

Attachment 7

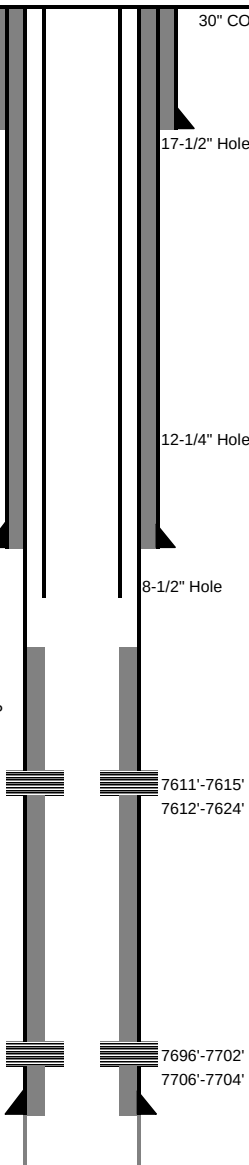
KALIUM 2082
SE NW SW Sec 26 T17N R9W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

PERMIT No. 00438
API No. 21-133-00438-70-00
GL @ 1135.6'
KB @ 1149.5'
WELL COMPLETION DATE: 10/26/1997
PLUGGING COMPLETION DATE:

UPDATED APRIL 2014 BY JLT

3877'-3944' TVD DUNDEE
3944'-3973' TVD REED CITY ANHYDRITE
3973'-4124' TVD REED CITY DOLOMITE

7480'-7750' TVD A-1 EVAP



SURFACE CASING

13 3/8", 48#/ft
SET @ 893' KB
900 SX CLASS A

INTERMEDIATE CASING

9-5/8", 40#/ft
SET @ 5139' KB
2425 SX CLASS A

PROD. CASING

7", 23#/ft
SET @ 7715' KB
680 SX CLASS H

KALIUM 2082 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
9/21/1997	SPUD.
10/22/1997	DRILLING COMPLETED.
	13 3/8" SET AT 925'; 715 SX CLASS A 9 5/8" SET AT 5205'; 2675 SX CLASS A 7" SET AT 7755'; 575 SX CLASS H
10/26/1997	WELL COMPLETED.
11/10/2007	WELL CASING REPAIR STARTED
12/5/2007	WELL CASING REPAIR COMPLETED. 4-1/2" CASING RUN TO 6000'.
8/31/2009?	LOST MECHANICAL INTEGRITY. PULL 4-1/2" CASING. RAN WIRLINE SET BRIDGE AND SAT DOWN AT 5703'. RAN 6" STRING MILL AND TRIED TO CLEAN OUT 7" CASING. COULD NOT GET BY 5703'. RAN 6" FLAT BOTTOM MILL AND TRIED MILLING THROUGH. COULD NOT GET BY 5703'. RAN 1-11/16" CCL. LOGGED FROM 5650'-5800'. APPEARS TO BE DAMAGED FROM 5703'-5714'. RAN 3-1/8" CCL AND COULD NOT GET BY 5703'. RAN 5-1/2" IMPRESSION BLOCK AND SAT DOWN AT 5703'. ONLY MARKS ON THE OUTSIDE OF THE BLOCK. REQUEST SETTING A BRIDGE PLUG @ 5675' AND P & A WELL.



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - OFFICE OF GEOLOGICAL SURVEY

APPLICATION TO:

- ☐ CHANGE WELL STATUS OR
☒ PLUG AND ABANDON WELL

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 or Gas Well ☒ Part 625 Mineral Well

Change of well status requested to:

- ☒ Plug back ☐ Perforate ☐ Temporarily abandon
☐ Convert to ☐ Other

Last production/injection rate and type of fluid

8/31/2009 300/GPM Brine Water

Brief description of project

Set bridge plug @ 5675' Set 100 Sack Class A plug on top of bridge plug Continue plugging to 4741' Cut and pull 7" casing and then plug to surface.

Work to be done by

Mosaic Potash Hersey

Permit number

438

Type of well

Solution Mining

API number

MI-133-3G-A002

Name and address of permittee

Mosaic Potash Hersey
1395 135th Ave
Hersey, MI

Well name and number

Kalium 2082 (Mosaic Potash)

Well location

SE 1/4 of NW 1/4 of NW 1/4 Section 26 T 17N R 9W

Township

Hersey

County

Osceola

Date drilling completed

1998

Date last produced/utilized

8/31/2009

Starting date

11/1/2010

CASING AND CEMENTING RECORD

Hole dia	Casing dia & wt/ft	Depths set	Cement quantity, type, additives	Cement top	Perforations
30"	30"	90'	Driven		
17 1/2"	13/3/8"	893'	900 Sacks Lite/A	Surface	
12 1/4"	9 5/8"	5139'	2425 Sacks Lite/A	Surface	
8 1/2"	7"	7715'	680 Sacks Poz/H	4950'	7612'-7624'

Formation record (formation and depth of top, oil, gas and water shows, etc.):

formation depth

Detail proposed procedures:

Set CIBP @ 5675' Set 100 Sack Class A plug on top of the bridge plug. Set 75 Sack Class A plug @ 5147'. Cut and pull 7" casing from 4741' to surface Set 180 Sack 50/50 Poz plugs every 500' from 4741' to 300' Set 108 Sack Class A plug from 300' to surface. Make certain of cement to surface and cut and cap 9 5/8" stub

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OCT 26 2010

DNRE / ERMD
OFFICE OF GEOLOGICAL SURVEY

Name/signature (authorized representative):

William C. Hicks

Date:

10/18/2010

FOR OFFICE OF GEOLOGICAL SURVEY USE ONLY

DEQ additional requirements:

NOTIFY MARK SMITH (231 876 4434) AND RAY VUGRINOVICH (517 241 1532) AT LEAST 48 HOURS BEFORE PLUGGING BEGINS.

☐ Yes ☐ No ☒ Not applicable Production tests to commence within 10 days of completion and to be filed

☒ Yes ☐ No Service company records are to be filed

Approved by DEQ:

Raymond Vugrinovich

Office:

LANSING

Approval date:

11/9/2010

Termination Date:

11/9/2011

Submit original and three (3) copies of this application to the District Office within 60 days of change of well status
Note: Three copies of Record of Well Plugging or Change of Well status (EQP 7200-8) and any requested service company records are to be filed within 60 days of completion at the District Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D C. 20460

PLUGGING AND ABANDONMENT PLAN

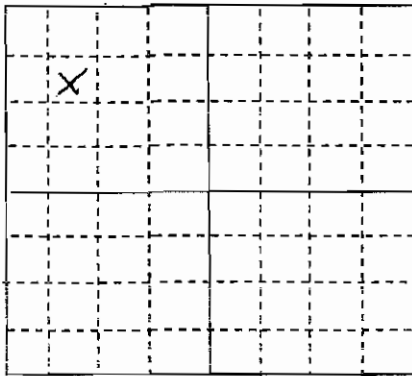
Name and Address of Facility

Mosaic Potash Hersey
1395 135th Ave
Hersey, MI 49639

Name and Address of Owner/Operator

Mosaic Potash Hersey
1395 135th Ave
Hersey, MI 49639

Locate Well and Outline Unit on
Section Plat - 640 Acres



State

MI

County

Osceola

Permit Number

MI-133-3G-A002

Surface Location Description

SE 1/4 of NW 1/4 of NW 1/4 of 1/4 of Section 26 Township 17N Range 09W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

Location 1158 ft From (N/S) N Line of Quarter Section

And 1319 ft From (E/W) W Line of Quarter Section

TYPE OF AUTHORIZATION

- ☐ Individual Permit
☒ Area Permit
☐ Rule

Number of Wells 18

Lease Name Kalium (Mosaic Potash)

WELL
ACTIVITY

- ☐ Class I
☐ Hazardous
☐ Nonhazardous
☐ Class II
☐ Brine Disposal
☐ Enhanced Recovery
☐ Hydrocarbon Storage
☒ Class III

Well Number 2082

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
30 "			90'	30"
13 3/8"	54#		893'	17 1/2"
9 5/8"	40#		5139'	12 1/4"
7"	23 & 29 #		4700' to 7715'	8 1/2"

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- ☒ Balance Method
☐ Dump Bailer Method
☐ Two Plug Method
☐ 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)	CIBP	7"	7"	9 5/8"	9 5/8"	9 5/8"	9 5/8"
Depth to Bottom of Tubing or Drill Pipe (ft)	5675'	5675'	5141'	4741'	4241'	3741'	3241'
Sacks of Cement To Be Used (each plug)		100 Sks	75 Sks	180 Sks	180 Sks	180 Sks	180 Sks
Slurry Volume To Be Pumped (cu. Ft.)		118.9	89.1	186.9	186.9	186.9	186.9
Calculated Top of Plug (ft.)		5141'	4741'	4241'	3741'	3241'	2741'
Measured Top of Plug (if tagged, ft.)							
Slurry Weight (Lb./Gal.)		15.6	15.6	15	15	15	15
Type of Cement or Other Material (Class III)		Class A	Class A	50/50 Poz	50/50 Poz	50/50 Poz	50/50 Poz

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

From

To

From

To

Estimated Cost to Plug Wells

\$125,000.00

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CERTIFICATION

DNRE / ERMD
OFFICE OF GEOLOGICAL SURVEY

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)

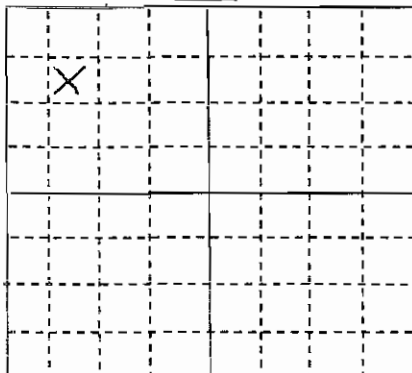
William C. Hicks, MIDFIELD SUPERVISOR

Signature

William C. Hicks

Date Signed

10/15/10

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D C 20460**PLUGGING AND ABANDONMENT PLAN****Name and Address of Facility**Mosaic Potash Hersey
1395 135th Ave
Hersey, MI 49639**Name and Address of Owner/Operator**Mosaic Potash Hersey
1395 135th Ave
Hersey, MI 49639Locate Well and Outline Unit on
Section Plat - 640 Acres

State

MI

County

Osceola

Permit Number

MI-133-3G-A002

Surface Location Description

SE 1/4 of NW 1/4 of NW 1/4 of 1/4 of Section 26 Township 17N Range 09W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

Location 1158 ft From (N/S) N Line of Quarter Section

And 1319 ft From (E/W) W Line of Quarter Section

TYPE OF AUTHORIZATION☐ Individual Permit☒ Area Permit☐ Rule

Number of Wells 18

Lease Name Kalium (Mosaic Potash)

WELL**ACTIVITY**☐ Class I☐ Hazardous☐ Nonhazardous☐ Class II☐ Brine Disposal☐ Enhanced Recovery☐ Hydrocarbon Storage☒ Class III

Well Number 2082

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
30"			90'	30"
13 3/8"	54#		893'	17 1/2"
9 5/8"	40#		5139'	12 1/4"
7"	23 & 29 #		4700' to 7715'	8 1/2"

METHOD OF EMPLACEMENT OF CEMENT PLUGS☒ Balance Method☐ Dump Bailer Method☐ Two Plug Method☐ Other**CEMENT TO PLUG AND ABANDON DATA:**

	Plug # 8	Plug #9	Plug #10	Plug #11	Plug #12	Plug #13	
Size of Hole or Pipe in Which Plug Will Be Placed (inches)	9 5/8"	9 5/8"	9 5/8"	9 5/8"	9 5/8"	9 5/8"	
Depth to Bottom of Tubing or Drill Pipe (ft)	2741'	2241'	1741'	1241'	741'	300'	
Sacks of Cement To Be Used (each plug)	180 Sks	180 Sks	180 Sks	180 Sks	159 Sks	108 Sks	
Slurry Volume To Be Pumped (cu. Ft.)	186.9	186.9	186.9	186.9	165.9	127.4	
Calculated Top of Plug (ft.)	2241'	1741'	1241'	741'	300'	Surface	
Measured Top of Plug (if tagged, ft.)						Surface	
Slurry Weight (Lb./Gal.)	15	15	15	15	15	15.2	
Type of Cement or Other Material (Class III)	50/50 poz	50/50 poz	50/50 poz	50/50 poz	50/50 poz	Class A	

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

From	To	From	To

Estimated Cost to Plug Wells

\$125,000.00

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OCT 26 2010

CERTIFICATIONDNRE / ERMD
OFFICE OF GEOLOGICAL SURVEY

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Name and Official Title

(Please type or print)

WILLIAM C. MECKS, MINIFIELD SUPERVISOR

Signature

William C. Mecks

Date Signed

10/15/10

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D C 20460**WELL REWORK RECORD****NAME AND ADDRESS OF PERMITTEE**Mosaic Potash Hersey
1395 135th Ave
Hersey MI 49639**NAME AND ADDRESS OF CONTRACTOR**Mosaic Potash Hersey
1395 135th Ave
Hersey, MI 49639Locate Well and Outline Unit on
Section Plat - 640 Acres

STATE

MI

COUNTY

Osceola

PERMIT NUMBER

MI-133-3G-A002

SURFACE LOCATION DESCRIPTION

SE 1/4 of NW 1/4 of NW 1/4 of Section 26 TWP 17N Range 9W

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface

Location 1158 ft. From (N/S) N Line of Quarter Section

And 1319 ft From (E/W) W Line of Quarter Section

WELL ACTIVITY☒ Solution Mining☐ Enhanced Recovery☐ Hydrocarbon Storage

Lease Name

Kalium (Mosaic Potash)

Total Depth Before Rework

7715'

Total Depth After Rework

5703

Date Rework Commenced

9/7/2009

Date Rework Completed

Awaiting plugging permission

TYPE OF PERMIT☐ Individual☒ Area

Number of Wells 18

Well Number 2082

WELL CASING RECORD - BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	
30'	90'					
13 3/8"	893'					
9 5/8"	5139'					
7"	7715'					

WELL CASING RECORD - AFTER REWORK (Indicate Additions and Changes Only)

Casing		Cement		Perforations		Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	

DESCRIBE REWORK OPERATIONS IN DETAIL

USE ADDITIONAL SHEETS IF NECESSARY

Lost mechanical integrity-Pull 4 1/2" casing-Ran bridge plug and sat down at 5703'-Ran 6" string mill and tried to clean out 7" casing unsuccessfully.Ran 6" flat bottom mill and could not get by 5703'. Ran 1 1/16 CCL and logged from 5650' to 5800'. Casing damage is evident from 5703'-5714'. Ran 3 1/16 CCL and could not get by 5703'. Ran 5 1/2" impression block and sat down at 5703'. Retrieve impression block showing marks on the outside of the block. We would request setting a bridge plug @5675' and P&A the well.

WIRE LINE LOGS, LIST EACH TYPE

Log Types

Logged intervals

CCL

5650'-5800'

CERTIFICATION

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NAME AND OFFICIAL TITLE

William C. Hicks
MINEFIELD SUPERVISOR

SIGNATURE

William C. Hicks

DATE SIGNED

10/15/10

EPA Form 7520-12 (Rev. 8-01)

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DNRE / ERMD
OFFICE OF GEOLOGICAL SURVEY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D C 20460**WELL REWORK RECORD****NAME AND ADDRESS OF PERMITTEE**Mosaic Potash Hersey
1395 135th Ave
Hersey, MI 49639**NAME AND ADDRESS OF CONTRACTOR**Mosaic Potash Hersey
1395 135th Ave
Hersey, MI 49639

STATE

MI

COUNTY

Osceola

PERMIT NUMBER

MI-133-3G-A002

Locate Well and Outline Unit on
Section Plat - 640 Acres**SURFACE LOCATION DESCRIPTION**

SE 1/4 of NW 1/4 of NW 1/4 of Section 26 Twp 17N R 9W

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface

Location 1158 ft From (N/S) N Line of Quarter Section

And 1319 ft From (E/W) W Line of Quarter Section

WELL ACTIVITY

- ☒ Solution Mining
☐ Enhanced Recovery
☐ Hydrocarbon Storage

Lease Name

Kalium (Mosaic Potash)

Total Depth Before Rework

7715

Total Depth After Rework

5703

Date Rework Commenced

9/7/2009

Date Rework Completed

N/C

TYPE OF PERMIT

- ☐ Individual
☒ Area

of Wells 19

2082

WELL CASING RECORD - BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture		Treatment
Size	Depth	Sacks	Type	From	To	Record		
13 3/8"	893'	900	A/Lite					
9 5/8"	5139'	2350	A/Lite					
7"	7715'	680	H					

WELL CASING RECORD - AFTER REWORK (Indicate Additions and Changes Only)

Casing		Cement		Perforations		Acid or Fracture		Treatment
Size	Depth	Sacks	Type	From	To	Record		
13 3/8"	893'	900	A/Lite					
9 5/8"	5139'	2350	A/Lite					
7"	5703'	680	H					

DESCRIBE REWORK OPERATIONS IN DETAIL

USE ADDITIONAL SHEETS IF NECESSARY

WIRE LINE LOGS, LIST EACH TYPE

Log Types	Logged Intervals
Lost mechanical integrity. Pull 4 1/2" casing. Ran wireline set bridge and sat down at 5703'	
Ran 6" string mill and tried to clean out 7" casing. could not get by 5703'. Ran 6" flat bottom mill and tried milling through. could not get by 5703'. Ran 1 11/16" CCL. Logged from 5650-5800'. Appears to be damage from 5703'-5714'. Ran 3 1/8" CCL and could not get by 5703'.	CCI 5650'-5800'
Ran 5 1/2" impression block and sat down at 5703'. Only marks on the outside of the block.	
We would request setting a bridge plug @ 5675' and P&A the well. P&A form included.	

