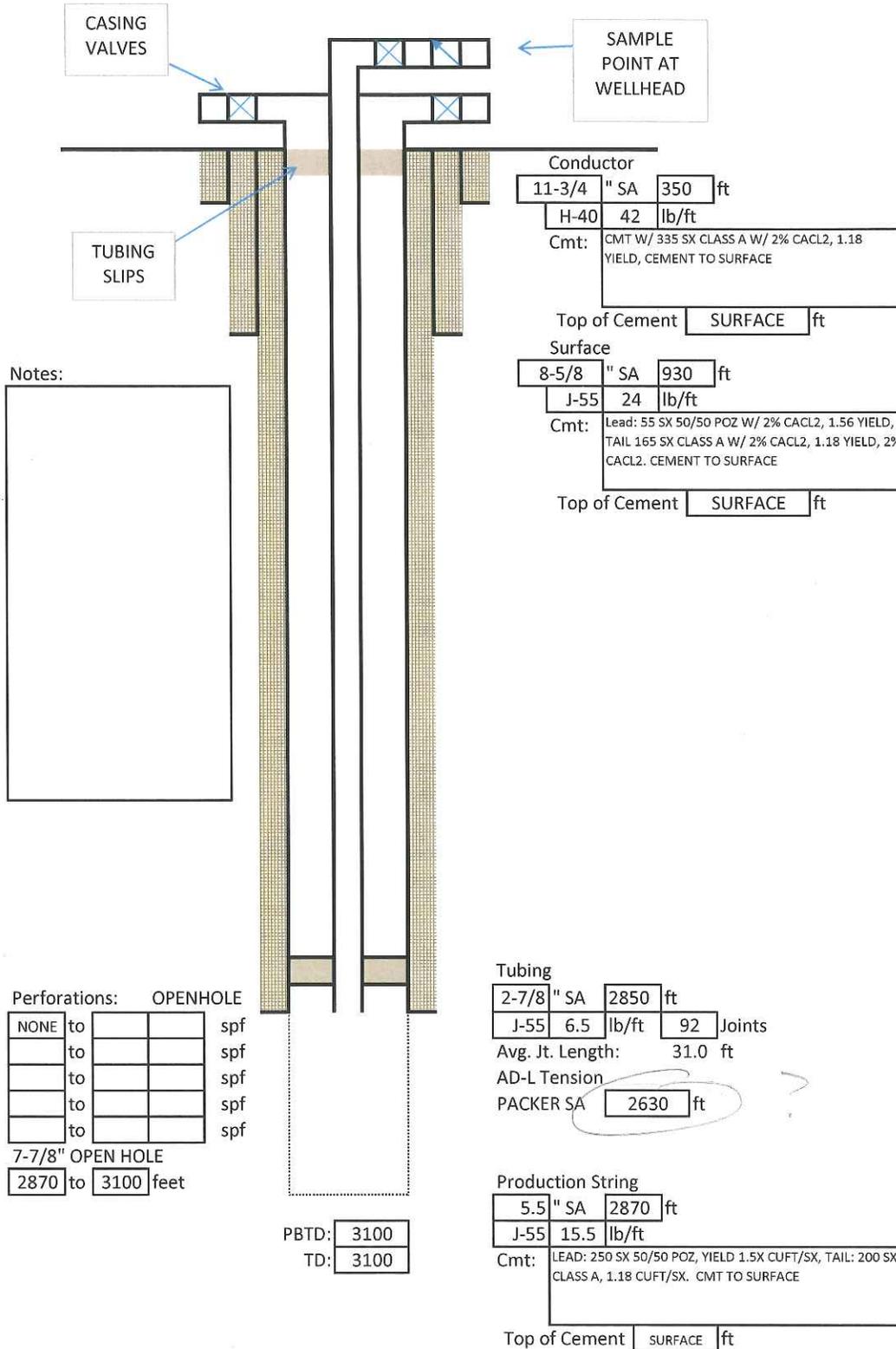
Scale In Feet



## **Attachment M**

### Wellbore Sketch

Well: HAYSTEAD 9 SWD KB: TBD Permit#: TBD  
 Operator: West Bay Exploration Company GL: TBD  
 Surf. Loc.: NE /Q NW /Q SW /Q Sec. 9 T 4S R 2E



## Attachment Q

ORIGINAL PLAN - SEE REVISED VERSION

**ATTACHMENT Q**

OMB No. 2040-0042 Approval Expires 1/31/05

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

**PLUGGING AND ABANDONMENT PLAN**

<b>Name and Address of Facility</b> Haystead 9 SWD	<b>Name and Address of Owner/Operator</b> West Bay Exploration Company 13685 West Bay Shore Drive Suite 200 Traverse City, MI 49684
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Locate Well and Outline Unit on Section Plat - 640 Acres <div style="border: 1px dashed black; width: 100px; height: 100px; margin: 5px auto; text-align: center;">N</div>	<b>State</b> Michigan	<b>County</b> Jackson	<b>Permit Number</b> <div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 30px; margin: 5px auto;"></div>
<b>Surface Location Description</b> NE 1/4 of NE 1/4 of NW 1/4 of SW 1/4 of Section 9 Township 4S Range 2E			
Locate well in two directions from nearest lines of quarter section and drilling unit <b>Surface Location</b> Location _____ 2475 ft. From (N/S) _____ S Line of Quarter Section And _____ 1123 ft. From (E/W) _____ W 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 _____ 1		Well Number 9 SWD	
Lease Name <u>HAYSTEAD</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
8-5/8	24	930	930	10-3/4	<input checked="" type="checkbox"/>	Dump Bailer Method
5-1/2	15.5	2,870	2,870	7-7/8	<input type="checkbox"/>	Two Plug Method
					<input checked="" type="checkbox"/>	Other

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)	3100 (2,850)	2,850	1,030	450			
Sacks of Cement To Be Used (each plug)	70	25	25	45			
Slurry Volume To Be Pumped (cu. Ft.)	83	30	30	53			
Calculated Top of Plug (ft.)	2,650	2650	830	0			
Measured Top of Plug (if tagged, ft.)	2,650	2650	830	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
3100	2870 OPEN HOLE		

Estimated Cost to Plug Wells	
RIG	4815 MISC COSTS 2700
CEMENT	6870 CONTING 1055
RETAINER	3000 TOTAL 21200
SITE COST	2760 SEE ATTACHED WORKSHEET

**CERTIFICATION**

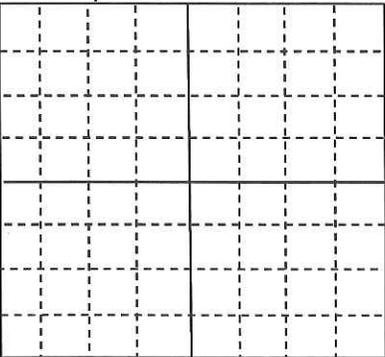
I certify under the penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.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

<b>Name and Official Title</b> (Please type or print) TIMOTHY J BROCK, AGENT	<b>Signature</b>	<b>Date Signed</b> 2/21/2011
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

**PLUGGING AND ABANDONMENT PLAN**

<b>Name and Address of Facility</b> Haystead 9 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 <div style="text-align:center"> <input type="checkbox"/> N                 </div> 	State Michigan	County Jackson	Permit Number
Surface Location Description NE 1/4 of NE 1/4 of NW 1/4 of SW 1/4 of Section 9 Township 4S Range 2E			
Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location _____ 2475 ft. From (N/S) _____ S _____ Line of Quarter Section And _____ 1123 ft. From (E/W) _____ W _____ 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 _____ 1		Well Number 9 SWD	
Lease Name <u>HAYSTEAD</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	
8-5/8	24	930	930	10-3/4	<input checked="" type="checkbox"/> Dump Bailer Method	
5-1/2	15.5	2,870	2,870	7-7/8	<input type="checkbox"/> Two Plug Method	
					<input checked="" type="checkbox"/> Other	

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)	2,850	2,850	1,030	350			
Sacks of Cement To Be Used (each plug)	70	25	25	45			
Slurry Volume To Be Pumped (cu. Ft.)	83	30	30	53			
Calculated Top of Plug (ft.)	2,650	2650	830	0			
Measured Top of Plug (if tagged, ft.)	2,650	2650	830	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			

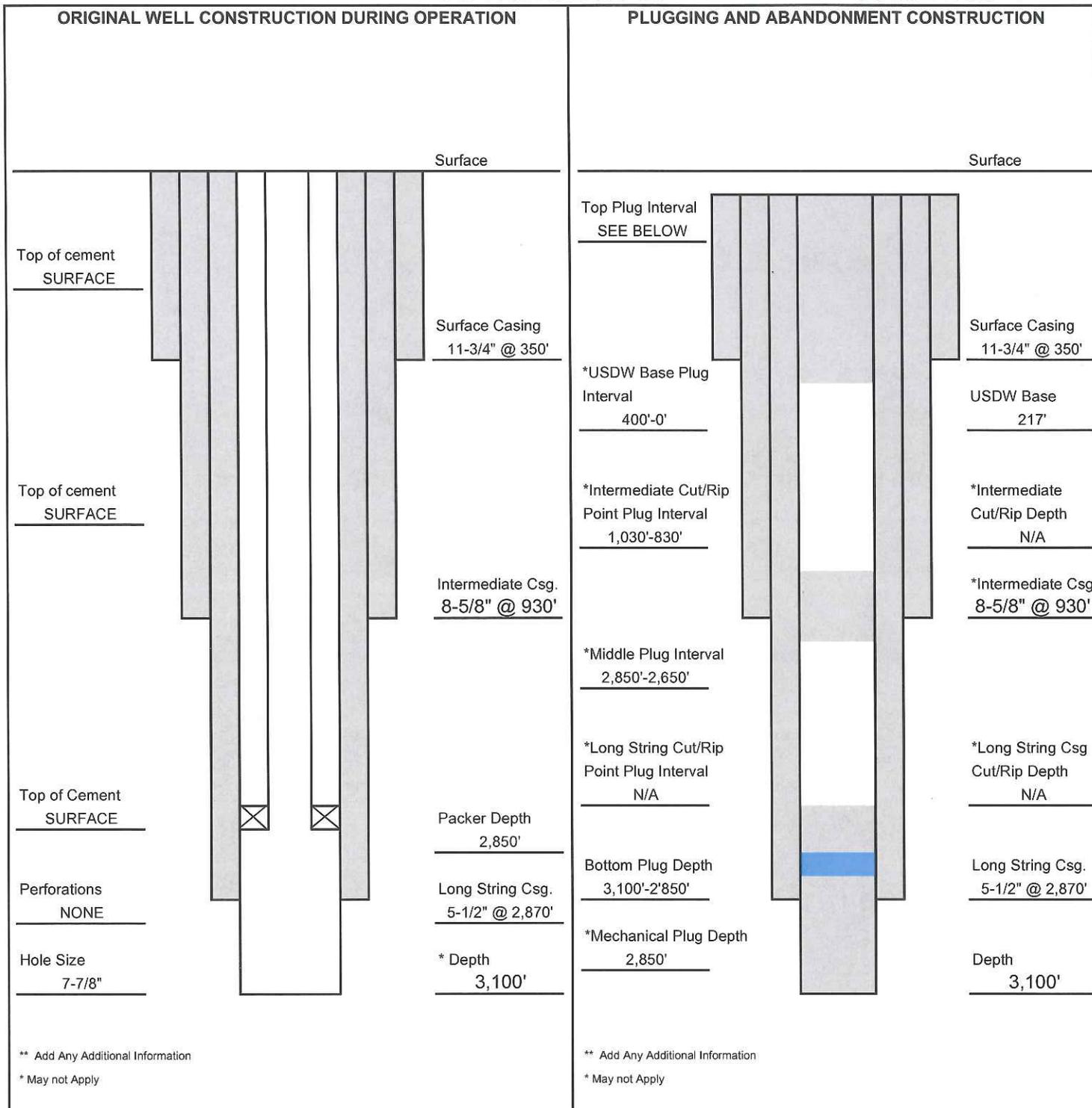
LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)			
From	To	From	To
3100	2870 OPEN HOLE		

Estimated Cost to Plug Wells			
RIG	4815	MISC COSTS	2700
CEMENT	6870	CONTING	1055
RETAINER	3000	TOTAL	21200
SITE COST	2760	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 TIMOTHY J BROCK, AGENT	Signature	Date Signed 2/21/2011
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**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	2,870	3,100	NIAGARAN

**COST ESTIMATE FOR PLUGGING AND ABANDONMENT**

Permittee:	West Bay Exploration Company
Well Name:	Haystead 9 SWD
EPA Permit Number:	Proposed Well
Party Providing Cost Estimate:	Brock Engineering, LLC
Total Cost Estimate:	\$21,700
Date of Cost Estimate:	1/21/2011

**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	2850	3100	INJECTION ZONE
ABOVE RETAINER	2600	2850	BASE OF LONG STRING
ACROSS DUNDEE INTERVAL (MDEQ REQUIRED)	1450	1800	DUNDEE
ACROSS BASE OF 8-5/8	830	1030	BASE OF INTERMEDIATE CASING
BASE OF USDW TO SURFACE	0	450	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	216	sacks @	10	per sack =	\$2,160
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				=	\$1,800

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:		=	\$20,675
Contingency:	5.0 %	=	\$1,034
INITIAL TOTAL		=	\$21,709
Inflation factor		=	1.00
<b>TOTAL AMOUNT, Rounded to \$100</b>		=	<b>\$21,700</b>

## **Attachment R**

# West Bay Exploration company

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

September 29, 2011

Michigan DNRE  
ATTN: Mr. Dave Davis  
PO Box 30256  
Lansing, MI 48909

RE: Haystead 9 SWD  
West Bay 22 SWD

Dear Mr. Davis:

Enclosed, please find performance bonds, each in the amount of \$25,000.00, for each of the referenced disposal wells.

West Bay Exploration is respectfully requesting permission to remove each of the disposal wells from our blanket bond, and have each well placed upon their own Bond for Conformance.

While each of these bonds is greater in amount than is required by the State of Michigan, it is close to the approximate amount of estimated plugging costs. (copy enclosed) Thank you so much for your help in this matter.

If you have any questions, please give us a call at 231-946-0200.

Sincerely,



Ann M Baker  
West Bay Exploration Company

RECEIVED

OCT 03 2011

UIC BRANCH  
EPA, REGION 5

**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**

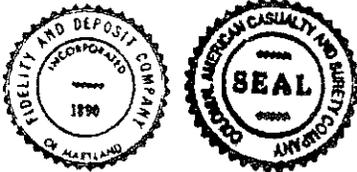
KNOW ALL MEN BY THESE PRESENTS: That the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, and the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, corporations of the State of Maryland, by FRANK E. MARTIN JR., Vice President, and GREGORY E. MURRAY, Assistant Secretary, in pursuance of authority granted by Article 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 Cathy HEILIGER, all of Tulsa, Oklahoma, EACH its 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, Janet L. JENKINS, Stuart F. DESELMS, William A. GRANT, Jeffrey W. HOLMES, Brigitte BURGESS, Michelle RICHIE, dated January 11, 2005.