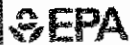
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NAME AND OFFICIAL TITLE

SIGNATURE

DATE SIGNED


 United States Environmental Protection Agency
 Washington, DC 20460

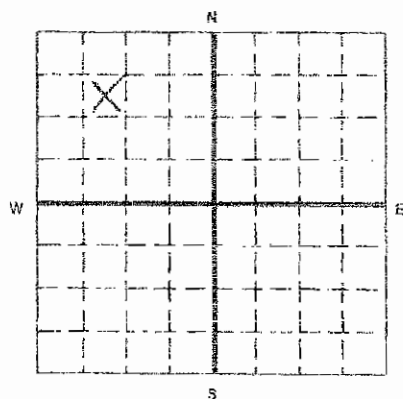
PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility Mosaic Potash Hersey 1395 135th Ave Hersey MI 49639		Name and Address of Owner/Operator Mosaic Potash Hersey 1395 135th Ave Hersey MI 49639				
Locate Well and Outline Unit on Section Plat - 640 Acres 		State MI	County Osceola	Permit Number MI-133-3G-A002		
Surface Location Description 1/4 of SE 1/4 of NW 1/4 of Section 26 Township 17n Range 9w Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location 150 ft. from (N/S) N Line of quarter section and 220 ft. from (E/W) W Line of quarter section.						
TYPE OF AUTHORIZATION ☐ Individual Permit ☒ Area Permit ☐ Rule Number of Wells 18 Lease Name: Kalium (Mosaic Potash)		WELL ACTIVITY ☐ CLASS I ☐ CLASS II ☐ Brine Disposal ☐ Enhanced Recovery ☐ Hydrocarbon Storage ☒ CLASS III Well Number 2082				
CASING AND TUBING RECORD AFTER PLUGGING						
SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE		
13 3/8	54#	893'	893'	17 1/2"		
6 5/8	40#	5139'	5139'	12 1/4"		
7	23&29#	1700-7715'	1700-7715'	8 1/2"		
METHOD OF EMPLACEMENT OF CEMENT PLUGS						
☒ The Balance Method ☐ The Dump Bailer Method ☐ The Two-Plug Method ☐ Other						
CEMENTING 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)	CIBP	7"	7"	9 5/8"	9 5/8"	9 5/8"
Depth to Bottom of Tubing or Drill Pipe (ft)	5675'	5675'	5141'	4741'	4241'	3741'
Sacks of Cement To Be Used (each plug)		100 Sks	75 Sks	180 Sks	180 Sks	180 Sks
Slurry Volume To Be Pumped (cu. ft.)		118.5	89.1	186.9	186.9	186.9
Calculated Top of Plug (ft.)		5141'	4741'	4241'	3741'	3241'
Measured Top of Plug (if tagged ft.)						
Slurry Wt. (Lb./Gal.)		15.6	15.6	15.0	15.0	15.0
Type Cement or Other Material (Class III)		Class A	Class A	50/50pc	50/50 pc	50/50 pc
LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)						
From	To	From	To			
Estimated Cost to Plug Wells 75 000.00						
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)						
Name and Official Title (Please type or print)			Signature		Date Signed	


 United States Environmental Protection Agency
 Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility Mosaic Potash Hersey 1395 135th Ave Hersey, MI 49639	Name and Address of Owner Operator Mosaic Potash Hersey 1395 135th Ave Hersey MI 49639
---	--

 Locate Well and Outline Unit on
 Section Plat - 640 Acres


State MI	County Osceola	Permit Number MI-133-3G-A002
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Surface Location Description

1/4 of SE 1/4 of NW 1/4 of NW 1/4 of Section 26 Township 17N Range 9W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

 Location 115 ft from (N.S) N Line of quarter section
 and 129 ft from (E.W) W Line of quarter section.

TYPE OF AUTHORIZATION

- ☐ Individual Permit
☒ Area Permit
☐ Rule

Number of Wells 18

Lease Name Kalium (Mosaic Potash)

WELL ACTIVITY

- ☐ CLASS I
☐ CLASS II
☐ Brine Disposal
☐ Enhanced Recovery
☐ Hydrocarbon Storage
☒ CLASS III

Well Number 2082

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
13 3/8	54#		893'	17 1/2
9 5/8	40#		5139'	12 1/4
7	23.829#		4700-7715'	8 1/2

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- ☒ The Balance Method
☐ The Dump Bailer Method
☐ The Two-Plug Method
☐ Other

CEMENTING 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)	9 5/8"	9 5/8"	9 5/8"	9 5/8"	9 5/8"	9 5/8"	9 5/8"
Depth to Bottom of Tubing or Drill Pipe (ft)	274'	224'	174'	124'	74'	300'	
Sacks of Cement To Be Used (each plug)	180 Sks	180 Sks	180 Sks	180 Sks	159 Sks	108 Sks	
Slurry Volume To Be Pumped (cu ft.)	186.9	186.9	186.9	186.9	165.9	127.4	
Calculated Top of Plug (ft.)	224'	174'	124'	74'	300'	Surface	
Measured Top of Plug (If tagged ft.)						Surface	
Slurry Wt (Lb./Gal.)	15.0	15.0	15.0	15.0	15.0	15.2	
Type Cement or Other Material (Class III)	50/50 po	50/50 po	50/50 Po	50/50 Po	50/50 Po	Class A	

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

From	To	From	To

Estimated Cost to Plug Wells

75,000.00

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)

Name and Official Title (Please type or print)	Signature	Date Signed
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**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 438	Well name and number Kalium 2082
API number MI-133-3G-A002	
Name and address of permittee Mosaic Potash Hersey 1395 135th Ave Hersey, Mi 49639	
Type of well Solution Mining	Field name Kalium
Surface location SE 1/4 NW 1/4 SW 1/4 Sec 26 T 17N R 9W	
Township Hersey	County Osceola
Date plugging/change started 11/10/2007	Date plugging/change completed 12/5/2007
DEQ employee issuing plugging permit or approving Change of Well Status Rav Vuorinovich	

Name and address of contractor/service company

**Mosaic Potash Hersey
1395 135th Ave
Hersey, Mi 49639**

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

PLUGS

Depth of plug Bottom 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

☐ 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 MI-133-3G-A002	Permit number 438
------------------------------	----------------------

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	
	☐ 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?	
13 3/8	893'	900	A				
9 5/8	5139'	2425	A				
7	7715'	680	H				

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?	
7	7715'	680	H				Casing patch installed at 2851'

BEFORE CHANGE

Total depth	Completed Fm	Well completed for	
BOPD	MCFGPD	Inj Rate	Pressure

AFTER CHANGE

Total depth	Completed Fm	Well completed for	
BOPD	MCFGPD	Inj Rate	Pressure

DAILY PRODUCTION TEST RECORD

Date	Oil (bbls)	Water (bbls)	Gas (Mcf)	Pressure	
				Tubing	Casing

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
11/13/07	Set Cast iron bridge plug @ 5815' , dump 20 bags of sand on top of the plug.
11/16/07	Run packer testing for hole at various depths- initial packer was leaking by, rented tension packer from Pioneer.
11/20/07	Found hole at 6' below wellhead. Cut off 7 inch at 7 feet below wellhead. Pulled slips and 7 inch stub. Due to
11/27/07	past experience we cut and pulled 1520' of 7 inch casing, dressed of the 7 inch stub and patched the 7 inch at 1520'. Pressure up the 7"and still had a leak, pulled more on the patch and parted the pipe @ 2851'
11/29/07	Pulled 7 inch casing- Ran packer and tested below the parted pipe all ok.
11/30/07	Dressed off the top of the 7 inch. Run 7 inch casing and casing patch. Set patch at 2851'. Weld on wellhead
12/4/07	Tested casing -Mark Smith witnessed the test. Retrieve the bridge plug and run 4 1/2" casing to 6000'

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) ROBERT SCHWEITZER, PRODUCTION Supt	Authorized signature <i>Robert Schweitzer</i>	Date 12/5/07
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NOTE: Bonds cannot be terminated until plugging is completed, cellar, rat and mouse holes, and pits filled, site leveled and cleaned and records filed.

**REQUEST FOR TRANSFER OF PERMIT**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, 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☒ Part 625 Mineral Well

Permit number M-438	Well type Brine Prod.	Current true vertical depth 7565
Well name and number Kalium Hersey 2082		
Surface location SE 1/4 NW 1/4 SW 1/4 Section 26 T 17N R 9W		
Township Hersey		County Osceola

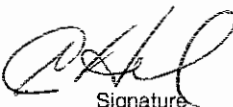
NOTE: Eligibility for permits is conditioned upon compliance with the statutes, rules and orders of the Department of Environmental Quality. Permits shall not be transferred to persons not in compliance. A permit for a well shall not be transferred if the permittee is under notice because of unsatisfactory conditions at the well site until compliance is achieved. The acquiring permittee shall attach a current Organization Report (EQP 7200-13)

This permit does not convey property rights in either real estate or material nor does it authorize any injury to private property or invasion of private or public rights nor does it waive the necessity of seeking federal and local permits or complying with other state statutes.

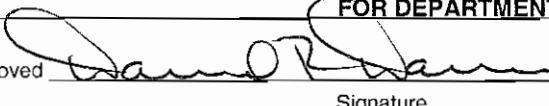
TRANSFER OF A PERMIT FROM:

Name(s) of Selling Permittee(s) IMC Kalium, Limited		Fed. I.D.# or S.S.# 38-3545577	
Address: Number and Street, City or Town, State, ZIP Code Telephone 1395, 135th Avenue Hersey, MI, 49639		231-832-3755	
All permits rights and responsibilities are discharged by:			
IMC Kalium Limited Permittee	Colin Howard Authorized representative name	 Signature	16/04/2001 Date
Permittee	Authorized representative name	Signature	Date
Permittee	Authorized representative name	Signature	Date

TRANSFER OF A PERMIT TO:

Name(s) of Acquiring Permittee(s): IMC Potash Hersey Inc.		Fed. I.D.# or S.S.# ME0132184	
Address: Number and Street, City or Town, State ZIP Code 1395 135th Avenue Hersey, MI, 49639		Telephone 231-832-3755	
(We are) (I am) an owner or authorized representative of the owner of the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders			
BOND: ☐ Single Well ☐ Attached Surety or Bank <u>Royal Bank of Canada</u> ☒ Blanket ☒ On File Bond Number <u>P43087C00008</u> Amount <u>\$25,000</u> ☐ Statement of Financial Responsibility			
All permittee rights and responsibilities are assumed by:			
IMC Potash Hersey Inc. Permittee	Colin Howard Authorized representative name	 Signature	16/04/2001 Date
Permittee	Authorized representative name	Signature	Date
Permittee	Authorized representative name	Signature	Date

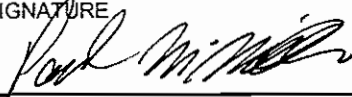
FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

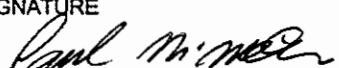
Approved  Signature	MAY 08 2001 Date	Distribution by DEQ ☒ Lansing ☐ Selling Owner ☐ Field ☐ Acquiring Owner
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JAN 13 1999

Form Approved. OMB No 2040-0042. Expires 6-30-98

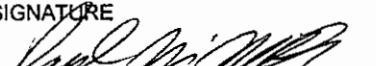
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Lease Name Kalium Hersey				Total Depth After Rework 7715		☒ Area																																																																																																							
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				Date Rework Completed 8/14/98		Well Number 2082																																																																																																							
WELL CASING RECORD - BEFORE REWORK																																																																																																													
Casing		Cement		Perforations		Acid or Fracture Treatment Record																																																																																																							
Size	Depth	Sacks	Type	From	To																																																																																																								
30	90	Driven																																																																																																											
13 3/8	893	900	A																																																																																																										
9 5/8	5139	2425	A																																																																																																										
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7	7715	680	H																																																																																																										
Describe rework operations in detail Use additional sheets if necessary					Wire line logs																																																																																																								
					Log Types																																																																																																								
Pull standing. Run in hole with THL set @ 7735'. Pull THL - plugged					CEREOLOGICAL SURVEY DIV. ENVIRONMENTAL QUALITY Logged intervals																																																																																																								
Clean out & land O.D.. PFC																																																																																																													
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. CFR 144.32).																																																																																																													
NAME AND OFFICIAL TITLE (Please type or print) Paul McMillen Minefield Supervisor				SIGNATURE 			DATE SIGNED 08/21/98																																																																																																						

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY										
WASHINGTON DC 20460										
EPA WELL REWORK RECORD										
NAME AND ADDRESS OF PERMITTEE IMC Kalium Ltd 1395 135th Avenue Hersey, MI 49639				NAME AND ADDRESS OF CONTRACTOR IMC Kalium, Ltd 1395 135th Avenue Hersey, MI 49639						
LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT -- 640 ACRES		STATE MI	COUNTY Osceola	PERMIT NUMBER MI-133-3G-A002						
N S W E		SURFACE LOCATION DESCRIPTION <u>SE 1/4 of NW 1/4 of SW 1/4 of 1/4 of Section 26 Township 17N Range 9W</u> Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location <u>1158 ft</u> from (N/S) <u>N</u> Line of quarter section and <u>1319 ft.</u> from (E/W) <u>W</u> line of quarter section								
		WELL ACTIVITY ☐ Brine Disposal ☐ Enhanced Recovery ☒ Hydrocarbon Storage ☒ Sol n Mining		Total Depth Before Rework 7715		TYPE OF PERMIT ☐ Individual				
		Lease Name Kalium Hersey		Total Depth After Rework 7715		☒ Area				
				Date Rework Commenced 4/3/98		Number of Wells <u>18</u>				
		Date Rework Completed 4/21/98		Well Number 2082						
WELL CASING RECORD - BEFORE REWORK										
Casing		Cement		Perforations		Acid or Fracture Treatment Record				
Size	Depth	Sacks	Type	From	To					
30	90	Driven								
13 3/8	893	900	A							
9 5/8	5139	2425	A							
7	7715	680	H							
WELL CASING RECORD - AFTER REWORK (Indicate Additions and Changes Only)										
Casing		Cement		Perforations		Acid or Fracture Treatment Record				
Size	Depth	Sacks	Type	From	To					
30	90	Driven								
13 3/8	893	900	A							
9 5/8	5139	2425	A							
7	7715	680	H							
Describe rework operations in detail Use additional sheets if necessary					Wire line logs, list each type					
Run 2 7/8" tubing in hole. 2 7/8" tubing parted. Fish tubing. Rerun tubing to bottom. Circulate well. Trip stding. MIT. Rerun tubing. Trip stding Run OCHL Logs. Rerun tubing. PFC.					Log Types	Logged intervals				
					OCH 5" scale					7849-0
					OCH 25" scale					7849-6500
					PFC					
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. CFR 144.32).										
NAME AND OFFICIAL TITLE (Please type or print) Paul McMillen Minefield Supervisor				SIGNATURE 		DATE SIGNED 06/02/98				



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - GEOLOGICAL SURVEY DIVISION
CERTIFICATION OF CASING AND SEALING OF SURFACE HOLE

MAR 30 1998

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	M438
Well name	KALUM HERSEY 2082
Surface location	SE 1/4 of NW 1/4 of SW 1/4 Section 26 T 17N R 9W
Name and address of drilling contractor	MCLACHLIN DRILLING COMPANY P.O. BOX 548 EVART, MI, 49631

Township HERSEY County OSCEOLA

Name and address of permittee
IMC KALUM CHEMICALS, LTD
1395 135th AVE
HERSEY, MI, 49639

SURFACE HOLE

Hole diameter (Note reductions)	Depth to bedrock	Base of specified aquifer (see permit)	Total depth of surface hole	Formation at surface casing seat	Date drilling completed
17 1/2"	769	769	891	MICH GROUP	9/20/97

Narrative of unusual drilling circumstances or problems encountered

N/A

Name and address of geologist/mud logger

ALLEN BRIGHT
P.O. BOX 320
LAKE ANN, MI. 49650

Signature

Allen Bright

Date

9-20-97

SURFACE CASING

Casing O.D. (in)	Casing depth	Cement type and additives	Amount of cement (sacks)	Volume (bbls)		Plug down date & time
				Pumped	Returned to surface	
13 3/8	891	LITE	575	247	0	0200
		A	200	134	0	9/21/97

Narrative of problems encountered running or cementing casing Note any cement fallback grouting, or lost circulation zones

GROUTED WITH 125 SACKS (26 BBLs) CLASS "A" W/3% CaCl₂
3 BBLs RETURNS

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

Signature of permittee or company officer

[Signature]

Date

MARCH 15, 1998

Submit the original and one copy, typewritten or legible printed, within 30 days after drilling is completed to:

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

MAR 10 1990

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
P.O. BOX 30028 LANSING MICHIGAN 48909

RECORD OF WELL DRILLING OR DEEPENING

USE APPROPRIATE BLOCKS. FOR ITEMS NOT LISTED SUBMIT ATTACHMENTS

REQUIRED BY AUTHORITY OF:

☐ ACT 61 P.A. 1939, AS AMENDED
(Submit 2 copies within 30 days
of completion.)

☒ ACT 315, P.A. 1969, AS AMENDED
(Submit 2 copies within 60 days
of completion.)

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN
FINES AND/OR IMPRISONMENT.