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 16th day of January, A.D. 2007.

ATTEST:

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



*Gregory E. Murray*

*Frank E. Martin Jr.*

Gregory E. Murray Assistant Secretary

By:

Frank E. Martin Jr.

Vice President

State of Maryland }  
City of Baltimore } ss:

On this 16th day of January, A.D. 2007, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, came FRANK E. MARTIN JR., Vice President, and GREGORY E. MURRAY, 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.



*Maria D. Adamski*

Maria D. Adamski

Notary Public

My Commission Expires: July 8, 2011

## EXTRACT FROM BY-LAWS OF FIDELITY AND DEPOSIT COMPANY OF MARYLAND

"Article VI, Section 2. The Chairman of the Board, or the President, or any Executive Vice-President, or any of the Senior Vice-Presidents or Vice-Presidents specially authorized so to do by the Board of Directors or by the Executive Committee, shall have power, by and with the concurrence of the Secretary or any one of the Assistant Secretaries, to appoint Resident Vice-Presidents, Assistant Vice-Presidents and Attorneys-in-Fact as the business of the Company may require, or to authorize any person or persons to execute on behalf of the Company any bonds, undertakings, recognizances, stipulations, policies, contracts, agreements, deeds, and releases and assignments of judgements, decrees, mortgages and instruments in the nature of mortgages,...and to affix the seal of the Company thereto."

## EXTRACT FROM BY-LAWS OF COLONIAL AMERICAN CASUALTY AND SURETY COMPANY

"Article VI, Section 2. The Chairman of the Board, or the President, or any Executive Vice-President, or any of the Senior Vice-Presidents or Vice-Presidents specially authorized so to do by the Board of Directors or by the Executive Committee, shall have power, by and with the concurrence of the Secretary or any one of the Assistant Secretaries, to appoint Resident Vice-Presidents, Assistant Vice-Presidents and Attorneys-in-Fact as the business of the Company may require, or to authorize any person or persons to execute on behalf of the Company any bonds, undertakings, recognizances, stipulations, policies, contracts, agreements, deeds, and releases and assignments of judgements, decrees, mortgages and instruments in the nature of mortgages,...and to affix the seal of the Company thereto."

## CERTIFICATE

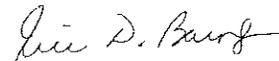
I, the undersigned, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, and the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that the Vice-President who executed the said Power of Attorney was one of the additional Vice-Presidents specially authorized by the Board of Directors to appoint any Attorney-in-Fact as provided in Article VI, Section 2, of the respective By-Laws of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, and the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990 and of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed."

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies,

this 27th day of September, 2011.



Assistant Secretary

September 1, 2005

Cynthia Buit  
West Bay Exploration Company  
13685 SW Bay Shore Dr., Ste 200  
Traverse City, MI 49684

RE: CNA Surety  
Surety Bond Policy No. 08784181

Dear Cynthia:

The Michigan Department of Environmental Quality blanket bond with a limit of \$250,000 has been cancelled with C.N.A. (bond # 265000022) and re-written with Fidelity and Deposit Company of Maryland. This bond is effective 09/16/2005 to 09/16/2006. You will find our invoice in the amount of \$8,125 enclosed.

If you have any questions regarding the bond renewal or the premium due, please contact our office.

Sincerely,

The Holmes Organisation, Inc.



Kris Robinson  
Customer Service Representative

KLR/365798



Copy - orig. m. 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)

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

By Brigitte Burgess

(Signature)

**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

EQP 7200-3 (rev. 1/2005)

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:

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(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:

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- (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:
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**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*

*Theodore G. Martinez*

Eric D. Barnes      Assistant Secretary      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

**Haystead 9 SWD  
EPA Permit Attachments and Appendices 2/21/11**

**Appendix 1**

Listing of Names and Addresses of Landowners Within the Area of Review:

See attached list that contains the names and addresses of the landowners within the AOR.

**Appendix 2**

State Historic Preservation Office Notification:

See attached letter.

**Appendix 3**

State Coastal Zone Management Notification:

Jackson County does not border the Great Lakes and as such is not within a Coastal Zone Management Area.

**Appendix 4**

Records of all State Drilling, Completion and/or Plugging Reports for all Wells Within the Area of Review:

All known State drilling, completion and plugging records of oil and gas wells and fresh water wells within the Area of Review have been attached.

**Appendix 5**

Physical and Chemical Characteristics and Description of the Source of the Injection Fluid:

Attached is an analysis of brine similar to that which will be injected. This brine was collected from the Lantis 2-30, which is a well operated by West Bay Exploration Company in the Napoleon Field. The following is a list of wells that will use this disposal well, if approved:

Well Name	State Permit Number	Location	Field	County
ADAMS 1-21	60144	NW/NE/SE 21 4S 2E	Napoleon	JACKSON
BRADLEY ET AL 1-27	60088	SW/NE/SE/27 4S 2E	Napoleon	JACKSON
CANNING 1-15	60013	SW/SW/SE 15 4S 2E	Napoleon	JACKSON
COCHRANE 1-13A	60112	NE/NE/SE 13 3S 1E	Napoleon	JACKSON
COCHRANE 3-13	60089	SE/SW/NE 13 3S 1E	Napoleon	JACKSON
CURRIE ET AL 1-34	60143	NE/SE/NW 34 4S 2E	Napoleon	JACKSON

**Haystead 9 SWD**  
**EPA Permit Attachments and Appendices 2/21/11**

CURTIS 1-32	60069	SE/SW/SE 32 3S 2E	Napoleon	JACKSON
CURTIS 1-5	60102	NE/SW/NE 5 4S 2E	Napoleon	JACKSON
DENSMORE 1-36	59269	SW/SE/SW/36 4S 3W	Napoleon	JACKSON
EIGHMEY 1-15	60014	SW/SW/SE 15 4S 2E	Napoleon	JACKSON
GOLOWIC 1-22	59955	SW/NW/NW 22 4S 2E	Napoleon	JACKSON
HARDCASTLE 1-26	60085	NE/SW/NW 26 4S 2E	Napoleon	JACKSON
HAUSER 1-32	59907	SE/SW/NE 32 3S 2E	Napoleon	JACKSON
HAYSTEAD 1-9A	60106	NE/NW/SW 9 4S 2E	Napoleon	JACKSON
HAYSTEAD 2-9	60077	NE/SE/NW 9 4S 2E	Napoleon	JACKSON
HAYSTEAD 3-9	60078	NE/NW/SW 9 4S 2E	Napoleon	JACKSON
HILDEN-ROVSEK ET AL 1-15	60053	SW/NE/SE 16 4S 2E	Napoleon	JACKSON
HILDEN-ROVSEK ET AL 1-16	59853	SW/NW/SE 16 4S 2E	Napoleon	JACKSON
HILDEN-ROVSEK ET AL 2-16	59852	SW/NW/SE 16 4S 2E	Napoleon	JACKSON
HILDEN-ROVSEK PART. 3-16	60049	SW/NE/SE 16 4S 2E	Napoleon	JACKSON
JENNINGS 1-32 HD1	59911	SW/SE/NW 32 3S 2E	Napoleon	JACKSON
LANTIS ET AL 1-29	59583	SE/NE/SE 30 3S 2E	Napoleon	JACKSON
LANTIS ET AL 2-30	60009	NW/NE/NE 30 3S 2E	Napoleon	JACKSON
LANTIS ET AL 1-30	59893	SE/NE/SE 30 3S 2E	Napoleon	JACKSON
LENNOX TRUST ET AL 1-15	60055	SW/SE/SW 15 4S 2E	Napoleon	JACKSON
MORSE TRUST 1-16	60091	NW/SE/NW 16 4S 2E	Napoleon	JACKSON
NAPOLEON FARMS ET AL 1-4	60113	SE/SE/SE 5 4S 2E	Napoleon	JACKSON
NAPOLEON FARMS ET AL 1-5	60105	NE/SE/SE 5 4S 2E	Napoleon	JACKSON
RICHARDSON ET AL 1-30	59940	SW/NW/NE 30 3S 2E	Napoleon	JACKSON
SHELL 1-35	APPD FOR	SE/NW/NW 35 4S 2E	Napoleon	JACKSON
SWANK 1-22	59954	NW/SE/NW 22 4S 2E	Napoleon	JACKSON
WALBY 1-27	60087	NE/NW/SW 27 4S 2E	Napoleon	JACKSON
WALBY 2-27	60086	NE/NW/SW 27 4S 2E	Napoleon	JACKSON
WAROLIN ET AL 1-30	59939	SW/NW/NE 30 3S 2E	Napoleon	JACKSON
WEST BAY & BOYD 1-27	60010	SW/SE/SW 22 4S 2E	Napoleon	JACKSON
WEST BAY & BOYD 2-27 HD1	60094	SW/SE/SW 22 4S 2E	Napoleon	JACKSON
WEST BAY 1-22	59996	NW/SE/SW 22 4S 2E	Napoleon	JACKSON
WHALEN BYRON ET AL 1-16	60052	SW/NE/NE 16 4S 2E	Napoleon	JACKSON
WHALEN BYRON ET AL 2-16 HD1	APPD FOR	NW/SE/NE 16 4S 2E	Napoleon	JACKSON
WILSON 1-27	60081	SW/SE/NE 27 4S 2E	Napoleon	JACKSON

Plus other later wells in this area, if it becomes necessary to dispose of water from them. This field is currently undergoing development and additional wells may be added to fully develop the field.

## Appendix 1

Haystead 9 SWD  
¼ mile area of review owners

Stanley and Valerie Bober  
10800 Palmer Rd  
Brooklyn, MI 49230

Harold and Harriet Haystead  
11451 Austin 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: Haystead 9 SWD  
T4S, R2E, Sec. 9, NE¼, NW¼, SW¼ (2,475' SL, 1,123' 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



RECEIVED JUL 23 2011

RICK SNYDER  
GOVERNOR

STATE OF MICHIGAN  
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY  
STATE HISTORIC PRESERVATION OFFICE

GARY HEIDEL  
EXECUTIVE DIRECTOR

July 18, 2011

JEFFREY MCDONALD  
EPA REGION 5  
77 WEST JACKSON BLVD WU 16J  
CHICAGO IL 60604

RE: ER11-451 Westshore Consulting Well Projects - Haystead 9 SWD, Section 9, T4S, R2E, Norvell Township, Jackson County (EPA)

Dear Mr. McDonald:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that no historic properties are affected within the area of potential effects of this undertaking.

The views of the public are essential to informed decision making in the Section 106 process. Federal Agency Officials or their delegated authorities must plan to involve the public in a manner that reflects the nature and complexity of the undertaking, its effects on historic properties and other provisions per 36 CFR § 800.2(d). We remind you that Federal Agency Officials or their delegated authorities are required to consult with the appropriate Indian tribe and/or Tribal Historic Preservation Officer (THPO) when the undertaking may occur on or affect any historic properties on tribal lands. In all cases, whether the project occurs on tribal lands or not, Federal Agency Officials or their delegated authorities are also required to make a reasonable and good faith effort to identify any Indian tribes or Native Hawaiian organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties per 36 CFR § 800.2(c-f).

This letter evidences EPA's compliance with 36 CFR § 800.4 "Identification of historic properties", and the fulfillment of EPA's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected".

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Brian Grennell Cultural Resource Management Specialist, at (517) 335-2721 or by email at [grennellb@michigan.gov](mailto:grennellb@michigan.gov). Please reference our project number in all communication with this office regarding this undertaking. Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Martha MacFarlane Faes  
Deputy State Historic Preservation Officer