PERMIT NO./DEEPENING PERMIT NO M-438			TYPE OF WELL (after completion) Solution Mining		
FIELD/FACILITY NAME Hersey Potash					
WELL NAME & NUMBER Kalium Hersey 2082					
SURFACE LOCATION SE 1/4 of NW 1/4 of SW 1/4 Section 26 T 17N R 9W					
NAME AND ADDRESS OF OWNER IMC Kalium Chemicals, Ltd. 1395 135th Avenue Hersey, MI 49639			TOWNSHIP Hersey		
			COUNTY Osceola		
NAME AND ADDRESS OF DRILLING CONTRACTOR McLachlin Drilling Company PO Box 548 Evart, MI 49631			FOOTAGES: NORTH/SOUTH 1158 Ft. from North Line and 1319 Ft. from West Line of 1/4 Sec.		
			EAST/WEST		
DATE DRILLING BEGAN 9/21/97			DATE DRILL COMPLETED 10/22/97		
DATE WELL COMPLETED 10/26/97			SUBSURFACE LOCATION (if directionally drilled) NE 1/4 of SW 1/4 of SW 1/4 Section 26 T 17N R 9W		
TOTAL DEPTH OF WELL Driller 7814 Log 7812			TOWNSHIP Hersey		
FORMATION AT TD A-1 Evap			COUNTY Osceola		
PROD. FORMATION(S) A-1 Evap			FOOTAGES: NORTH/SOUTH 839 Ft. from South Line and 1142 Ft. from West Line of 1/4 Sec.		
DATE OF FIRST INJECTION TBA			EAST/WEST		
INJECTED FORMATION A-1 Evap			FEET DRILLED — CABLE TOOLS From N/A To 0		
SOLUTION FORMATION A-1 Evap			FEET DRILLED — ROTARY TOOLS From 0 To 7814		
			ELEVATIONS		
			K.B. 1149.5 ft. R.F. 1148.5 ft. R.T. N/A ft. Grd. 1135.6 ft.		

CASING, CASING LINERS AND CEMENTING, OPERATING STRINGS

PERFORATIONS

SIZE	WHERE SET	CEMENT	FT. PULLED	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
							YES	NO
13 3/8	893	900	---					
9 5/8	5139	2425	---					
7	7715	680	---					

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
							Sam- ples	Odor	Pits	Mud Line	Gas Log.	Fill Up
None			None	None		None						

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	INTERVAL TREATED	MATERIALS AND AMOUNT USED	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	None	None	None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION

DEVIATION SURVEY

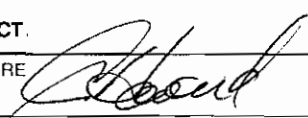
PLUGGED BACK

BRAND	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECTION	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	x	Sonic - G/R	5100-7808			2500	1.2			
Directional Schl.	x	Neutron - G/R	5100-7808			5000	.6			
M.W.	x	Cement Bond	4630-7704			6000	18.9			
DDL	x	Directional	0-7750			7500	3.4			

PRODUCTION TEST DATA

OIL — Bbls/day	GRAVITY — °API	COND Bbls/day	GAS — MCF/day	WATER — Bbls/day	H ₂ S — Grains/100 cu ft	BHP AND DEPTH
N/A	N/A	N/A	N/A	N/A	N/A	N/A

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE	NAME AND TITLE (PRINT)	SIGNATURE
March 15, 1998	Colin Howard, Production Geologist	

KH2082

FORMATION RECORD

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

ELEVATION USED 1149.5	GEOLOGIST NAME: Colin Howard	TOPS TAKEN FROM ☒ DRILLERS LOG ☐ SAMPLE LOG ☐ 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					
0	769	Drift			
769	1374	Michigan Group			
1374	1467	Triple Gyp			
1467	1578	Brown Lime			
1578	1684	Stray Sand			
1684	1848	Marshall Sand			
1848	2600	Coldwater Shale			
2600	2697	Sunbury Shale			
2697	3117	Ellsworth Shale			
3117	3257	Antrim Shale			
3257	3303	Traverse Formation			
3303	3801	Traverse Lime			
3801	3877	Bell Shale			
3877	3944	Dundee			
3944	3973	Reed City Anhydrite			
3973	4124	Reed City Dolomite			
4124	4191	Detroit River Anhydrite			
4191	4590	Detroit River Salt			
4590	4716	Detroit River Sour			
4716	5006	Massive Anhydrite			
5006	5128	Black Lime			
5128	5219	Sylvania			
5219	5380	Bois Blanc			
5380	5701	Bass Island			
5701	5709	Salina			
5709	5733	F-Unit			
5733	6038	F-Salt			
6038	6421	E-Unit			
6421	6467	D-Salt			
6467	6687	C-Shale			
6687	6920	B-Salt			
6920	7060	A-2 Carbonate			
7060	7416	A-2 Evaporite			
7416	7480	A-1 Carbonate			
7480	7750	A-1 Evaporite (T.D.)			
IF WELL WAS CORED, ATTACH CORE DESCRIPTION					
DRILL STEM TEST DATA					
LIST ATTACHMENTS:					
DDL - Oncourse Directional SCHL. - Sonic G/R SCHL. - Neutron M.W. - Cement Bond					
GEOLOGICAL SURVEY USE ONLY					
REVIEWED BY:					
DATE OF REVIEW:					

THESE ARE TVD - Ray V 2/18/2003

6729

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028
LANSING MICHIGAN 48909

PERMIT TO

☒ DRILL ☐ DEEPEN ☐ REWORK ☐ OPERATE

GRANTED UNDER PROVISIONS OF

☐ Act 61 P.A. 1939, as amended ☒ Act 315, P.A. 1969 as amended
(M.C.L. 319.1 to 319.27) (M.C.L. 319.211 to 319.236)

Violation of and/or non-compliance with the provisions
of the acts and conditions of permit may result in penalties.
This permit includes as requirements all the operations and methods
proposed by the applicant, unless rejected or altered by the DNR, and
along with the attached stipulations are incorporated in its entirety by
reference.

WELL NAME WELL NO
Kalium Hersey 2082

LOCATION AND FOOTAGES:

SHL: SE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 26, T17N, R9W, Hersey Twp., Osceola
1158 ft. from North and 1319 ft. from West line of quarter section.
BHL: NE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 26, T17N, R9W, Hersey Twp., Osceola Co.
839 ft. from South and 1142 ft. from West line of quarter section.

PERMIT M438	ISSUED 9/9/97	TYPE OF WELL Brine Production
CANCEL AND TRANSFER	ISSUED	FORMATION A-1 Evaporite
DEEPENING PERMIT		DEPTH 8,000' MD, 7,850' TVD
PERMIT EXPIRES 3/9/98		KIND OF TOOLS Rotary
ISSUED TO IMC Kalium, Ltd. 1395 135th Avenue Hersey, MI 49639		

O.O. SIZE	WT./FT.	CASING		CASING AND SEALING REQUIREMENTS			CEMENT	W.O.C. (HRS.)
		GRADE	CONDITION	DEPTH	SACKS			
13 3/8"	48#	J-55	New/Used	900'	700		16	
9 5/8"	40#	K-55	New/Used	5000'	1600		16	
7 "	23#	L-80	New	7950'	500		24	

1. No earthen reserve pit is to be dug. Steel tanks are to be used to contain drilling fluids and cuttings.
2. Solids and cuttings shall be hauled to the Northern Oaks landfill.
3. Wellhead shall be rated at 5000 psi.
4. 9 5/8" intermediate casing shall be set a minimum 100' into the Amherstburg formation.

OFFICE TO BE NOTIFIED BEFORE DRILLING/DEEPENING STARTS

CADILLAC (616) 775-3960

BY

William Lee

WILLIAM LEE (517) 334-6974

PERMIT COORDINATOR

PAGE 1 of PAGE(S)

FOR THE SUPERVISOR OF WELLS/MINERAL WELLS

THIS PERMIT IS SUBJECT TO THESE GENERAL CONDITIONS

1. Drilling operations shall not start until the drill site preparation requirements are completed
2. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all the terms and conditions of this permit and the rules, orders and requirements of the Supervisor of Wells/Mineral Wells.
3. The permittee is required to give notice to public utilities in accordance with Act 53, PA 1974 (M C L 460 701 to 460.718).
4. Any changes from what is stated in the permit application and permit shall be approved by the Supervisor of Wells/Mineral Wells
5. This permit is valid only for the permittee of issue and any change of ownership shall be accompanied by a request to the Supervisor of Wells/Mineral Wells to transfer the permit from the current owner to the new owner
6. NOTICE AND REQUIREMENTS FOR SOURCES OF WATER AND WATER WELLS USED IN CONJUNCTION WITH OIL AND GAS OR MINERAL WELL DRILLING AND OPERATIONS" December 1 1984 is made part of and a condition of this permit
7. During well completion and testing procedures all fluids shall be contained in tanks and transported to off site disposal facilities
8. The Michigan Air Pollution Control Commission rules require that a person shall not install nor alter sour gas or oil well production equipment and flare unless a permit to install has been approved by the Commission. An operator is allowed to drill and test a sour well prior to obtaining the necessary permit to install from the Commission, but is not allowed full production of such wells before issuance of the necessary air use permits
9. This permit does not convey property rights in either real estate or material or does it authorize any injury to private property or invasion of private or public rights or does it waive the necessity of seeking federal and local permits or complying with other state statutes
10. If a Hydrogen Sulphide contingency plan is required a copy of PART II of the plan shall be posted in the primary briefing area
11. All trash and garbage shall be removed from the drill site at the completion of drilling.
12. Blowout preventers, accumulators and pumps shall be certified as operable under the product manufacturer's minimum operational specifications. This certification shall include proper operation of the closing unit, valving, pressure gauges, and manufacturer's recommended accumulatory fluids. Certification may be obtained through those companies presently used to test the blowout preventers stack and casing. Certification shall be required annually and shall be posted on the rig floor.
13. In addition to the primary closing system including an accumulator system, the blowout preventers shall have a secondary system. A combination of any two of the following secondary closing systems will be acceptable: Electric-operated pump; Air-operated pump; Hand-operated pump or nitrogen. Extensions with hand wheels are not mandatory
14. Blowout preventer rams shall be of proper size for the drill pipe being used or production casing being run in the well. Variable type rams of the proper size range will be acceptable
15. The gas buster and flare system shall be in place and operable prior to drilling into a reservoir known or believed to contain Hydrogen Sulphide in excess of 500 ppm with the intention to complete in and/or test that reservoir.
16. A trip tank, or any accurate fluid monitoring system, as well as a gas buster and flare system where justified, shall be in place when penetrating the A2 Carbonate formation. Changes may be granted by the Department of Natural Resources District Geologist.

TRANSMITTAL AND FIELD REVIEW
FOR PROPOSED WELL SITE☐ Part 615 Supervisor of Wells, Act 451 PA 1994, as amended☒ Part 625 Mineral Wells, Act 451 PA 1994, as amended

CADILLAC DIST. GEOLOGIST GPR

1a Application number MW 970011	1b Owner number	1c Revision ☐ Yes ☒ No	1d Coordinator R. LEFERILLER	1e Date sent 6-3-97
2 Applicant IMC KALIUM, LTD.				1f. District CADILLAC
3a Well name and number KALIUM HERSEY #2082			3b Other permit numbers	
4a Surface location SE 1/4 NW 1/4 SW 1/4 Sec 26 T 17N R 9W			Township HERSEY County OSCEOLA	
4b Footages 1158 ft from North line of 1/4 sec 1319 ft from West line of 1/4 sec				
5a Surface Ownership ☒ Private ☐ State ☐ Federal			5b Mineral ownership ☒ Private ☐ State ☐ Federal	
6 Information and requests: (Spacing, problem areas etc.) MINERAL EXTRACTION WELL			5c Well site area local zoning ☒ Other: NOT ZONED JUN 28 1997 GEOLOGICAL SURVEY CADILLAC	

FIELD REVIEW AND RECOMMENDATIONS

7 Field review by: name and date MOSS	8a Land use: MINING	8b Cover type/density: GRAVEL
9 Topography - (slope % grade) FLAT	10a. Area involved: EXISTING PAD Drill pad: Acres	10b. Area involved Access road EXISTING Acres
11 Soil type and drainage field tiles etc	STAND & GRAVEL FILL	
12 Are soil erosion and sedimentation control measures adequate? ☒ Yes ☐ No		
13 Type direction & distance to surface waters waterways, wet lands flood plains and natural rivers within 1/4 mile	NONE	
14 Nearby scenic historical or recreational areas. environmentally sensitive, critical dunes, and threatened and endangered species within 1/4 mile	N.A.	
15 Buildings public roads, pipelines and power lines, water wells within 300 feet of proposed well site.	MINERAL WELL CLUSTER	
16 Is casing and sealing adequate? Conductor ☒ Yes ☐ No Surface ☒ Yes ☐ No Intermediate ☐ Yes ☒ No Production ☐ Yes ☒ No	Expected depth to base of fresh water, formation SHOULD BE SET IN AMHERSTBURG FM OR LOWER SEE MEMO	
17 Is Intermediate Casing Exception recommended? ☐ Yes ☒ No		
18 B.O.P. Program adequate? ☐ Yes ☒ No If certified tests required, give details.	WELLHEAD SHOULD BE 5000'	
19 H ₂ S ☐ "Sweet" ☐ Sour' Class ☐ Plan required Plan complete and accurate? ☒ Yes ☐ No	GEOLOGICAL SURVEY AUG 26 1997	
20 SI 2-87 apply? ☐ Yes ☒ No In-ground Pit Exception? ☐ Yes ☒ No H ₂ S Prod Facilities Exception? ☐ Yes ☒ No Require electric pump jack? ☐ Yes ☒ No	Permits & Bonding Unit	

21 Source of freshwater: ☐ Surface water ☐ Municipal source ☐ Potable well ☐ Other ☒ Exclusive use well							
22 Drilling pit requirements a Use mud tanks only? ☒ Yes ☐ No							
b Specific placement required? ☐ Yes ☐ No							
c. Remote pit required? ☐ Yes ☐ No							
d Salt cuttings to be: (give details) ☒ Dissolved & removed ☐ Removed for disposal ☐ None							
e District geologist to be notified prior to: Excavation ☐ Yes ☐ No Liner installation ☐ Yes ☐ No Encapsulation ☐ Yes ☐ No	NA						
23 DEQ and/or DNR comments:							
24. Items continued and/or not covered above (attach additional sheets if needed):							
25. Permits needed (describe if applicable): ☐ Land use / well site ☐ Wetlands ☐ Stream crossing ☐ Other ☐ Soil erosion/sedimentation							
26 Revision included (describe if applicable)							
27. Representative of permittee contacted regarding additional requirements? ☐ Yes ☐ No <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 45%;">Name</td> <td style="width: 30%;">Date</td> <td style="width: 25%;">Phone</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		Name	Date	Phone			
Name	Date	Phone					
28. Area geologist: recommend a permit: ☐ Yes ☐ No (provide reasons) ☐ Needs corrections or additional information ☒ Memo attached <i>Michael J. Moran</i> Signature Title 8/21/97 Date							
29 District Geologist: Recommend a permit: ☒ Yes ☐ No (provide reasons) ☐ Needs corrections or additional information ☐ Memo attached <i>Rick Anderson</i> Signature Dist Geol Title 8/24/97 Date							

DRILLING PERMIT APPLICATION FLOW SHEET

Application Number: mw 970011	Date application received: 5/23/97	+ 5 days Date to send to field: 5/28/97
Applicant: ICM Kalium		+ 45 days 90 Date to review: 8/26/97
Well Name & No: Kalium Hersey #2082		+ 10 days Date to respond: 9/9/97
Vendor No: ☐ New vendor ☐ Org Chart received		+ 10 bus. days Date to issue permit: 9/23/97

INITIAL REVIEW

Reviewer: **RT**

☒ Fee	☒ Check #, Bank, City #0032293, Royal Bk. of Canada		
	☐ Deepening	☐ Revision	☐ C&T, original permit enclosed
☒ Complete Application	☒ EQP 7200-1	☒ EQP 7200-2	☒ Supplemental plat ☒ BOP Diagram
	☒ EIA	☒ Notice to landowner	☒ Directional Plan ☒ Add info H2S plan
	☒ Bond	☐ Single	☒ Blanket Bond # 25K
☐ Natural Features	☐ No match found	Program _____	Feature _____
	☐ Match found	Personnel contacted _____	Phone: _____
☒ Distribution	Area geologist: ☒ Cad ☐ Gay ☐ B C ☐ H L ☐ Shi ☐ Jac ☐ Liv ☐ Pl.		
	District Geologist: ☒ Cad ☐ B C ☐ Shi ☐ Pl		
	☐ Confidential, copy provided to PGP ☐ F T. Date 6-3-97		
	☐ Returned to applicant, date _____		

REVIEW FOR COMPLETE AND ACCURATE INFORMATION

Reviewer: **WLL**

☒ Location	☒ 7200-1 Deficiencies or conflicts _____		
	☒ 7200-2 Deficiencies or conflicts _____		
	☒ Zoning NONE Residential zoning initial date: _____		
	☒ Posted on map ☐ Certification of elevations		
☐ Drilling Unit MINERAL WELL	☒ Purpose of well in EIA? Well type: ☐ Oil/Gas ☐ BDW ☐ Gas Storage ☐ Secy Rec ☐ Spacing addressed in EIA? ☐ Field spacing order _____ ☐ (A) 14-9-94 ☐ (A) 3-3-95 ☐ S O 1-73 ☐ S O 1-86 ☐ General Rules ☐ Approved USP _____ USP Density _____ ☐ 1320' conflicts _____ Spacing conflicts _____ ☐ Voluntary pooling ☐ Administrative approval ☐ Pooling documents		
☒ Ownership	☒ Private surface ☐ Private minerals ☐ Complete drilling unit SURFACE OWNED BY COMPANY ☐ State surface ☐ State minerals ☐ Open acreage ☐ Federal surface ☐ Federal minerals State lease deficiencies _____		
☒ H ₂ S	☐ Copy to H ₂ S Unit ☐ Sweet ☒ Sour, Class _____ ☒ Contingency plan enclosed		
☒ Casing & Sealing	☒ Rotary ☐ Combination ☐ Cable ☒ Int csg S.O. 2-73 ☐ 30% exception ☐ Short int exception ☐ Through Gas Storage S O 1-87 ☐ Notice to Storage operator ☒ SI 1-94 ☒ BOP Adequate ☒ Deficiencies Added depth to int csg, upgrade wellhead rating		
☒ EIA Review	☒ EIA Part I A-B Deficiencies _____ ☒ Field review received Recommend issuance ☒ Yes ☐ No ☐ Field EIA deficiencies _____ ☐ Corrections or additional info from above _____ ☐ Notice to applicant Date _____		
☐ Other	☐ Public hearing pending _____ ☐ Permits hold _____ ☒ Other problems, comments from RED no/pps		

Ready to issue WLL



GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO:

☒ DRILL ☐ DEEPEN
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

☐ Disposal
☒ Brine Production
☐ Test Well
☐ Storage

1c. Fee enclosed?