for Brian D. Conway  
State Historic Preservation Officer

MMF:DLA:bgg

Copy: Wade VandenBosch, Westshore Consulting

RECEIVED

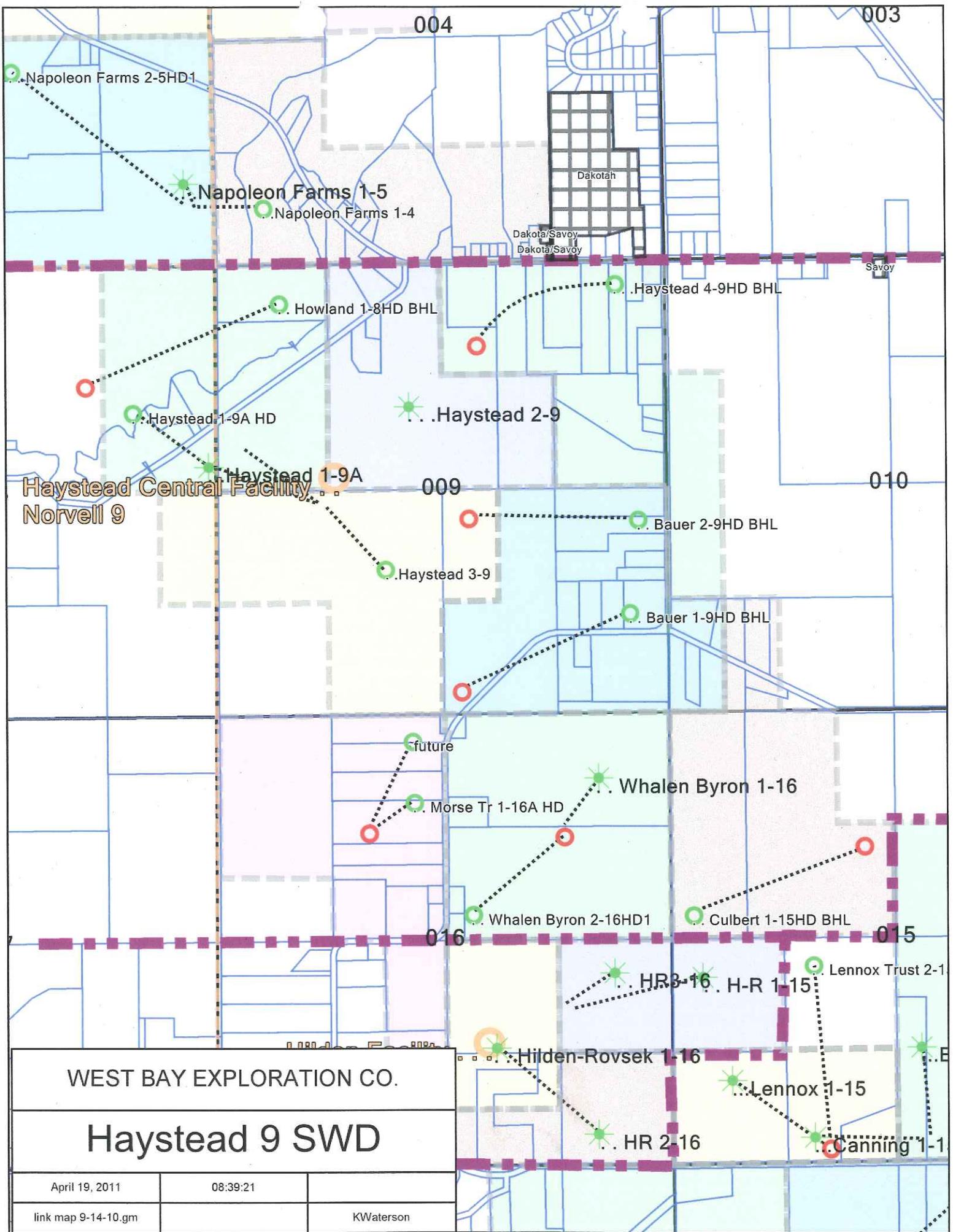
SEP 20 2011

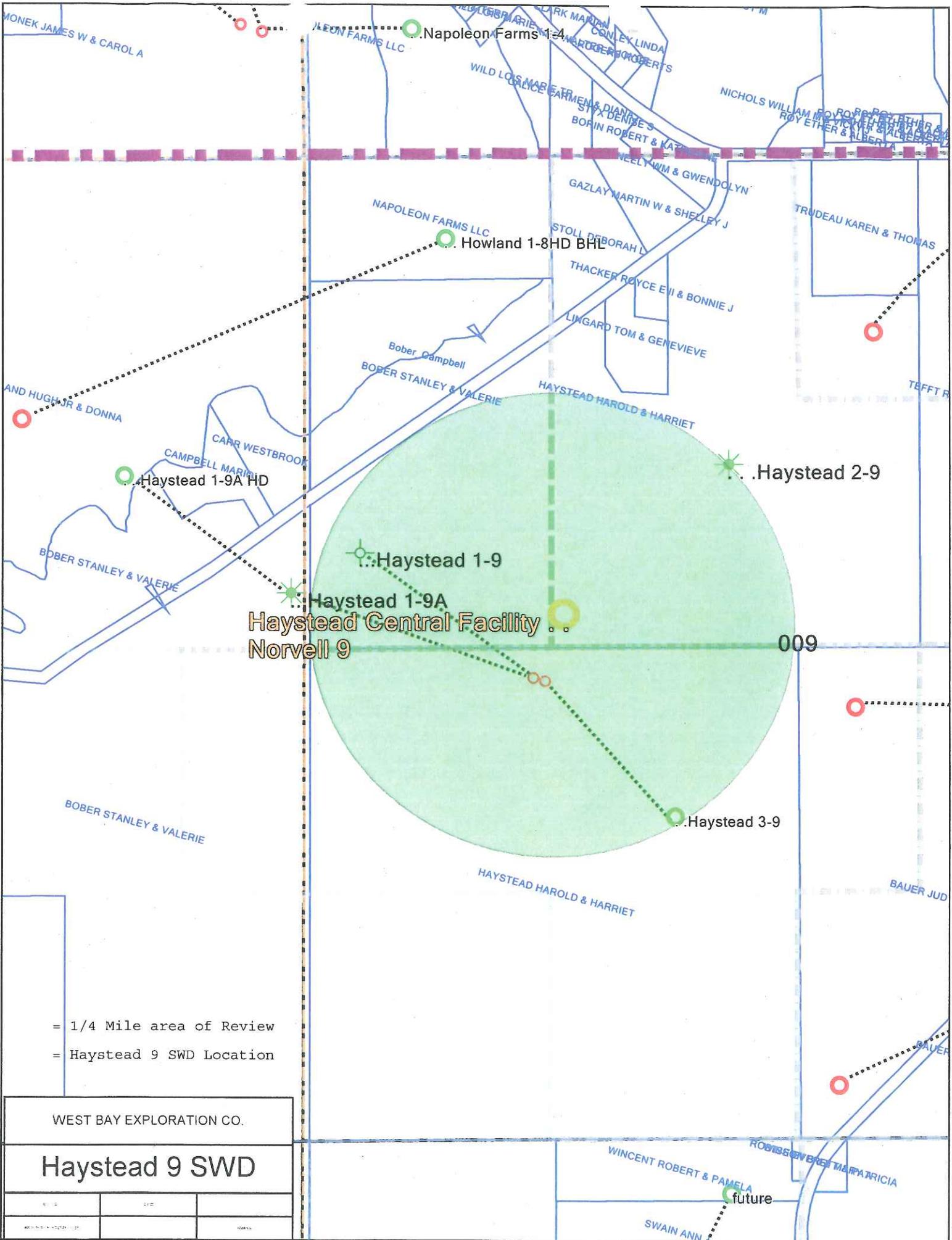
UIC BRANCH  
EPA, REGION 5



Equal  
Housing  
Lender

## **Appendix 4**





MONEK JAMES W & CAROLA

LEON FARMS LLC Napoleon Farms 1-4

WILKINS MARIAN CONLEY LINDA

NICHOLS WILLIAM ROY ROY ETHER & ALBERTA

WILD LOS MAR FARMEN & DIANE STYX DENISE S BOBIN ROBERT & KATHY NEELY WIM & GWENDOLYN

Howland 1-8HD BHL

GAZLAY MARTIN W & SHELLEY J

TRUDEAU KAREN & THOMAS

AND HUGH JR & DONNA

Haystead 1-9A HD

Bober Campbell BOBER STANLEY & VALERIE

HAYSTEAD HAROLD & HARRIET

TEFFT R

CAMPBELL MARIAN CARR WESTBROOK

Haystead 1-9

Haystead 2-9

Haystead 1-9A  
Haystead Central Facility  
Norvell 9

009

BOBER STANLEY & VALERIE

Haystead 3-9

BOBER STANLEY & VALERIE

HAYSTEAD HAROLD & HARRIET

BAUER JUD

= 1/4 Mile area of Review  
= Haystead 9 SWD Location

WEST BAY EXPLORATION CO.

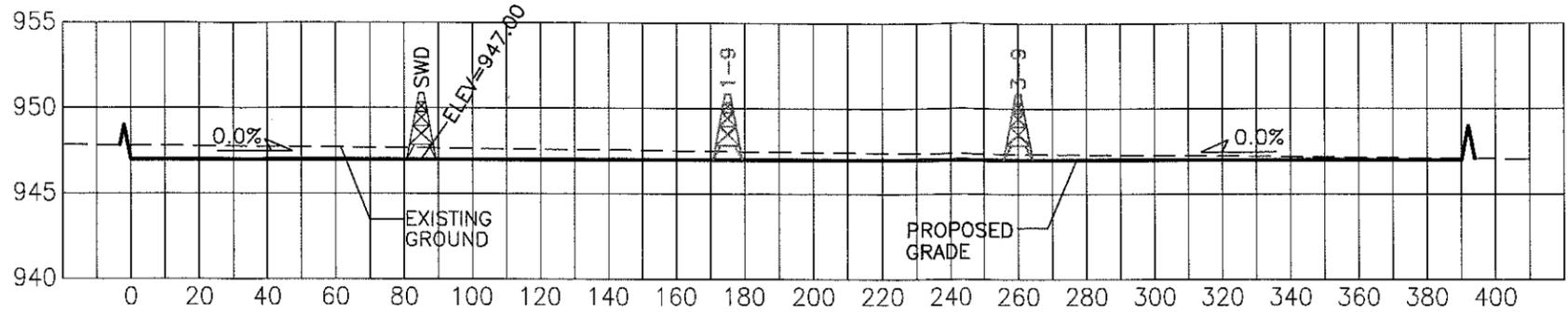
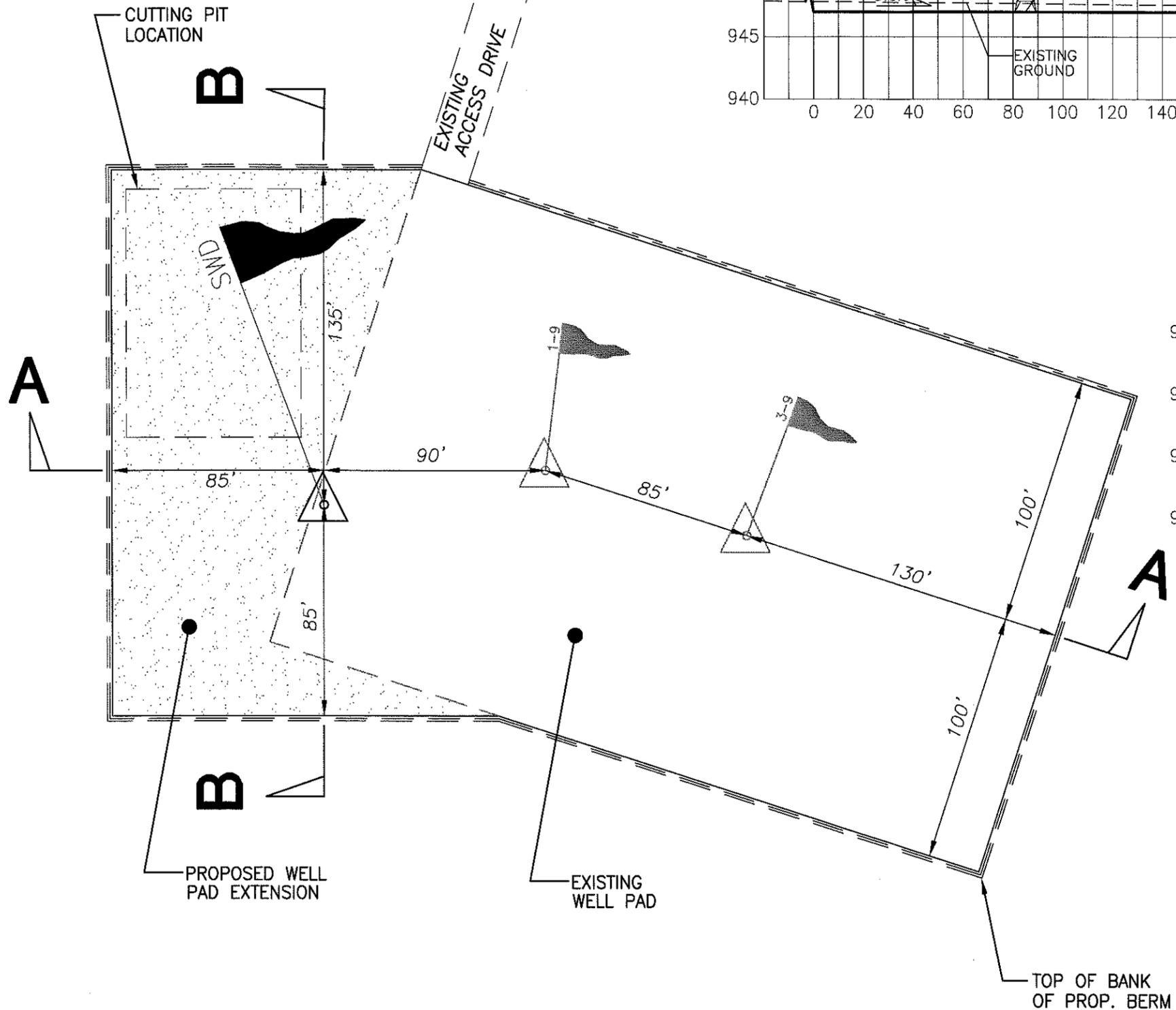
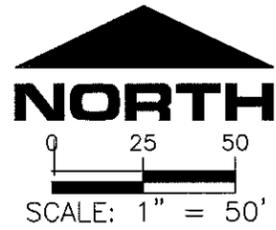
# Haystead 9 SWD


WINCENT ROBERT & PAMELA

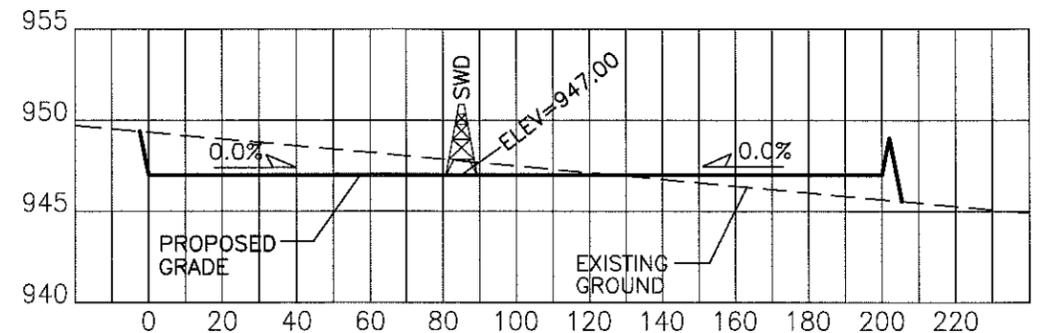
ROBISON BRET MARPA PRICIA

future

SWAIN ANN



**SECTION A-A**  
 HOR SCALE: 1"=50'  
 VERT SCALE: 1"=10'



**SECTION B-B**  
 HOR SCALE: 1"=50'  
 VERT SCALE: 1"=10'



www.WestshoreConsulting.com	
2534 Black Creek Road Muskegon, MI 49444 (231) 777-3447	250B Washington Avenue Grand Haven, MI 49417 (616) 844-1260
P.O. Box 7 Manistee, MI 49660 (231) 920-5818	
<b>WEST BAY EXPLORATION COMPANY</b> 13685 South West Bay Shore Dr. Traverse City, MI. 49684	Checked: SW Date: 3/16/11 Drawn by: WAV Date: 3/16/11 File No.: 323-130 Figure: <b>3</b>
<b>HAYSTEAD 9 SWD WELL CROSS SECTIONS</b>	



State of Michigan  
 Department of Environmental Quality  
 Geological and Land Management Division  
 P.O. Box 30256  
 Lansing, MI 48909-7756

**PERMIT TO**

**DRILL AND OPERATE**     **DEEPEN AND OPERATE**

GRANTED UNDER THE PROVISIONS OF  
 Part 615 Supervisor of Wells, Act 451, PA 1994, as amended

Violation of and/or non-compliance with the provisions of this act or its rules, instructions or orders of the supervisor, or these permit conditions may result in penalties. This permit includes as requirements all the operations and methods proposed by the applicant in the application to drill, unless rejected or altered by the DEQ. This permit is also subject to the general and specific conditions identified on this page and/or attached to it. Initiation of any work under this permit confirms the permittee's acceptance and agreement to comply with its terms and conditions.

PERMIT NO. <b>60425</b>	ISSUE DATE 9/8/2011	EXPIRATION DATE 9/8/2013
WELL NAME AND NUMBER <b>HAYSTEAD 9 SWD</b>		
FORMATION AT TOTAL DEPTH SALINA	COMPLETION FORMATION SALINA	
PERMITTED TOTAL DEPTH (MEASURED) 3100 ft.	PERMITTED TOTAL DEPTH (TVD) 3100 ft.	
TYPE OF PERMIT Brine Disposal Well	API NUMBER 21-075-60425-00-00	
ISSUED TO: WEST BAY EXPLORATION CO STE 200 13685 S WEST BAYSHORE DR TRAVERSE CITY, MI 49684		

LOCATION AND FOOTAGES: SHL: NE NW SW, SEC 9, 4S 2E, NORVELL TWP, JACKSON CO.  
 2459 FT. FROM S AND 1122 FT. FROM W SECTION LINE.