☒ Yes
☐ No, revision of application

2. List all previous permit numbers

3 Fed Employer ID No. or Soc Security No
38-3545577

4. Conformance bond

☒ Blanket ☐ Single well5 ☐ Attached☒ On file

6. Bond number

Bank of Montreal

7 Bond amount

\$25,000

8. Applicant (name of permittee as bonded)

IMC Kalium, Ltd.

9. Address

1395 135th Avenue
Hersey, MI 49639

Phone

616-832-3755

10. Lease or well name (be as brief as possible)

Kalium Hersey

Well number

2082

11. Surface owner

IMC Kalium, Ltd.

12. Surface location

SE 1/4 of NW 1/4 of SW 1/4 of Sec 26 T 17N R 9W

Township

Hersey

County

Osceola

13. If directional, bottom hole location

NE 1/4 of SW 1/4 of SW 1/4 of Sec 26 T 17N R 9W

Township

Hersey

County

Osceola

14. The surface location for this well is

a 1438 feet from nearest (N/S) south section line AND 1319 feet from nearest (E/W) west section line
b 1158 feet from nearest (N/S) north quarter section line AND 1319 feet from nearest (E/W) west quarter section line

15. Is this a directional well? ☐ No ☒ Yes If yes complete lines 15 a & b the bottom hole location for this well is

a 839 feet from nearest (N/S) south section line AND 1142 feet from nearest (E/W) west section line
b. 839 feet from nearest (N/S) south quarter section line AND 1142 feet from nearest (E/W) west quarter 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

☒ Rotary ☐ Cable ☐ Combination

18. Is sour oil or gas expected?

☐ No ☒ Yes ☒ H₂S Cont. plan enclosed

19. Base of lowest known fresh water aquifer

Formation Drift Depth 800'

20. Intended total depth

MD 8,000' TVD 7,850'

21. Formation at total depth

A-1 Evaporite

22. Producing/injection formation(s)

A-1 Evaporite

23. Objective pool field or project

Hersey Potash

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.
900'	Drift	17 1/2"	13 3/8"	48#	J55, New/Used		900'	700	Surf.	16	8.4	27
4,900'	Mass. Anh.	12 1/4"	9 5/8"	40#	K-55, New/Used		4,900'	1,600	Surf.	16	10.2	27
8,000'	A-1 Evap.	8 1/2"	7"	23#	L-80, New		7,950'	500	5,000'	24	10.2	34

25. Send correspondence and permit to

IMC Kalium, Ltd.

Address

1395 135th Avenue Hersey, MI 49639

Phone

616-832-3755

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 \$100 for a Part 615 oil, gas, or brine disposal well or \$50 for a Part 625 disposal, brine production or storage well. Make checks payable to State of Michigan.

26. Application prepared by (print or type)

Colin Howard

Phone

616-832-3755

DEQ Cashier use only.

27. Signature

Date

5/20/97

Geological Survey Division Use Only.

Permit number

Date issued

Owner number

GEOLOGICAL SURVEY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION

APPLICATION FOR PERMIT TO:

☒ DRILL ☐ DEEPEN
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

☐ Disposal
☒ Brine Production
☐ Test Well

1c. Fee enclosed?

☒ Yes
☐ No, revision of application

Permits & Bonding Underage

2. List all previous permit numbers

3. Fed. Employer ID. No. or Soc. Security No.
38-3545577

4. Conformance bond

☒ Blanket ☐ Single well5. ☐ Attached☒ On file

6. Bond number P43087C

Bank of Montreal 00008

7. Bond amount

\$25,000

8. Applicant (name of permittee as bonded)

IMC Kalium, Ltd.

9. Address

1395 135th Avenue
Hersey, MI 49639

Phone

616-832-3755

10. Lease or well name (be as brief as possible)

Kalium Hersey

Well number

2082

11. Surface owner

IMC Kalium, Ltd.

12. Surface location

SE 1/4 of NW 1/4 of SW 1/4 of Sec 26 T 17N R 9W

Township

Hersey

County

Osceola

13. If directional, bottom hole location

NE 1/4 of SW 1/4 of SW 1/4 of Sec 26 T 17N R 9W

Township

Hersey

County

Osceola

14. The surface location for this well is

a. 1438 feet from nearest (N/S) south section line AND 1319 feet from nearest (E/W) west section line

b. 1158 feet from nearest (N/S) north quarter section line AND 1319 feet from nearest (E/W) west quarter section line

15. Is this a directional well? ☐ No ☒ Yes if yes complete lines 15 a & b, the bottom hole location for this well is

a. 538 feet from nearest (N/S) south section line AND 1142 feet from nearest (E/W) west section line

b. 839 feet from nearest (N/S) south quarter section line AND 1142 feet from nearest (E/W) west quarter 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

☒ Rotary ☐ Cable ☐ Combination

18. Is sour oil or gas expected?

☐ No ☒ Yes ☒ H₂S Cont. plan enclosed

19. Base of lowest known fresh water aquifer

Formation Drift

Depth 800'

20. Intended total depth

MD 8,000' TVD 7,850'

21. Formation at total depth

A-1 Evaporite

22. Producing/injection formation(s)

A-1 Evaporite

23. Objective pool, field or project

Hersey Potash

24. PROPOSED DRILLING, CASING AND CEMENTING AND SEALING PROGRAM

HOLE			CASING			CEMENT			MUD	
Depth (MD)	Geol. Formation	Bit Dia.	O.D. Size	W/P: Grade	Condition	Depth (MD)	Sacks	T.O.C.	W.O.C.	Wt. Vls.
900'	Drift	17 1/2"	13 3/8"	48# J55.	New/Used	900'	700	Surf.	16	8.4 27
5000'	AMHERSTBURG	12 1/4"	9 5/8"	40# K-55.	New/Used	5000'	1,600	Surf.	16	10.2 27
8,000'	A-1 Evap.	8 1/2"	7"	23# L-80.	New	7,950'	500	5,000'	24	10.2 34

25. Send correspondence and permit to

IMC Kalium, Ltd.

Address

1395 135th Avenue Hersey, MI 49639

Phone

616-832-3755

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 \$100 for a Part 615 oil, gas, or brine disposal well, or \$50 for a Part 625 disposal, brine production or storage well. Make checks payable to State of Michigan

26. Application prepared by (print or type)

Colin Howard

Phone

616-832-3755

27. Signature

Date

5/20/97

DEQ Cashier use only.

Geological Survey Division Use Only.

Permit number

Date issued

Owner number

m438

9/9/97

—

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

IMC Kalium, Ltd.

Well name and number

Kalium Hersey #2082

1a. Surface location

SE 1/4 of NW 1/4 of SW 1/4 of section 26 T 17N R 9W

Township

Hersey

County

Osceola

1b. If this is a directional well, bottom hole location will be

NE 1/4 of SW 1/4 of SW 1/4 of section 26 T 17N R 9W

Township

Hersey

County

Osceola

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

1438 ft from nearest (N/S) south section line

1319 ft from nearest (E/W) west section line and

1158 ft from nearest (N/S) north quarter section line

1319 ft. from nearest (E/W) west quarter section line

3. Bottom hole will be (if directional)

839 ft from nearest (N/S) south section line

1142 ft from nearest (E/W) west section line and

839 ft from nearest (N/S) south quarter section line

1142 ft. from nearest (E/W) west 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

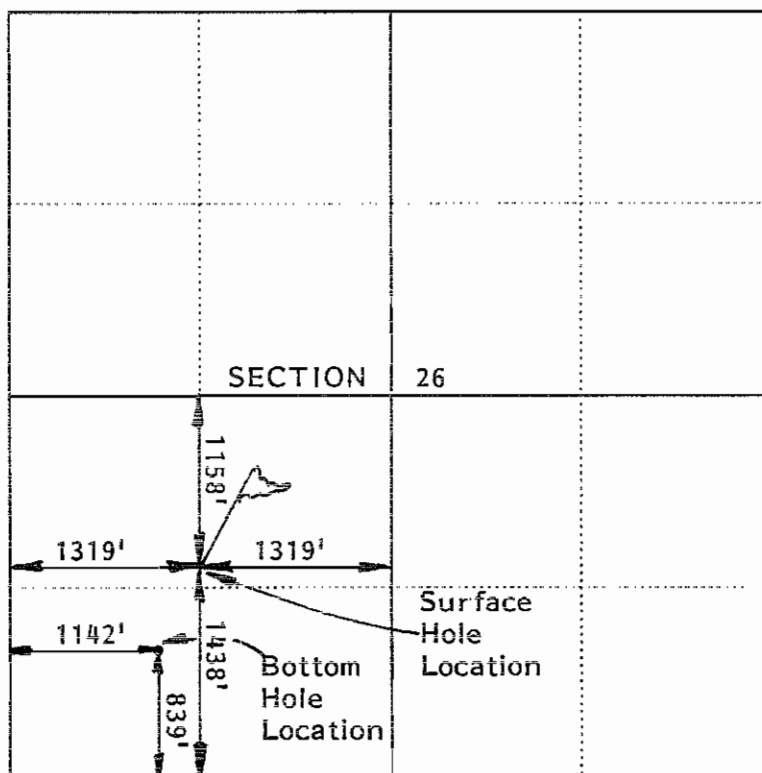
5. Show access to stake on plat and describe if it is not readily accessible. Site can be reached from the East, off of 135th Avenue, along an existing access road to the site

6 Zoning

- ☐ Residential, effective date _____
initial date of residential zoning _____
☒ Other None in effect

PLAT BELOW REPRESENTS ONE FULL SECTION
(1 MILE SQUARE)

N ↑



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 II 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

J. Dean Geers, Prof. Surveyor

Company

Wilcox Associates, Inc.

Date of survey

Address No. 33977

7711 S. US-131 P.O. Box 580 Cadillac, MI 49601

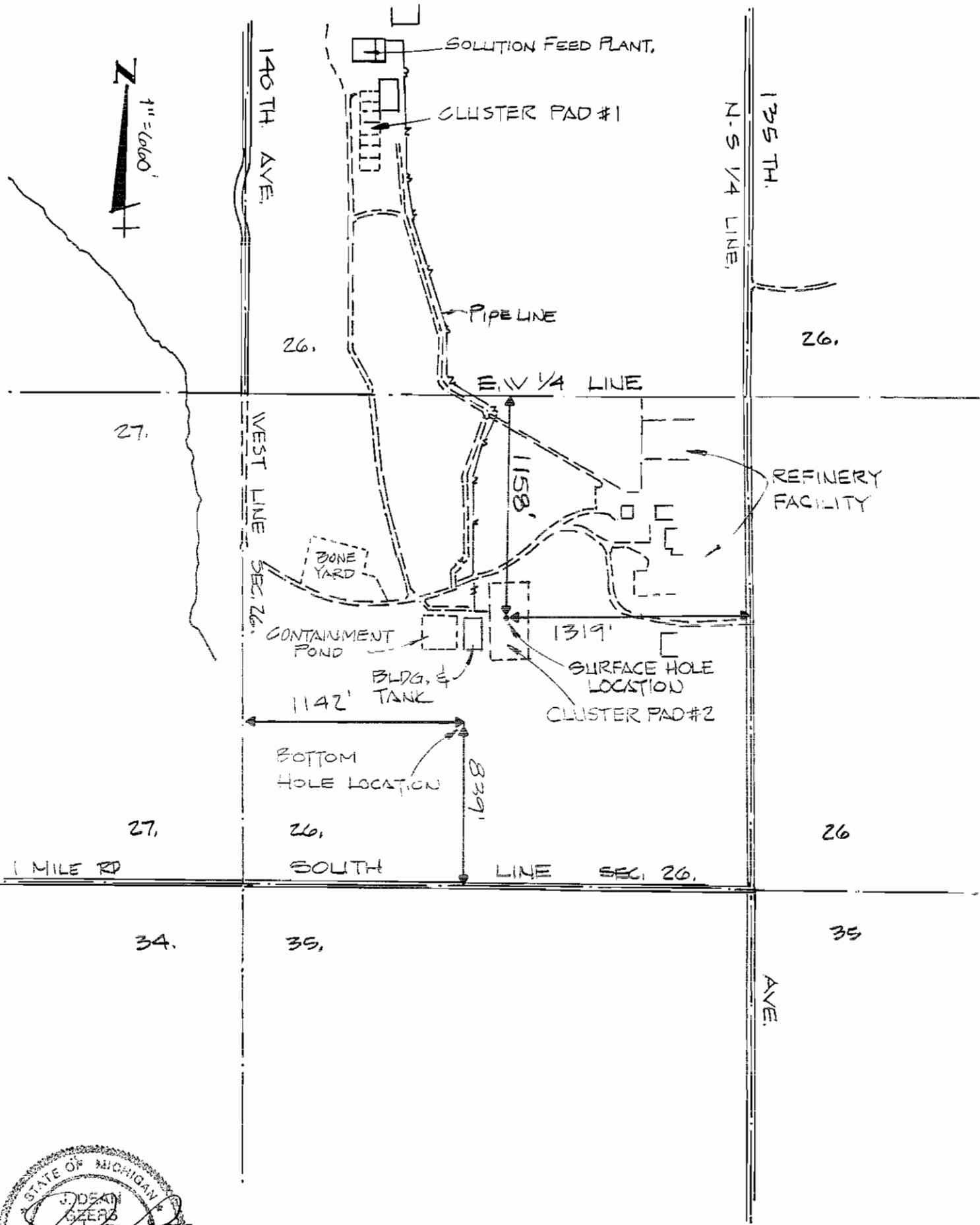
Phone 616-775-7755

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

Signature of licensed surveyor (affix seal)

Date

5-9-97



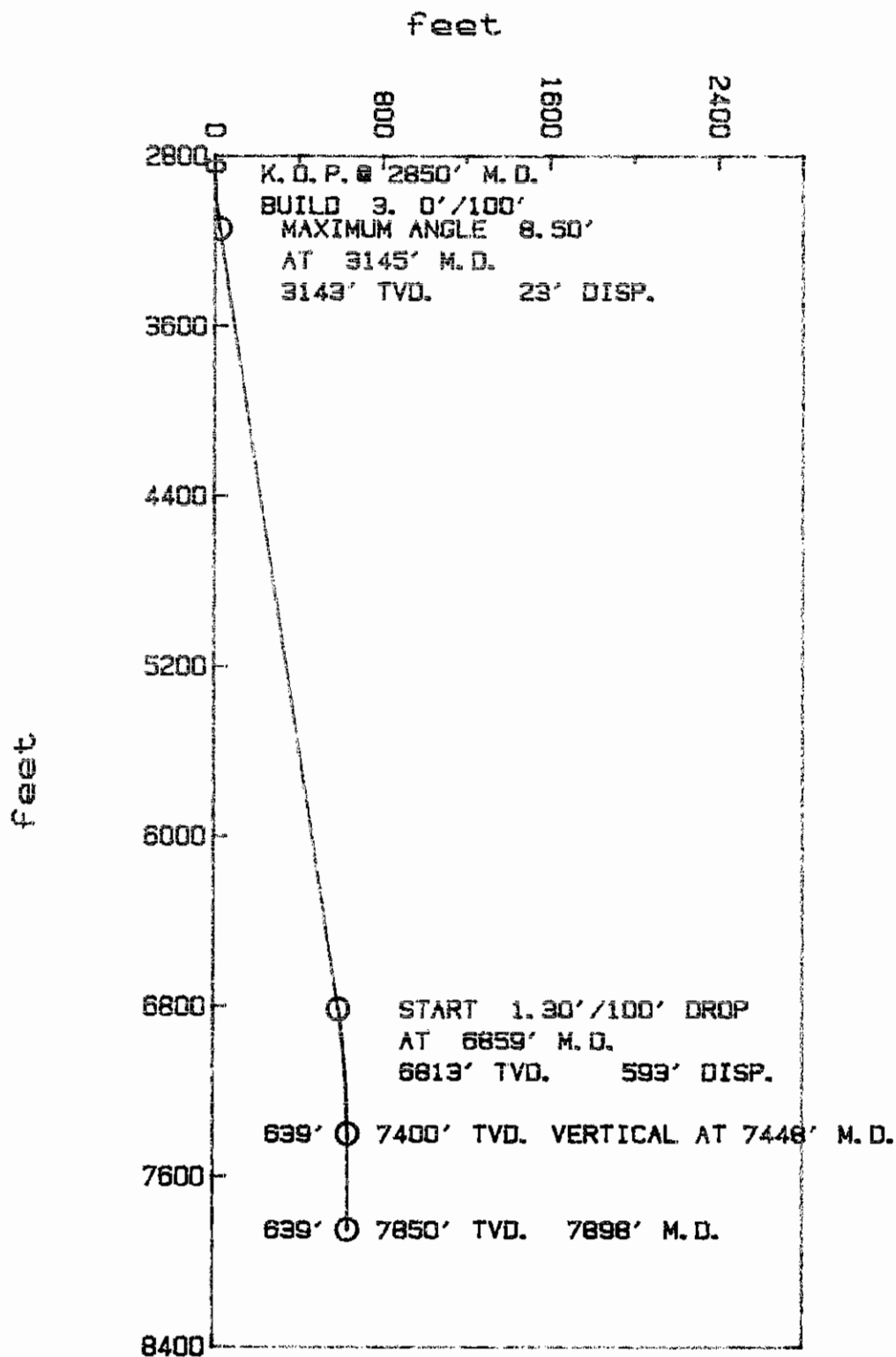
SUPPLEMENTAL PLAT- KALIUM
 HERSEY # 2082 - SEC. 26, T17N, R9W.
 HERSEY TOWNSHIP.
 OSCEOLA COUNTY, MICHIGAN.
 CLIENT: I.M.C. KALIUM LTD.