**CASING AND SEALING REQUIREMENTS**

HOLE DEPTH	HOLE DIA.	CASING O.D.	WT./FT.	GRADE	CONDITION	DEPTH (M.D.)	SACKS CMT	CEMENT TOP	MUD WT.
350'	14 3/4"	11 3/4"	42	H-40	NEW	350'	335	SURFACE	8.4
900'	10 5/8"	8 5/8"	24	J-55	NEW	900'	220	SURFACE	8.5
2870'	7 7/8"	5 1/2"	15.5	J-55	NEW	2870'	450	SURFACE	9.7
3100'	4 3/4"	Open Hole				3100'			9.7

**SPECIFIC PERMIT CONDITIONS**

1. Earthen berms and silt fence shall be used around pad perimeter to prevent off-site sedimentation.
2. An existing 5" PVC temporary water well at SW corner of pad can be used for onsite freshwater. It shall not be used for drinking water and shall be plugged upon well completion.
3. Pit will be in-ground and used as working pit. Pit contents to be solidified and cuttings hauled to an approved landfill.
4. Area Geologist - Kristy Shimko 517-373-9409 - is to be notified prior to pit excavation.
5. Well control equipment shall be installed on the 11 3/4" and 8 5/8" casing. All well control features shall be tested according the Rule 324.406.
6. Pursuant to RULE 407(7)(b), drilling fluids generated or utilized while drilling below the base of the Detroit River Anhydrite SHALL NOT be placed in the lined pit. Cuttings and the solid fraction of drilling muds generated or utilized while drilling below the base of the Detroit River Anhydrite may be placed in the lined reserve pit if they DO NOT contain free liquids as determined by the US EPA, paint filter test, method 9095, September 1986 edition. Drilling muds and cuttings which contain weighting or lost circulation materials, and which cannot reasonably be treated to eliminate free liquids may be placed in the reserve pit if approved by the authorized representative of the supervisor.
7. Copies of all Electric logs run on this well shall be submitted to the Lansing Office of the Geological Survey on paper and electronic format. Log ASCII Standard (LAS) and Tag Image File Format (TIF) files shall be submitted on a compact disc. These files should be named using the well's permit number with the log type name.

**GENERAL PERMIT CONDITIONS**

1. The permittee is required to give notice to public utilities in accordance with Act 53, PA 1974, M.C.L. 460.701-460.718.
2. This permit does not convey property rights in either real estate or material, neither does it authorize any injury to any public or personal property.
3. This permit does not preclude the necessity of obtaining other local, state, or federal permits which may apply to the drilling or operation of this well.
4. All trash and garbage shall be removed from the drill site at the completion of drilling, no garbage may be buried on site.
5. This permit allows a well containing hydrogen sulfide to be drilled and tested subject to the Hydrogen Sulfide Management Provisions of the Rules promulgated under Part 615, 1994 PA 451, as amended. Contact the Air Quality Division prior to producing a sour well to determine if an Air Quality Installation or Operation Permit is required.

OFFICE TO BE NOTIFIED PRIOR TO PREPARING LOCATION  
 AND PRIOR TO MOVING IN DRILLING EQUIPMENT

Lansing (517) 241-1515

PERMIT ISSUED FOR THE SUPERVISOR OF WELLS BY



## APPLICATION FOR PERMIT TO:

DRILL  DEEPEN  CONVERT  
AND OPERATE A WELL

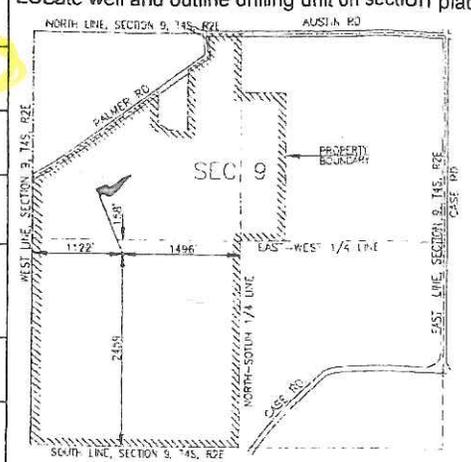
By authority of Part 615 or Part 625 of Act 451 PA 1994, as amended.  
Non-submission and/or falsification of this information  
may result in fines and/or imprisonment.

1a. Part 615 Supervisor of Wells  
 Oil and Gas  
 Brine Disposal  
 Hydrocarbon Storage  
 Injection for Secondary Recovery

1b. Part 625 Mineral Wells  
 Waste Disposal  
 Brine Production  
 Processed brine disposal  
 Storage  
 Test, fee sched. on rev.

1c. Fee enclosed  
 Yes  
 No, revision of application  
 No, leg of horiz drainhole

2. List all previous permit numbers		3. Fed. ID. No. (do not use SSN) 38-2348162		Locate well and outline drilling unit on section plat							
4. Conformance Bond <input checked="" type="checkbox"/> Blanket <input type="checkbox"/> Single well		5. <input type="checkbox"/> Attached <input checked="" type="checkbox"/> On file		6. Bond number 08784181		7. Bond amount 250,000					
8. Applicant (name of permittee as bonded) West Bay Exploration Company				9. Address 13685 South West Bay Shore Drive Suite 200 Traverse City, MI 49684							
				Phone (231) 946-0200		I authorize DEQ 4 additional days to process this application. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
10. Lease or well name (be as brief as possible) Haystead				Well number 9 SWD							
11. Surface owner Harold and Harriet Haystead											
12. Surface location NE 1/4 of NW 1/4 of SW 1/4 of Sec 9 T4S R2E Township Norvell County Jackson											
13. If directional, bottom hole location 1/4 of 1/4 of 1/4 of Sec T R Township County											
14. The surface location for this well is 2459 feet from nearest (N/S) S section line AND 1122 feet from nearest (E/W) W section line											
15. Is this a directional well? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, complete line 15. The bottom hole location for this well is feet from nearest (N/S) section line AND feet from nearest (E/W) section line											
16. The bottom hole location (whether straight or directional) of this well is feet from nearest (N/S) drilling unit line AND feet from nearest (E/W) drilling unit line											
17. Kind of tools <input checked="" type="checkbox"/> Rotary <input type="checkbox"/> Cable <input type="checkbox"/> Combination		18. Is sour oil or gas expected? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> H <sub>2</sub> S Cont. plan enclosed		19. Base of lowest known fresh water aquifer Formation Michigan Marshall Depth 200+/-							
20. Intended total depth MD 3100' TVD		21. Formation at total depth Salina A1/Niagaran		22. Producing/injection formation(s) Salina A1/Niagaran		23. Objective pool, field, or roject Napoleon/Norvell					
24. PROPOSED DRILLING, CASING AND CEMENTING AND SEALING PROGRAM											
HOLE		CASING				CEMENT		MUD			
Depth (MD)	Geol. Formation	Bit Dia.	O.D. Size	Wt/Ft	Grade Condition	Depth (MD)	Sacks	T.O.C.	W.O.C	Wt.	Vis.
350'	Shales	14 3/4"	11 3/4"	42#/ft	H-40 New	350'	335	Surf	12	8.4	50+
930'	Coldwater Sh	10 5/8"	8 5/8"	24#/ft	J-55 New	930'	220	Surf	12	8.5	40+
2870'	Niagaran	7 7/8"	5 1/2"	15.5#/ft	J-55 New	2870'	450	Surf	24	9.7	28+
3100'	Niagaran	7 7/8"	N/A		Open Hole	3100'	-	-	-	9.7	28+
25. DETAIL CEMENTING PROGRAM. IDENTIFY ALL CEMENT CLASSES, ADDITIVES, AND VOLUMES (IN CU. FT.) FOR EACH CASING STRING. Surface AV=152 cu ft-335 sx Class A w/2% CaCl, (1.18 yield) cement to surf (see attached calculations) Intermediate AV=214 cu ft- 55 sx 50/50 POZ w/2% CaCl <sub>2</sub> , (1.56 yield), Tail 165 sx Class A w/2% CaCl-Cement to Surf Production/Injection AV=515 cu ft- Lead-250 Sx 50/50 POZ w/2% CaCl (1.56 yield), 200 sx CIA (1.18 yield) Cement to Surf											
26. Send correspondence and permit to Name West Bay Exploration Company E-mail anni@wbeco.net Address 13685 South West Bay Shore Drive, Suite 200, Traverse City, MI 49684 Phone (231) 946-0200											
CERTIFICATION "I state that I am authorized by said applicant. This application was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."						Enclose permit fee of \$300 for all Part 615 wells; \$2,500 for a Part 625 waste disposal well; or \$500 for a brine production, processed brine disposal, or storage well. Make checks payable to State of Michigan. DEQ Cashier use only.					
27. Application prepared by (print or type) Ann M Baker Phone (231) 946-0200											
28. Signature <i>Ann M Baker</i> Date 7/20/11											
Office of Geological Survey Use Only											
Permit number	API number	Date issued	Owner number								