DATE 5-7-97		Wilcox Associates	
DRN. HAW	CHD JDG	Engineering Surveying and Environmental Sciences	
SCALE V: 1"=660'	NOTES F.B. PG. ~	SHEET 1 OF 1	JOB NO 97244

7711 South US 131
 P.O. Box 580
 Cadillac, MI 49601
 616 775-7755

IMC KALIUM
KALIUM HERSEY # 2082
HERSEY TOWNSHIP , OSCEOLA COUNTY

VERTICAL SECTION 1 IN. = 800 FT.



IMC KALIUM

OBJECTIVE NO. 1:

KALIUM HERSEY # 2082
HERSEY TOWNSHIP , OSCEOLA COUNTY

639' S15.16'W OF
SURFACE LOCATION
7448' M.D. 7400' TVD.
616' SOUTH 168' WEST

PLAN VIEW
1 IN. = 200 FT.

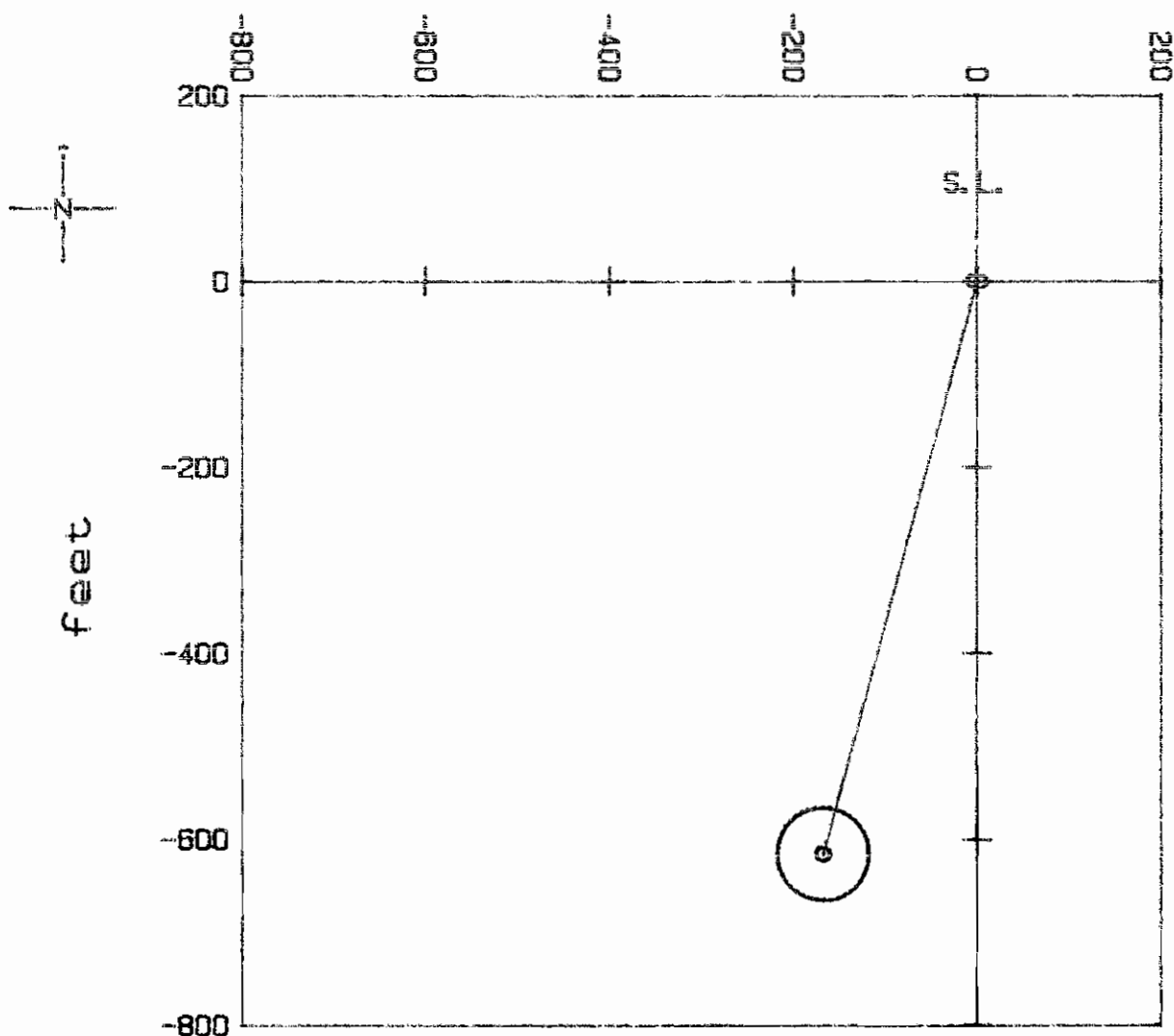
OBJECTIVE NO. 2:

639' S15.16'W OF
SURFACE LOCATION
7898' M.D. 7850' TVD.

SUBMITTED BY:

Directional Drilling Contractors, Inc.

50' RADIUS TARGET
feet





IMC Kalium Chemicals Ltd.

1395 135th Ave.
Hersey, MI 49639



To: Permits and Bonding Unit
Geological Survey Division
Department of Environmental Quality
P.O. Box 30256,
Lansing, MI 48909-7756

Date: May 14, 1997

Casing and Cementing Procedures Kalium Hersey 2082

1. Conductor pipe of 30" diameter will be driven to refusal for this well. (usually 80-90 feet) Surface hole will be drilled with a 17 1/2" bit, 100 feet into the competent rocks of the Michigan Group at a depth of approximately 900 feet. The exact depth will be determined by a certified geologist. New or fully inspected used 13 3/8", 48#/ft., J55 seamless casing will be run to bottom with a Texas pattern shoe. The bottom three joints of casing will be strapped across the collars in three sections. The casing will be cemented with returns to surface. Wait on cement time will be 16 hours.

2. The 12 1/4" intermediate hole will be directionally drilled to 100 feet below the base of the Detroit River Salt at a true vertical depth of approximately 4900 feet, as local drilling shows no lost circulation zones deeper. Intermediate casing, new or fully inspected used 9 5/8" 40#/ft., J or K55, seamless casing will be set at this depth and two stage cemented to surface as per cementers recommendations in line with accepted cementing practices. Wait on cement time will be 16 hours.

3. The 8 1/2" production hole will be drilled into the A-1 Evaporite to a true vertical depth of approximately 7850 feet. The primary objective of this well is the evaluation and production of the potassium chloride and sodium chloride mineralization of the A-1 Evaporite. The evaluation program will consist of coring of appropriate sections of the A-1 Evaporite as well as appropriate geophysical logs. Production casing will be new 7", 23#/ft., L80 seamless casing set in the A-1 Evaporite and cemented back to 5000 feet with premium cement. Wait on cement time will be 24 hours.

4. After well operations cease, it will be plugged and abandoned according to Department of Environmental Quality requirements.

Colin D. Howard
Production Geologist

**ENVIRONMENTAL IMPACT ASSESSMENT**

Required for issuance of well permit pursuant to Part 615, 1994 PA 451, as amended. Falsification of this information may result in fines and/or imprisonment. Check all boxes and fill in all blanks which apply to this drilling application. Attach additional pages as necessary.

A. DESCRIPTION OF PROJECT

1. Applicant's name IMC Kalium, Ltd.	Well name and number Kalium Hersey #2082								
2. Intended use of well Development of potash from the A-1 Evaporite									
3. Applicable spacing order and drilling unit size <table style="width: 100%;"><tr><td>☐ S.O. 14-9-94 N. Mich. Antrim, 80 acres</td><td>☐ S.O. 3-3-95 S. Mich. Antrim, 40 acres</td></tr><tr><td>☐ S.O. 1-73 Niagaran, 80 acres</td><td>☐ S.O. 2-81 Oakland Co. Niagaran, 40 acres</td></tr><tr><td>☐ R 324.301 General rule, 40 acres</td><td>☐ S.O. 1-86 P.D.C., 640 acres</td></tr><tr><td colspan="2">☐ Field Spacing or Unitization Order (identify)</td></tr></table>		☐ S.O. 14-9-94 N. Mich. Antrim, 80 acres	☐ S.O. 3-3-95 S. Mich. Antrim, 40 acres	☐ S.O. 1-73 Niagaran, 80 acres	☐ S.O. 2-81 Oakland Co. Niagaran, 40 acres	☐ R 324.301 General rule, 40 acres	☐ S.O. 1-86 P.D.C., 640 acres	☐ Field Spacing or Unitization Order (identify)	
☐ S.O. 14-9-94 N. Mich. Antrim, 80 acres	☐ S.O. 3-3-95 S. Mich. Antrim, 40 acres								
☐ S.O. 1-73 Niagaran, 80 acres	☐ S.O. 2-81 Oakland Co. Niagaran, 40 acres								
☐ R 324.301 General rule, 40 acres	☐ S.O. 1-86 P.D.C., 640 acres								
☐ Field Spacing or Unitization Order (identify)									
☐ Antrim USP (identify name, number of acres, and number of drilled and permitted wells)									
☐ Administrative exception requested per Rule 324.303 ☐ Subsection 2 or ☐ Subsection 3 Enclose voluntary pooling agreement and plans for development									
☐ Exception to spacing requested, petition for hearing filed									
☒ Non-producing well, no drilling unit									
4. Applicant's right to drill and produce Are all mineral interests in the drilling unit under lease and controlled by the applicant/permittee? ☒ Yes ☐ No ☐ Not applicable, non-producing well ☐ If no, petition filed for compulsory pooling OR ☐ If no, attach certified efforts to obtain leases.									
5. Special considerations ☐ Replacement well for permit no _____ ☒ Existing well pad ☐ Other (describe) _____									

B. IMPACTS AS A RESULT OF DRILLING

1. Dimensions of drill pad <u>N/A</u> x <u>N/A</u>	of access roads <u>N/A</u> x <u>N/A</u>
Describe access route to well during drilling <u>From the intersection of 135th Avenue and One Mile Road, then north along 135th approximately 0.25 miles to the Kalium Facility access road, then westerly approx. 0.25 miles through facility to the existing Cluster #2 Pad and well site.</u>	
2. Describe the topography Identify the direction of and percentage of slope(s): _____	
a. At the well site <u>Existing well pad. No earthwork will be needed.</u>	
b. Along the access to well site - <u>there will be no new access trail needed.</u>	
3. Describe the land cover (type, density, species of trees) and present land use:	
a. At the well site - <u>Existing well pad. No cover. Land use is commercial.</u>	
b. Along access to well site - <u>no new access needed. Land use is commercial.</u>	
4. Identify the distance and direction to any of the following:	
a. All buildings, fresh water wells, public roads, powerlines and other man-made features within 600' of the well site: <u>There are no residences or fresh water wells within 600' of the wellsite. The Kalium Processing Facility lies on land around Cluster #2 Pad.</u>	
b. All Type I and Type IIa public water supply wells within 2000'	
<u>None</u>	
c. All Type II b and Type III public water supply wells within 800' of the well site.	
<u>None</u>	
Type I is a community water supply with year-round service ≥ 15 living units or ≥ 25 residents. Type II is a non-community water supply with ≥ 15 service connections or ≥ 25 individuals for not less than 60 days per year. Average daily water production: IIA ≥ 20,000 GPD IIB <20,000 GPD. Type III is a public water supply which is neither type I or II.	

Part B-4 continued

d. Surface waters, floodplains, wetlands, natural rivers, critical dune areas, threatened or endangered species within 1320' of the well site: None

Are all items in part B-4 are shown on the supplemental plot? ☒ Yes ☐ No

If not, why? _____

5. Identify the source of fresh water used to drill this well

- ☐ "Permanent" water well, to be retained after final completion OR used for drinking water (shall be drilled and installed pursuant to Part 127 of 1979 PA 368, as amended).
- ☐ "Temporary" water well, will be plugged upon final completion and not used for drinking water (consult R 324.403 (2) for minimum construction requirements).
- ☒ Fresh water will be hauled from existing water well or municipal source (identify): Located at Kalium Facility
- ☐ No fresh water will be used in drilling this well.

6. Handling and disposal of drill cuttings and muds

- ☐ On site in-ground pit, anticipated dimensions: L _____ W _____ D _____
- ☐ Remote in-ground pit, anticipated dimensions: L _____ W _____ D _____
Attach approval of landowner and attach survey of remote pit location
- ☐ Temporary pit, cuttings and muds disposed at (identify) _____
- ☒ No in-ground pit, cuttings and muds disposed at (identify) Northern Oaks Landfill
- ☐ Depth to ground water expected 0'- 4' below the base of pit
- ☐ Pit will be solidified.
- ☐ Existing pits on location - identify location _____

C. IMPACTS AS A RESULT OF PRODUCTION

1. Kind of well ☐ exploratory ☒ development ☐ Antrim project

2. Location of surface facilities (Refer to R 324.103 (m))

- ☐ Greater than 300' from wellhead at _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, Sec _____, T _____, R _____ (complete C-3)
- ☒ Surface facility exists or was previously approved for construction and is known as IMC Kalium Potash Fac. (omit C-3)
- ☐ EIA for surface facility is found in another document (Identify where it is found) _____ (omit C-3)
- ☐ Surface facility and all flowlines are within 300' of the wellhead (omit C-3)
- ☐ Surface facility location was not determined for this **exploratory** well (omit C-3). A separate request for surface facility location approval, which will include an Environmental Impact Assessment as well as a Soil Erosion and Sedimentation Control Plan, will be submitted to District Geologist prior to construction pursuant to R 324.504.

3. Surface facility Environmental Impact Assessment (describe or attach supplemental plot identifying the following)

- a. Dimensions of surface facility: _____
- b. Access route to the surface facility _____
- c. Route of flow lines from well(s) to surface facility _____
- d. Topography, direction, and percentage of slopes at the surface facility _____

Part C-3 continued

e. Land cover and present land use at surface facility _____

f. Distance and direction to all buildings, fresh water wells, public roads, power lines and other man-made features within 600' of surface facility _____

g. Distance and direction to any surface waters, floodplains, wetlands, natural rivers, critical dune areas threatened or endangered species within 1320' of the surface facility site. _____

h. Distance and direction to all Type I and Type IIa public water supply wells within 2000' of the surface facility site and all Type IIb and Type III wells within 800' of the surface facility _____

Type I is a community water supply with year-round service ≥ 15 living units or ≥ 25 residents. Type II is a non-community water supply with ≥ 15 service connections or ≥ 25 individuals for not less than 60 days per year. Average daily water production: IIA $\geq 20,000$ GPD IIB $< 20,000$ GPD Type III is a public water supply which is neither type I or II.

4. Method of brine disposal

- ☐ Dedicated flow line to _____ disposal well, permit number _____
- ☐ Tanked and hauled to disposal well.
- ☒ Other Used in production process (Salt refinery)

5. Method of transporting hydrocarbons past the point of sale

- ☐ Oil sold through transmission line ☐ Gas sold through transmission line
- ☐ Oil tanked and hauled ☐ Gas flared on site (production restrictions may apply)

D. MITIGATION OF IMPACTS FROM DRILLING AND/OR PRODUCTION

Describe measures to be taken to protect environmental and/or land use values

Site is an existing well pad with containment measures, which will be maintained and utilized for potash development

for years in the future.

E. ATTACH SOIL EROSION AND SEDIMENTATION PLAN

(FORM 7200-18) (REFER TO REQUIREMENTS UNDER PART 91 1994 PA 451)

F. ALTERNATE WELL AND SURFACE FACILITY LOCATIONS

Were alternate surface locations considered for this well or surface facility?

- ☒ No, alternate sites did not seem necessary or more desirable
- ☐ Yes, the following locations were considered _____

Why were they rejected in favor of the proposed location? _____

CERTIFICATION "I state that I am authorized by said applicant to prepare this document. It was prepared under my supervision and direction. The facts stated herein are true, accurate and complete to the best of my knowledge."

Colin Howard

Name and title (printed or typed)

PRODUCTION GEOLOGIST

Authorized Signature

[Signature]

Date

5/20/97

ENCLOSE WITH APPLICATION FOR PERMIT TO DRILL

**SOIL EROSION & SEDIMENTATION
CONTROL PLAN**

By authority of Part 91, and 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

☐ Part 615 Oil/Gas Well ☒ Part 625 Mineral Well

1 Name and address of applicant

IMC Kalium, Ltd.
1395 135th Avenue
Hersey, MI 49639

Phone: (616)832-3755

Fax: ()

2 Well or project name:

Kalium Hersey #2082

3 Well or project location:

Section(s) 26

T17N

R9W

4 Name and address of County or local Enforcement Agent (CEA)

Osceola County Soil Erosion Control

Courthouse

301 W. Upton Avenue

Reed City, MI 49677

Phone: (616) 832-3261

Fax: ()

5 Township

Hersey

6 County

Osceola

7 Date earth changes expected to start

Not Applicable

8 Date of expected completion

Not Applicable

9 Name and address of person responsible for earth change:

Not Applicable

10 Name and address of person responsible for maintenance:

Not Applicable

Phone: ()

Fax: ()

Phone: ()

Fax: ()

11 Send copies of supplemental plat required by Part 615, R 324 201(2)(b) or R 324 504(4), and this form and all attachments to CEA

Date sent to CEA 5/20/97

EARTH CHANGE ACTIVITIES

12. Project description: (Project activities may be permitted sequentially.)

a Number of well sites N/A, N/A acresd. Flow line(s) trenched in off well site* N/A feet, N/A acresb Number of surface facility sites N/A, N/A acrese Flow line(s) plowed in off well site* N/A feet, N/A acresc. New access roads N/A feet, N/A acres

*Contact CEA for fee schedule

13 Describe sites for which permits are being sought under Part 301 (Inland Lakes & Streams) NoneDescribe sites for which permits are being sought under Part 303 (Wetlands) None

List file numbers if known

14 Areas requiring control structures

Will earth changes occur in areas with slopes of 10% or greater; areas where runoff water is likely, such as runs greater than 500' of moderate slope (5% to 10%), narrow valley bottoms etc.; areas within 500' of a lake or stream; or other areas where sedimentation to a wetland or drainage way may occur?

☐ Yes Attach detail map at scale of 1"=200' or larger, with contour lines at a minimum of 20' intervals OR percent slope descriptions.

Also indicate any of the following erosion control structures that will be utilized Identify location on map and attach detail plan

Indicate on plan whether erosion control structures are temporary or permanent

☐ Diversions ☐ Culverts ☐ Sediment basins ☐ Silt fences ☐ Rip-rap ☐ Berms ☐ Check dams ☐ Other☒ No

15. Site restoration

☐ Topsoil will be segregated from subsoil and stockpiled OR ☐ No topsoil on site☐ Recontour and revegetate as soon as weather permits Seed mix Not Applicable☐ Describe other proposed methods of restoration

16 Application prepared by (name)

Colin Howard

Signature

Date

FOR USE OF COUNTY OR LOCAL ENFORCING AGENT

INSTRUCTIONS TO COUNTY OR LOCAL ENFORCMENT AGENT: Return this form to the applicable field or district office of the Geological Survey Division within 30 days of receipt Explain reasons for recommendation or disapproval and conditions required for approval Include copies of any revisions to the plan

17 Comments

☐ Conducted on site inspection

Date

☐ Inspected site with representative of applicant

Date

18 ☐ Approved ☐ Disapproved

CEA signature

Date

WELLHEAD BLOWOUT CONTROL SYSTEM

Worksheet supplement for "Application for Permit to Drill or Deepen a Well"

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

Applicant

IMC Kalium, Ltd.

Well name and number

Kalium Hersey #2082

Max. anticipated surface pressure 1,000#Annular B.O.P. 13 3/8" 5000# W.P.

B.O.P.
☐ Manual
☒ Hydraulic
☒ Sour Trim

B.O.P. Pipe Rams 13 3/8" 5000# W.P.
(Pipe/Blind)B.O.P. Blind Rams 13 3/8" 5000# W.P.Check Valve 2" 5000# W.P.

(Pipe/Blind)

Valve 3" 5000# W.P.Valve 2" 5000# W.P.Valve 2" 5000# W.P.Valve 3" 5000# W.P.

Kill Line Manifold

Manifold Line

Spool 13 3/8" 5000# W.P.Line 2" 5000# W.P.Wellhead 3000# W.P.

Fill above blanks with applicable information. If not applicable, enter "N.A." or cross-out item shown.
Describe test pressures and procedure for conducting pressure test. Identify any exceptions to R324 406 being requested.

Blowout prevention equipment will be tested to a pressure commensurate with the expected formation pressure, but not less than 1,000 psig at surface, for not less than 20 minutes before drilling the plug on the surface casing, intermediate casing and the production casing and before encountering all high-pressure formations and at other intervals as approved or requested by the Supervisor of Wells.

SOUR GAS CONTINGENCY PLAN - PART II
IMC KALIUM, LTD.
KALIUM HERSEY #2082
SECTION 26, T17N, R9W
HERSEY TOWNSHIP, OSCEOLA COUNTY, MICHIGAN

RESIDENTS WITHIN 1/4 MILE OF WELLSITE

1 IMC Kalium, Ltd
Refinery
Phone: 616-832-3755

EMERGENCY TELEPHONE NUMBERS

<u>Name</u>	<u>Location</u>	<u>Number</u>
Kalium Company Personnel		
Mr Rob Plosz	Hersey, MI (Office)	616-832-3755
Mr Paul McMillen	Hersey, MI (Office)	616-832-3755
MDEQ		
Cadillac District Geologist	Cadillac, MI	616-775-3960
Mr Ray Vugrinovich	Lansing (Office)	517-334-6945
	Lansing (Home)	517-339-9547
Sheriff	Osceola County	911
State Police	Cadillac, MI or Big Rapids, MI	911 616-832-2221
Ambulance / Emergency	Osceola County	911
Hospital	Reed City Hospital 7665 S. 220th Avenue Reed City, Michigan	911 or 616-832-3271
Director of Emergency Services		
Dallas Jenks	Osceola County (Office) or in an emergency	616-832-6172 911
Fire Department	Osceola County	911

Pollution Emergency Alerting System (PEAS)

800-292-4706

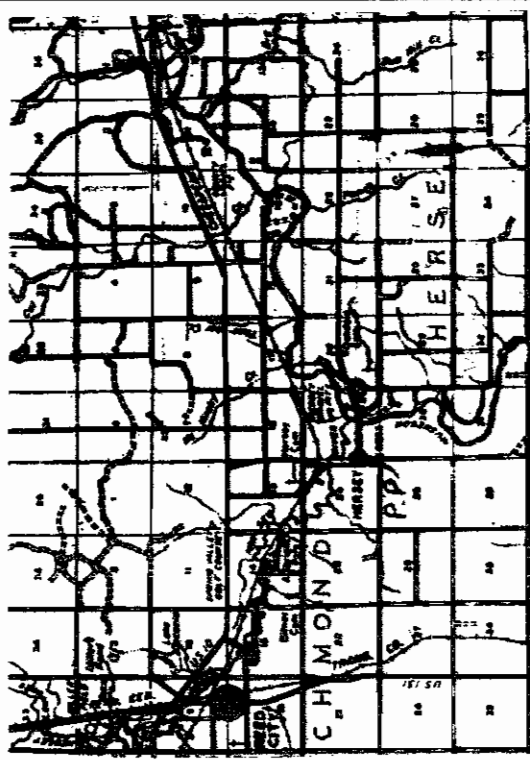
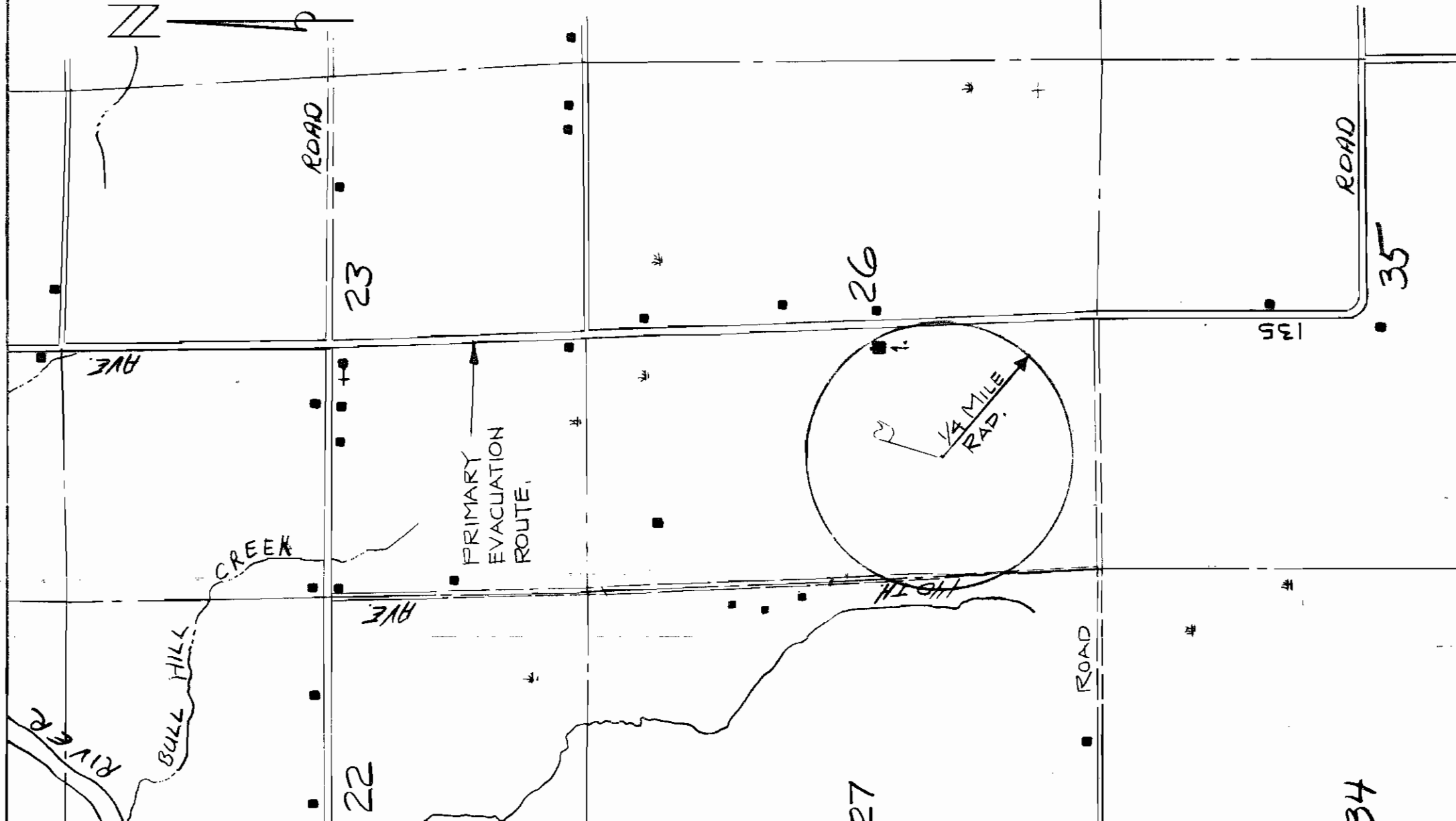
NEAREST PUBLIC TELEPHONE

The nearest public telephone is located in front of the General Store in the Village of Hersey. This is located approximately 1/4 mile east to 135th Avenue, then north on 135th Avenue approximately 3/4 mile, then west approximately 4-1/2 miles on Hersey Road to 180th Avenue.

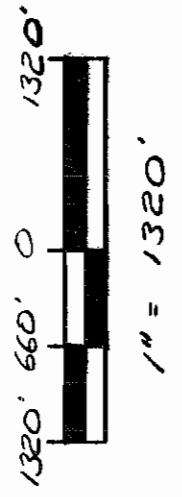
MUD TREATMENT

A gas buster will be provided

Note: For locations of residences, public gathering places, and evacuation routes, see Vicinity Map.



PROJECT LOCATION
LOCATION MAP
NO SCALE



LEGEND

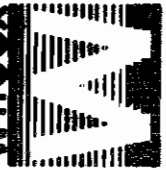
P.P = PUBLIC TELEPHONE

SCALE NO.	END DATE
D.S. ENCL.	DATE
TOPO ENCL.	DESIGN
PROFILE ENCL.	END. ENCL.
APPROVED F.H.T.	SCALE V: 1/4" = 1320'

MAP DEPICTING RESIDENCES, PUBLIC
GATHERING PLACES AND EVACUATION
ROUTE @ KALIAM HERSEY #2082
SECTION 26 T17N, R20W,
HERSEY TOWNSHIP,
OSCEOLA COUNTY, MICHIGAN

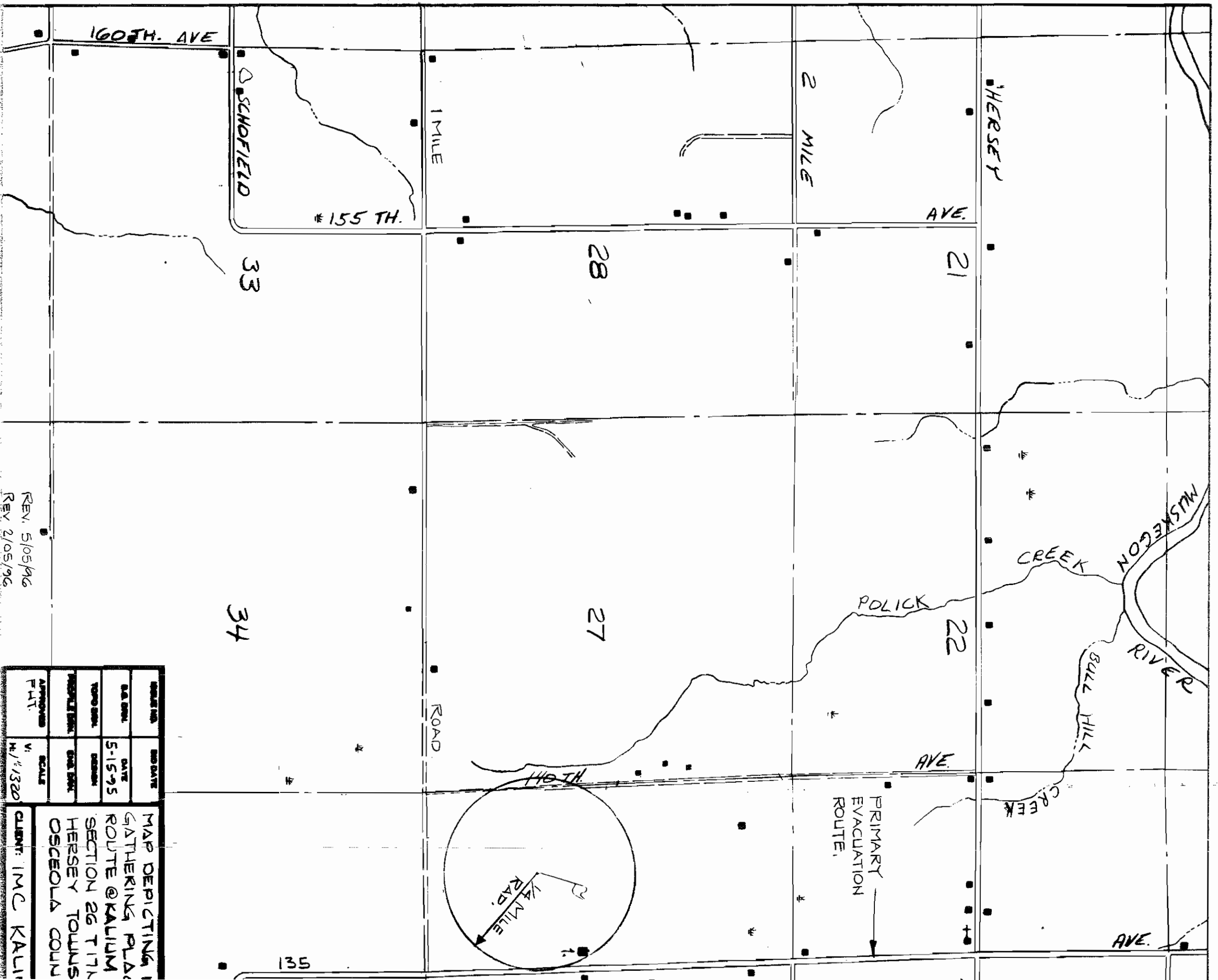
CLIENT: IMC KALIAM, LTD.

Wilcox Associates, Inc.



7711 South U.S. 131
P. O. Box 580
Cadillac, MI 49801
818 775-7755

FIGURE	LEVEL	DATE	JOB NO.
1	1	1	97244



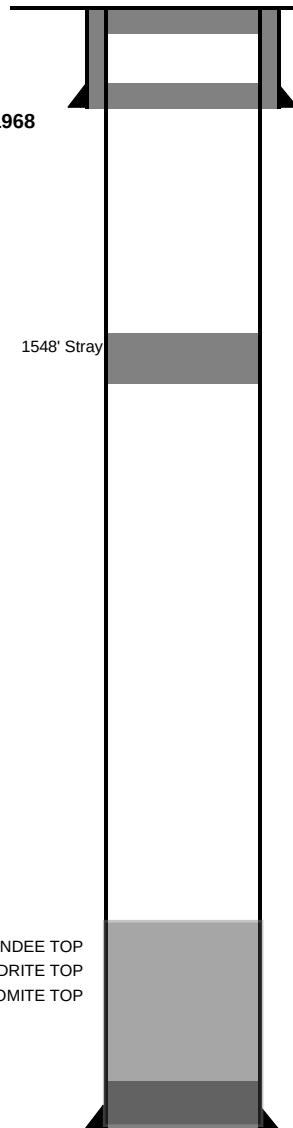
SCALE (IN)	END DATE
0.5 INCH	DATE
1.0 INCH	5-15-95
2.0 INCH	DESIGN
4.0 INCH	DATE
8.0 INCH	SCALE
16.0 INCH	VI 1/320
APPROVED	CLIENT: IMC KALIN
PH. 1.	