RECEIVED

OCT 03 2011

UIC BRANCH  
EPA, REGION 5

**SURVEY RECORD OF WELL LOCATION**

This information is required by authority of Part 615 Supervisor of Wells, or Part 625 Mineral Wells, of Act 451 PA 1994, as amended, in order to obtain a drilling permit.

Applicant West Bay Exploration Company
Well name and number Haystead 9 SWD

1a. Surface location	Township	County
NE 1/4 of NW 1/4 of SW 1/4 of section 9 T 4S R 2E	Norvell	Jackson
1b. If this is a directional well, bottom hole location will be	Township	County
1/4 of 1/4 of 1/4 of section T R		

**Instructions:** Outline drilling unit for oil/gas wells (Part 615) or property boundary for mineral wells (Part 625) and spot well location on plat shown. Locate the well in two directions from the nearest section, quarter section, and unit (or property, Part 625) lines.

2. The surface location is

2459 ft. from nearest (N/S) S section line

1122 ft. from nearest (E/W) W section line and

158 ft. from nearest (N/S) N quarter section line

1496 ft. from nearest (E/W) E quarter section line

3. Bottom hole will be (if directional)

ft. from nearest (N/S) section line

ft. from nearest (E/W) section line and

ft. from nearest (N/S) quarter section line

ft. from nearest (E/W) quarter section line

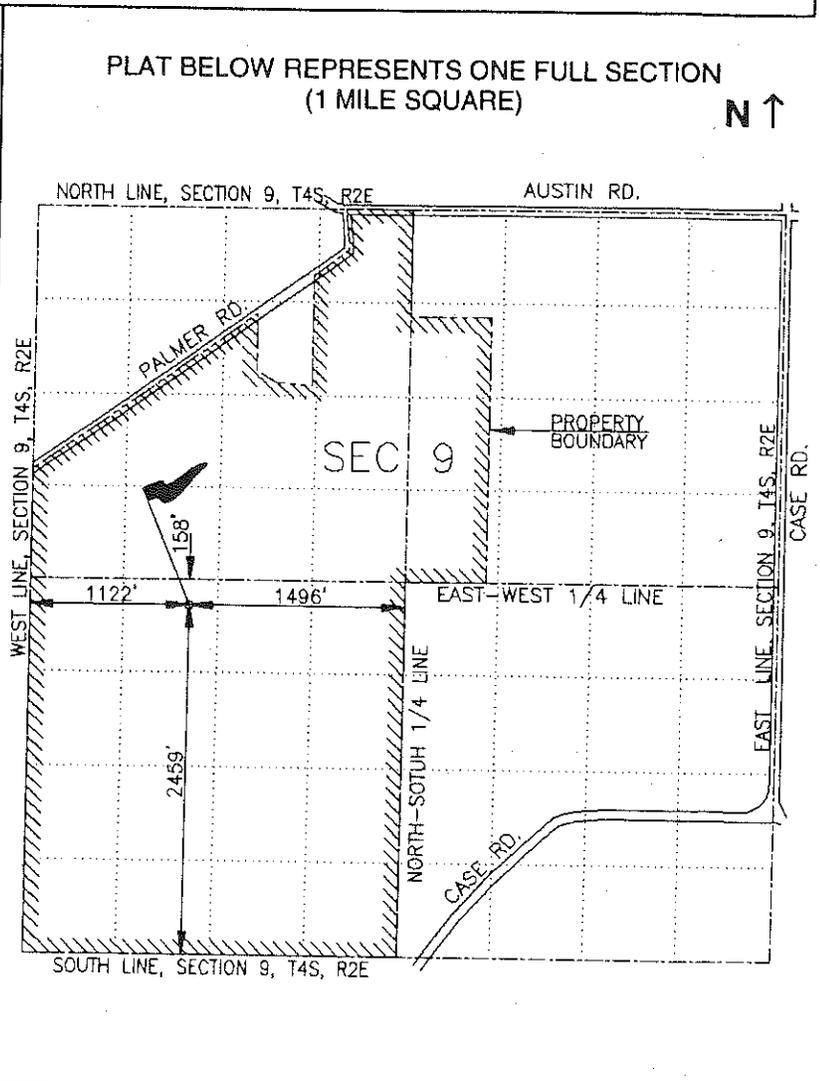
4. Bottom hole will be (directional or straight)

ft. from nearest (N/S) drilling unit line

ft. from nearest (E/W) drilling unit line

5. Show access to stake on plat and describe if it is not readily accessible. Go south on I-127 to M-50. Go east on M-50 8 miles to Village of Napoleon, continue east for 2.5 miles on Austin Road. Go south and west on Palmer Road for 0.8 miles to farm lane to south. Take farm lane south for 0.3 miles, then east on farm lane 0.25 miles to well site.

6. Zoning  Residential, effective date \_\_\_\_\_  
Initial date of residential zoning \_\_\_\_\_  
 Other Agricultural



ON SEPARATE PLAT OR PLOT PLAN, LOCATE, IDENTIFY AND SHOW DISTANCES TO:

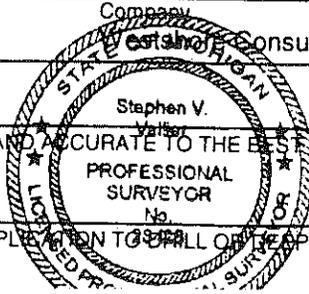
- A. All roads, power lines, buildings, residences, fresh water wells, and other man-made features, within 600 feet of the stake.
- B. All lakes, streams, wetlands, drainage-ways, floodplains, environmentally sensitive areas, natural rivers, critical dune areas, and threatened or endangered species within 1320 feet of the stake.
- C. All type I and IIa public water supply wells within 2000 feet and all type IIb and III public water supply wells within 800 feet of the well stake.

Name of individual who surveyed site Stephen V. Vallier, P.S.	Company Cartledge Consulting	Date of survey 09/28/2010
Address 2534 Black Creek Road, Muskegon, MI 49444		Phone 231-777-3447

I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Signature of licensed surveyor (affix seal) *Stephen V. Vallier*

Date 3/17/11





# 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, CO3 <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	