MAP DEPICTING
GATHERING PLACE
ROUTE @ KALIN
SECTION 26 T17K
HERSEY TOWNS
OSCEOLA COUNT

MADDERN 1
SE NW SE Sec 30 T17N R8W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

PERMIT No. 27159
API No. 21-133-27159-00-00
GL @ 1146'
KB @ 1161'
WELL COMPLETION DATE: 2/27/1968
PLUGGING COMPLETION DATE: 2/27/1968

UPDATED APRIL 2014 BY JLT



10-5/8" Hole expected

SURFACE CASING

8-5/8", 32#/ft.

SET @ 914' KB

500 SX CMT + 20 SX in top of cellar

PLUGGING

Run drill pipe to TD (4030') and spot 35 SX CMT on bottom.

Pull drill pipe to 1600', spot 35 SX CMT through Stray.

Pull drill pipe to base of the 8-5/8" surface pipe, spot 20 SX CMT

Pull remainder of drill pipe.

8-5/8" surface pipe abandoned with the well.

Cut pipe off 3' below ground level, spot 5 SX CMT.

3890' DUNDEE TOP
3953" REED CITY ANHYDRITE TOP
3968" REED CITY DOLOMITE TOP

TD @ 4030' KB

MADDERN 1 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
1/31/1968	SPUD.
2/22/1968	DRILLING COMPLETED.
	8 5/8" SET AT 914'; 500 SX CMT + 20 SX in top of cellar
2/12/1968	Run drill pipe to TD (4030') and spot 35 SX CMT on bottom.
2/27/1968	Pull drill pipe to 1600', spot 35 SX CMT through Stray.
	Pull drill pipe to base of the 8-5/8" surface pipe, spot 20 SX CMT
	Pull remainder of drill pipe.
	8-5/8" surface pipe abandoned with the well.
	Cut pipe off 3' below ground level, spot 5 SX CMT.
2/27/1968	PLUGGING COMPLETED

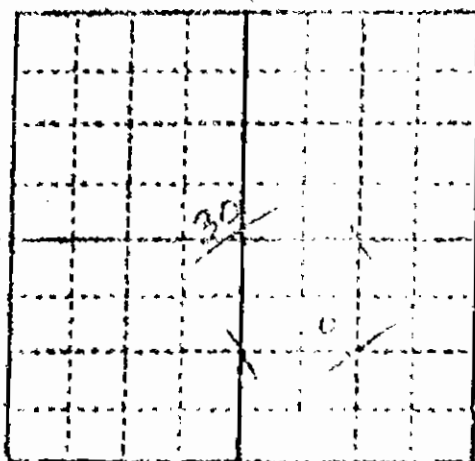
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:
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APPLICATION FOR PERMIT TO DRILL A WELL FOR OIL, GAS, GEOLOGICAL TEST, BRINE DISPOSAL, GAS OR L.P.G. STORAGE OR FOR SECONDARY RECOVERY

UNDER AUTHORITY OF ACT 61, P.A. OF 1939, AS AMENDED, AND ACT 326, P.A. OF 1937, AS AMENDED.

STATE OF MICHIGAN
SUPERVISOR OF WELLS
GEOLOGICAL SURVEY
MICHIGAN DEPARTMENT OF CONSERVATION
LANSING, MICHIGAN 48926

See Reverse Side Before Filling Out This Application



LOCATE WELL AND OUTLINE LEASE OR UNIT ON SECTION PLAT - 640 ACRES

14. ACRES IN LEASE OR UNIT (SPECIFY)
40-Acre Unit

1. APPLICATION TO DRILL A WELL FOR:
GAS AND OIL

2. DATE

1-18-58

3. FEE ENCLOSED
\$ 25.00

4. LESSEE (OWNER OF LEASE RIGHTS)

Michigan Consolidated Gas Company

5. PERMANENT ADDRESS

One Woodward Avenue, Detroit, Michigan 48226

6. PHONE

313 + 964-8000

7. LESSOR (FULL NAME OF OWNER OF MINERAL RIGHTS)

H. MADDOX

8. WELL NO.

1

9. SURFACE OWNER (IF OTHER THAN MINERAL OWNER)

10. DRILLING CONTRACTOR

Company

11. ADDRESS

Reed City, Michigan

12. PHONE

616 + 832-5651

13.

SE 1/4 of NW 1/4 of SE 1/4 Section 30 T 17N R 8W

15. TOWNSHIP

Evart

16. COUNTY

Osceola

17. Locate well in two directions from nearest line of quarter section and property ownership or unit lines

910 FT. FROM North LINE OF QUARTER SECTION
(north-south)
910 FT. FROM North (PROPERTY LINE)
(north-south)

990 FT. FROM West LINE OF QUARTER SECTION
(east-west)
330 FT. FROM East (PROPERTY LINE)
(east-west)

18. KIND OF TOOLS TO BE USED

(Cable, rotary, combination) - Rotary

19. WELL IS TO BE

COMPLETED IN

Reed City Zone

FORMATION

20. INTENDED DEPTH OF WELL

3900 feet

21. PROGRAM OF CASING, SEALING, CEMENTING AND COMPLETING WELL

Approximately 700 feet of 8-5/8 inch casing will be set and cemented to surface. If productive, 5 1/2 inch casing will be set through the productive zone and cemented. Proper wellhead control equipment will be used while drilling and completing well.

CASING IS NOT TO BE STRIPPED FROM THE HOLE AND NO CHANGE IS TO BE MADE IN THE PROGRAM OUTLINED ABOVE WITHOUT APPROVAL OF THE SUPERVISOR OF WELLS OR HIS AUTHORIZED REPRESENTATIVE

22. ARE THERE ANY LAKES, STREAMS, DRAINAGE DYES, SWAMPS, OR MARSHES NEARER THAN 300 FEET FROM WELL LOCATION?

Yes ☐ No ☒

23. ARE THERE ANY BUILDINGS OR OTHER STRUCTURES WITHIN 75 FEET OF THE PROPOSED LOCATION?

Yes ☐ No ☒

24. IF ANSWER TO No. 22 ABOVE IS Yes, DESCRIBE AND GIVE DISTANCE FROM LOCATION.

APPLICANT AGREES TO COMPLY WITH THE PROVISIONS OF ACT 61, PUBLIC ACTS OF 1939, AS AMENDED, AND ACT 326, PUBLIC ACTS OF 1937, AS AMENDED, AND RULES AND REGULATIONS PERTAINING TO THE LOCATING, DRILLING, CASING, SEALING, COMPLETING, PRODUCING, AND PLUGGING OF WELLS. BEFORE COMMENCING DRILLING OPERATIONS, CONTACT THE NEAREST FIELD OFFICE. (See reverse side)

25. ADDRESS CORRESPONDENCE H. O. Ankerberg, Michigan Consolidated Gas Company
AND PERMIT TO Route 2, Box 103-B, Reed City, Michigan

26. PHONE

616 + 832-5651

LEAVE BLANK

DATE ISSUED

PERMIT NO.

27. OWNER OF

LEASE RIGHTS

28. AUTHORIZED

REPRESENTATIVE

MICHIGAN CONSOLIDATED GAS COMPANY

John A. Vary - JAV

DISTRIBUTION

1. WHITE - LANSING
2. CANARY - CASHIER
3. BLUE - FIELD

4. GOLDENROD - FIELD
5. GREEN - APPLICANT

1052 3 V - - - 11 502526 87-61-LV

POWER DIVISION - BOX 30028 - LANSING, MI 48202

STATE OF MICHIGAN
DEPARTMENT OF CONSERVATION No. 8935
SUPERVISOR OF WELLS

PERMIT TO DRILL A WELL FOR OIL OR GAS

(POST WHITE COPY OF PERMIT AT WELL LOCATION)

Permit No. 27159

Date Issued January 22, 1968

Permission is hereby granted to

Michigan Consolidated Gas Company

Owner

One Woodward Avenue, Detroit, Michigan 48226

Address

Lessee Name H. Haddorn

Well Number One

To drill a well for

Gas and Oil

In the SE 1/4 SE 1/4 of Section 30, T.17N., R.8W., Ewart Twp., Oceola Co.

and located 940' from the north and 990' from the west line of quarter section.

and located 940' from the north and 330' from the east property line

This permit is issued subject to the provisions and requirements of Act 61, P. A. 1939 and Act No. 328, P. A. 1937, as amended, and rules, regulations, requirements, or orders issued by the Supervisor of Wells and Department of Conservation.

GERALD E. EDDY, SUPERVISOR OF WELLS

By Robert M. Ackers

SPECIAL REQUIREMENTS

NOTICE

DRILLING PERMIT ISSUED on the basis of the drilling, casing and sealing program as outlined on the application for permit and subject to special requirements as set forth above. No change or alteration is to be made without the permission and approval of the Supervisor of Wells or his authorized representative.

DRILLING OPERATIONS ARE NOT TO BE COMMENCED until all the well location requirements have been completed and the permit has been posted in a conspicuous place at the well site.

DEPARTMENT OFFICES

Lansing, Phone 517-373-1256
Mount Pleasant, Phone 517-773-8691
Cadillac, Phone 616-775-3181

Plainwell, Phone 616-683-8031
Imley City, Phone 313-724-7015
Escanaba, Phone 906-786-0333

PERMITS MAY BE TRANSFERRED ONLY WITH THE PERMISSION OF
THE SUPERVISOR OF WELLS

-1-

MICHIGAN DEPARTMENT OF CONSERVATION
GEOLOGICAL SURVEY DIVISION

SURVEY RECORD OF WELL LOCATION

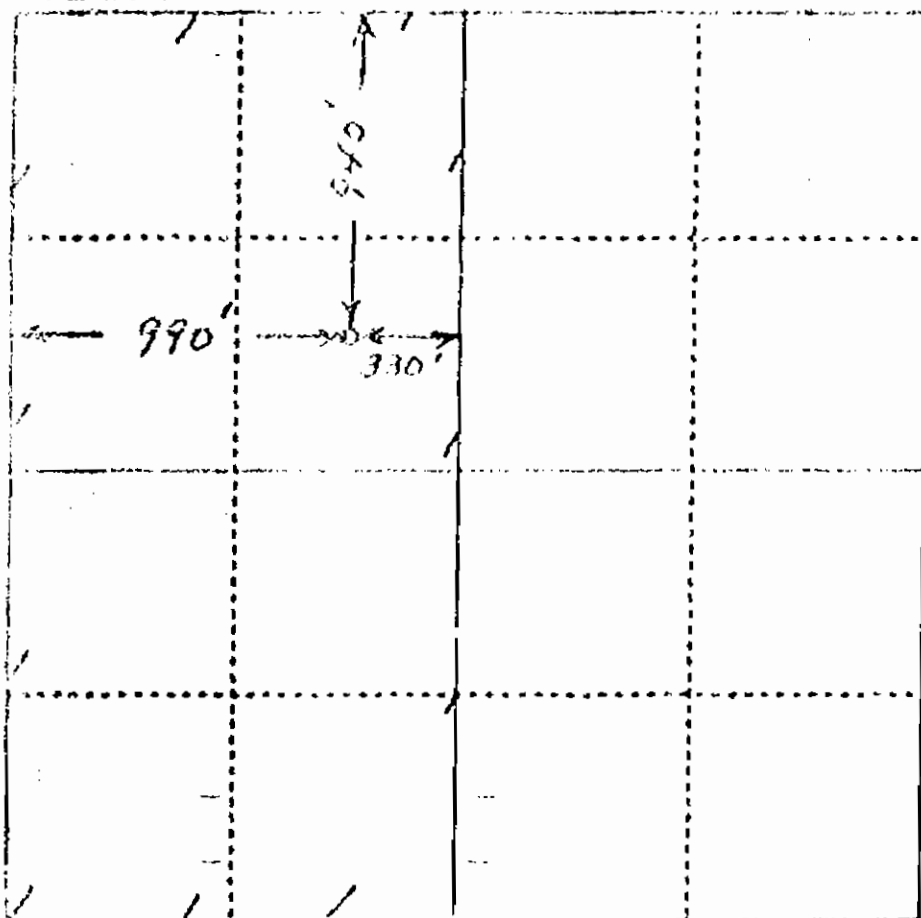
(Submit in triplicate with Application for Permit to Drill a Well for Oil, Gas,
Geological Test, Bore Disposal, or Key Well for Secondary Recovery)

Operator Michigan Consolidated Gas Co.

Well Name H. M. Mason

Number 1

Location Description SE 1/4 of NW 1/4 of SE 1/4 of Section 30, T 17 N, R 8 E
Quarter Section (160 acres more or less)



(Scale of plat = 1 inch equals 660 feet)

1. Locate well site and show acreage in lease.
2. Locate well in two directions from nearest quarter section lines and from nearest lease or ownership property lines.

940 ft. from North line of quarter section.
(north-south)

990 ft. from West line of quarter section.
(east-west)

940 ft. from North lease or property line.
(north-south)

330 ft. from East lease or property line.
(east-west)

3. Is location staked? yes
If location is not staked, describe how it is identified

4. Type of land and cover Open grass land
(open farm land, grass, brush, timber, etc.)

5. Are any lakes, streams, swamps, drainageways, etc., within 300 feet of well site? no If yes, locate on survey plat, show distance from site and give brief description. This location was staked 50' north of regular location because of sidehill conditions.

6. Are any roads, power lines, regularly used buildings, etc., within 75 feet of well site? no If yes, locate on survey plat, show distance from site and give brief description.

Surveyed by Michigan Elevation Service

January 10, 1968

Address of Surveyor John W. Dwyer

CERTIFICATION: I certify the above information is complete and I swore to the best of my knowledge and belief.

MICHIGAN CONSOLIDATED GAS COMPANY

Owner of Lease Rights

January 18, 1968

Signature

John A. Vary-JRE
Authorized Representative

Date

APR 8

WELL LOCATION REPORT

Permit No. 22159Operator Michigan Consolidated Gas Co.Farm Name H. Madden #1Notification M.C.G.C. called to inform concerning drilling.Nature of Location Open grass land.Condition of Pits OK.Distance from Water No water.

Remarks Location on top of a steep grade. Moved stake 50' north to give better
clearance. Approval given after completing well. Well completed Feb. 22, 1968
— a dry hole.

Approved by

Russell Niles

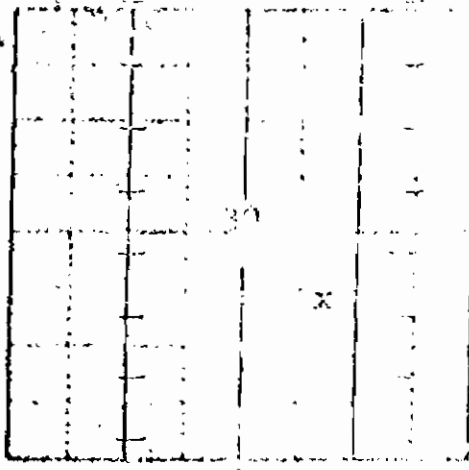
Date

April 3, 1968

MAR 2 1968

LOG OF OIL GAS OR TEST WELL

TO BE FILED WITH SUPERVISOR OF WELLS WITHIN 30 DAYS
AFTER COMPLETION OF WELL (ACT 81 P. A. 1958
AND ACT 328 P. A. 1957)



LOCATE WELL APPROXIMATELY

Drill No. 27159 Deepening No.

Owner or Operator Michigan Consolidated Gas Company

Address One Woodward Avenue - Detroit, Michigan 48226

Well Name J. M. Madden

Township Ewart County Osceola

R.B. 1160

ORN 1145.5

Location SE NW SE Sec 30 Top 176 Range 0W Elevation

Footage 940 ft. from North line and 990 ft. from West line of quarter section

Type of well Dry Hole Total depth 1025 Completed in Reed City Formation

(OIL, GAS, BRINE DISPOSAL, DRY HOLE)

Name of producing formation Top of formation

Date drilling Date drilling Date well

began Jan. 31, 1968 completed February 22, 1968 completed February 27, 1968

Drilling contractor Michigan Consolidated Gas Co. Address One Woodward Avenue - Detroit, Michigan

WATER ZONES				OIL OR GAS ZONES				DEVIATION SURVEY		
NAME	FROM	TO	AMOUNT	NAME	FROM	TO	AMOUNT	RUN AT	DEGREES	

CASING AND CEMENTING				STEEL LINES RUN		
SIZE	WHERE SET	CEMENT	WT. PULLED	RUN AT	CORRECTED TO	RUN BY
8-5/8"	224'	500		31497	No Correction	Strapped Drill Pipe

PERFORATIONS				ACID OR SHOOTING RECORD			
DATE	FROM	TO	NO. HOLES	DATE	FROM	TO	GAL. ACID OR OIL, NITRO

Motary tools from 0 feet to 1030 feet. Cable tools from feet to feet.

Natural initial production first 24 hours 12.1. After acid or shot Bbls.

If gas well, cu ft. per 24 hours. Back pressure, lbs. per sq. in.

The above information is complete and correct.

Date 3/19/68

Signed R.O. Ankerberg
Drilling Supt.

MAR 22 1959

T.D. 4030 feet
in Reed City Zone30-17N-3W
Evert Twp., (Oscoda Co.)

#1 Maddern

Michigan Consolidated Gas Company

Permit #27159

Drilling Contractor: Michigan Consolidated Gas Company (Rig #1)

Location: SE NW SW Section 31-17N-3W
940' from North line and 920' from West line of Quarter Section

Elevation: 1160 R.B. 1157 R.F. 1145.5 G.M.

Record By: Gordon Biebee from rig samples and driller's log

Driller's Log

		PLEISTOCENE:
0 -	75	Clay
75 -	252	Drift, clay, with sand streaks
252 -	565	Clay and Gravel
565 -	592	Shale, gray
		PERMIAN:
		Red Beds:
592 -	625	Red clay and gypsum
625 -	645	Limestone, shells and gypsum
		MISSISSIPPIAN:
		Saginaw Series:
645 -	790	Clay and sand

Sample Description:

790 -	800	Shale, reddish brown, sticky, sand and gravel contamination
800 -	810	Shale, reddish brown, plastic, soft
810 -	820	Shale as above; Clay, gray
820 -	830	Shale 60% reddish as above; Sandstone 40% gray, 0.1 to 0.2 MM grain size, subrounded, medium cemented with dolomite, well sorted
830 -	840	Free sand grains 80%, and some pieces of Sandstone, frosted, 0.2 to 0.4 MM grain size, subrounded, sample looks gray; Shale 20% dark gray
840 -	850	Shale 60% dark gray; Dolomite 10% dark brown, microcrystalline trace; Sandstone 30% gray, 0.1 MM grain size, subrounded - well cemented with dolomite, white
850 -	860	Shale, dark gray; Sandstone, off white, 0.1 to 0.25 MM grain size, fair sorting, subrounded, poorly cemented; Sandstone seems to be interbedded with Shale, gray and Siltstone, gray
860 -	870	As above, slight increase Sandstone
870 -	900	Sandstone, off white, 0.1 to 0.2 MM grain size, subangular, well sorted, fair cemented with dolomite, Shale, trace, gray
900 -	915	Sandstone, off white and free sand grains, 0.1 to 0.3 MM grain size, subrounded, fair cemented with dolomite, medium sorted
915 -	920	Shale 50% gray, silty; Siltstone 50% gray
920 -	930	Sandstone, off white 70%, 0.1 to 0.15 MM grain size, subangular, well sorted, fair cemented with lime; Shale 30% gray

Parma Sandstone:
930 - 950 Shale 50% black, hard; Sandstone 40% off white, 0.2 to 0.4 MM grain size, subrounded, poorly cemented with dolomite, poor sorting, porous; Dolomite 10% tan to brown, microcrystalline, sandy
950 - 960 Sandstone, off white, 0.1 MM grain size, well sorted, subangular, well cemented with white dolomite; Dolomite, trace, brown, very finely sucrosic
960 - 970 Shale, black
970 - 990 Shale, dark gray; Dolomite, trace, brown, microcrystalline
990 - 1000 Shale, light gray, hard, silty
1000 - 1010 Shale as above; Dolomite 10% buff to brown, microcrystalline
1010 - 1100 Shale, dark gray; Dolomite, trace, buff to brown, microcrystalline
1100 - 1150 Shale, dark gray

MISSISSIPPIAN:

Bayport Limestone:

1190 - 1200 Limestone, brown, microcrystalline, many included sand grains
1200 - 1210 Limestone, brown
1210 - 1220 Limestone 60% brown; Sandstone 40% off white, 0.2 to 0.8 MM grain size, subangular, medium cemented with lime, medium sorted
1220 - 1230 Limestone, brown; Shale, gray; Sandstone, trace as above

Michigan Series:

1230 - 1240 Shale 70% gray; Anhydrite 30% white; Dolomite, trace, gray, microcrystalline
1240 - 1250 Shale, gray; Anhydrite 20% white
1250 - 1300 Shale 75% gray; Anhydrite 20-25% white
1300 - 1350 Shale, gray; Anhydrite 20-25% white and pink
1350 - 1370 As above, increase Anhydrite, pink

Triple Gypsum: 1366 (SJ)

1370 - 1380 Anhydrite, white
1380 - 1390 Anhydrite 50% white; Shale 50% gray
1390 - 1395 Shale 70% gray; Anhydrite 30% white
1395 - 1400 Shale 80% gray; Anhydrite 20% white
1400 - 1410 Shale 60% gray; Anhydrite 40% white
1410 - 1415 Shale 75% gray; Anhydrite 25% white
1415 - 1420 Shale 85% gray; Anhydrite 15% white
1420 - 1425 Shale 90% gray; Anhydrite 10% white
1425 - 1430 Shale 75% gray; Anhydrite 25% white
1430 - 1435 Shale 65% gray; Anhydrite 15% white; Dolomite 20% brown, microcrystalline
1435 - 1440 Shale 80% gray; Dolomite, trace as above; Anhydrite 20% white

Brown Limestone: 1440 (SJ)

1440 - 1445 Anhydrite 80% white; Shale, trace, gray; Limestone 20% brown, microcrystalline
1445 - 1450 Dolomite 85% brown, finely sucrosic; Anhydrite 15% white; Shale, trace, gray
1450 - 1455 Dolomite, brown as above; Anhydrite, trace, white; Shale, trace, gray
1455 - 1460 Dolomite 80% brown as above; Shale 20% gray
1460 - 1465 Dolomite 70% brown; Shale 30% gray
1465 - 1470 Shale 80% gray; Dolomite 20% brown, microcrystalline; Anhydrite, trace, white

1470 - 1475 Shale, gray; Anhydrite 20% white
 1475 - 1480 Shale 80% gray; Sandstone 20% gray; Anhydrite, trace, white
 1480 - 1485 Sandstone 40% off white, 0.15 to 0.4 MM grain size, angular, poorly sorted, fair cemented with lime; Shale 60% gray
 1485 - 1490 Sandstone 50% as above; Shale 50% gray
 1490 - 1500 No Samples
 1500 - 1505 Shale 70% gray; Anhydrite 30% white
 1505 - 1510 Shale 90% gray; Anhydrite 10% white
 1510 - 1515 Anhydrite, white; Shale, trace, white
 1515 - 1530 Shale 90% gray; Anhydrite 10% white
 1530 - 1535 Anhydrite 50% white; Shale 50% gray
 1535 - 1540 Shale 60% gray; Anhydrite 40% white; Dolomite, trace, brown, microcrystalline
 1540 - 1545 Sandstone 30% green, 0.15 to 0.2 MM grain size, subangular, well cemented with dolomite, well sorted; Shale 50% gray; Anhydrite 20% white; Dolomite, trace, brown, microcrystalline
 1545 - 1550 Stray Sandstone: 1548 (SJ)
 Sandstone 50% gray, 0.15 to 0.2 MM grain size, subangular, well sorted, medium cemented with lime; Shale 50% dark gray
 1550 - 1555 Sandstone as above
 DST #1: 1524-1556
 Gas to surface 3 mins.
 Flow Time: 1st 30 mins 2nd 60 mins.
 CIP Time: 1st 60 mins 2nd 180 mins.
 IHFP 739.1 FHFP 759.1
 IGIP 578 FGIP 578
 IFP 66.3 - 94.7
 FFP 94.7 - 90
 Tool opened with good blow for 30 mins.
 Int. Flow rotated dual CIP Valve for a 60 min. Int. CIP.
 Reopened tool with good blow for 60 mins. Second Flow closed dual CIP valve for 180 mins FGIP.
 Recovered: 100' drilling fluid and 500 MCF gas
 1555 - 1560 Sandstone, gray as above
 1560 - 1565 Shale, gray
 1565 - 1580 Sandstone 60% gray; Shale 40% gray
 1580 - 1600 Sandstone, red, 0.15 to 0.25 MM grain size, subangular and subrounded, fair cemented with dolomite, well sorted
 1600 - 1615 Sandstone, red as above, mostly free sand grains
 1615 - 1620 Sandstone as above, becoming shaley
 1620 - 1625 Sandstone 60% as above; Shale 40% red, soft, plastic
 1625 - 1640 Shale, red, plastic; Some Sandstone, red
 1640 - 1650 Shale, gray, plastic; some sand grains
 1650 - 1660 As above
 1660 - 1700 Sandstone, gray, 0.15 to 0.3 MM grain size, subangular and subrounded, fair sorting, fair cemented with dolomite
 1700 - 1715 As above
 1715 - 1725 Free sand grains, gray and red, frosted, 0.15 to 0.3 MM grain size, subangular
 1725 - 1765 Free sand grains as above, mostly reddish grains, 0.2 to 0.5 MM size, subangular
 1765 - 1785 Free sand grains, red, silty, 0.1 MM grain size, subangular

1785 - 1790	Free 40% sand grains as above; Free sand 20% grains, gray, coarse, subangular; Shale 40% gray
1790 - 1795	Free sand grains 60%, red, fine grained; Free sand grains 10%, coarse, subangular; Shale 30% gray
1795 - 1815	Free sand grains 80%, red, fine grained; Free sand grains 20%, coarse, subangular
1815 - 1835	Sandstone 70% reddish, silty, very fine grained; Shale 30% reddish, silty
1835 - 1845	Shale, gray, medium hard
1845 - 1870	Sandstone, reddish, silty, very fine grained, limy, micaceous
Cohiwater:	
1870 - 2100	Shale 90% gray; Limestone 10% brown, microcrystalline
2100 - 2230	Shale 90% gray; Dolomite 10-20% gray and brown, microcrystalline
2230 - 2240	Shale 70% gray; Dolomite 30% brown, limy, microcrystalline
2240 - 2270	Shale 80% gray; Dolomite 20% as above
2270 - 2350	Shale 90% gray; Dolomite 10% as above
2350 - 2360	Shale 80% gray; Dolomite 20% brown, microcrystalline
2360 - 2650	Shale 90% gray; Dolomite 10% brown, microcrystalline
Sunbury:	
2650 - 2660	Shale 50% black, hard; Limestone 20% cream, microcrystalline; Shale 30% gray
2660 - 2670	Shale 60% black; Limestone 30% cream; Shale 10% gray
2670 - 2700	As above, fossil fragments
2700 - 2710	Shale 60% black, hard; Limestone 20% cream to gray, microcrystalline; Shale 20% gray
2710 - 2730	Shale 70% black; Limestone 30% as above
2730 - 2740	Shale, black, hard
DEVONIAN:	
Ellsworth:	
2740 - 2750	Shale 60% black; Shale 40% gray green, hard
2750 - 2800	Shale 70% gray green; Shale 30% light brown
2800 - 2870	Shale, gray green and some light brown
2870 - 2900	As above, slight increase Shale, light brown
2900 - 2940	Shale 50% gray green; Shale 50% light brown
2940 - 2950	Shale 60% light brown; Shale 40% gray green
2950 - 3000	Shale 80% light brown; Shale 20% gray-green
3000 - 3020	Shale 90% light brown; Shale 10% gray green
Antrim:	
3020 - 3165	Shale, dark brown, blackish, hard
3165 - 3170	Limestone 20% brown, microcrystalline; Shale 20% dark brown as above; Limestone, trace, cream, microcrystalline
3170 - 3175	Shale 70% dark brown; Limestone 30% brown as above
3175 - 3180	Limestone 60% brown as above; Shale, dark brown
3180 - 3185	Limestone 50% brown as above; Shale 20% dark brown
3185 - 3190	Shale 80% dark brown; Limestone 20% brown, as above
3190 - 3200	As above
3200 - 3210	Shale 90% dark brown; Limestone 10% as above
3210 - 3275	Shale, dark brown
Traverse Formation: 3250 (BJ)	
3275 - 3285	Shale, dark brown (more of a gray color); Shale, trace, gray, limy; Limestone, trace, white, microcrystalline

3285 - 3295 Limestone, gray-brown, microcrystalline; Shale, gray brown, limy
3295 - 3305 Limestone, brown, microcrystalline, shaley

Traverse Limestone: 3304 (SJ)

3305 - 3310 Limestone, brown, very finely sucrosic to microcrystalline

30 min. Circulated Sample at 3310:

Limestone, brown, finely sucrosic

3310 - 3315 Limestone, brown, sucrosic

3315 - 3320 Limestone, gray-brown, sucrosic

3320 - 3325 Limestone, brown, sucrosic

3325 - 3330 Limestone, brown, sucrosic; Shale, trace, grayish

30 min. Circulated Sample at 3330:

Limestone, brown, sucrosic; Shale 30% grayish

3330 - 3335 Limestone 40% black, microcrystalline; Shale 40% gray brown;

Limestone 20% brown, sucrosic

3335 - 3340 Limestone, off white, microcrystalline, fragmental

3340 - 3345 Limestone, off white and buff, fragmental, sucrosic, cherty

3345 - 3350 Limestone, buff to cream, fragmental

3350 - 3355 Limestone, buff to brown, sucrosic

3355 - 3360 Limestone, buff to brown, sucrosic

3360 - 3365 Limestone, tan to brown, some buff to off white, sucrosic

3365 - 3370 Limestone, tan to brown, sucrosic

3370 - 3375 Limestone, off white, sucrosic

3375 - 3380 Limestone 80% off white, sucrosic; Limestone 20% cream to buff

3380 - 3385 Limestone, buff to tan, sucrosic

3385 - 3390 Limestone, brown, sucrosic

3390 - 3395 Limestone 70% brown, sucrosic; Limestone 30% buff to tan

3395 - 3400 Limestone, light brown, sucrosic; Limestone, trace, off white to buff

3400 - 3405 Limestone 50% dark brown to black, microcrystalline; Limestone 50% tan to brown, sucrosic

3405 - 3410 Limestone 60% off white, sucrosic; Limestone 40% black, microcrystalline

3410 - 3415 Limestone 70% buff to tan, sucrosic; Limestone 20% black, microcrystalline; Shale 10% gray

3415 - 3420 As above, darker color

3420 - 3425 As above plus Shale, gray

3425 - 3430 Limestone, brown, finely sucrosic; Limestone, trace, off white, sucrosic

Ball Shale: 3834 (SJ)

3840 - 3850 Limestone 50% as above; Shale 50% gray

3850 - 3875 As above, quite shaley

3875 - 3895 Shale, gray

Dandee: 3890 (SJ)

Circulated Sample at 3896:

Limestone, off white to tan to brown mottled, fragmental, finely sucrosic, fossiliferous; Shale, gray

3895 - 3900 Limestone as above; Shale, gray

3900 - 3910 Limestone as above

min. Circulated Sample at 3910:
Limestone, buff to brown as above

3910 = 3960

Limestone as above, buff to brown mottled

3960 = 3970

Reed City Anhydrite: 3953 (SI)
Limestone 60% or above; Dolomite 40% buff to gray, finely
sucrosic

3970 = 3975

Reed City Dolomite: 3968 (SI)
Dolomite, dark brown, sucrosic; Dolomite, gray, microcrystalline
to finely sucrosic; Anhydrite, trace, white?

3975 = 3980

Dolomite, brown, finely sucrosic

3980 = 3985

As above; Anhydrite, trace, white?

3985 = 3990

Dolomite, brown, sucrosic; Chert, trace, white; Anhydrite,
trace, white?

3990 = 3995

Dolomite, cream, dense, tight

3995 = 4000

Dolomite, tan, dense, tight

4000 = 4025

Dolomite, as above, trace Dolomite, brown to dark brown, micro-
sucrosic, tight

4025 = 4030

Dolomite, brown to dark brown, fine to microcrystalline, tight

4030 TOTAL DEPTH (DRILLER)

4025 TOTAL DEPTH (SI)

7273
10/67

MICHIGAN DEPARTMENT OF CONSERVATION

WELL PLUGGING RECORD

TO BE FILED WITHIN THIRTY DAYS AFTER PLUGGING IS COMPLETED

MAY 21 1968

MAY 24 1968

Well No. 21152 Date March 19, 1968Owner or Operator Michigan Consolidated Gas Co. Address One Woodward Avenue - Detroit, MichiganWell Name H. Madden No. 1 Location NE NW SE Section 22Township East County Genoa T. 17N R. 8WType of Well Dry Hole Total Depth 4030 TD Formation Reed City
(OIL, GAS, BRINE DISPOSAL OR DRY HOLE)Date Plugging Started February 27, 1968 Date Plugging Completed February 27, 1968Was permission of Department of Conservation obtained before plugging began? YesName of Department representative who authorized or supervised plugging Russell Wilson

CASING SIZE	DEPTH SET	AMOUNT RECOVERED	SOIL OR RIPPED	BRIDGES OR PLUGS (SPUDS, STONE, CEMENT, ETC.)	DEPTH PLACED	NUMBER SACKS
8.5/8"	911'			Cemented	4030'	35
					1600'	35
					900'	20

Describe in detail how well was plugged. Circulated the hole with mud. Spotted 35 bags of reg. cement through the drill pipe at 4030', 35 bags at 1600' and 20 bags at 900'. Hole filled with mud, 8" casing to be cut off 3' below ground level and plated.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging? No If so, give detailsDid a Service Company pump mud, spot cement, or set bridge plugs? Yes If so, give name and address Allied Services, Inc. - Mt. Pleasant, MichiganWas the well plugged by a Company or Contractor other than Owner or Operator? No If so, give name and addressRepresentative of Owner, Operator, Company, or Contractor who witnessed plugging Chester Lowery

CERTIFICATE:

I, R.O. Ankarberg of Michigan Consolidated Gas Company (Company), state that I am authorized by said Owner or Operator to make this report, and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge.

R.O. Ankarberg Reed City, Michigan Drilling Supt.
(Signature) (Address) (Title)

FINAL INSPECTIONS:

By Department Representative Russell Wilson

Date

May 23, 1968

DATE Jan. 29 1968

FIELD ACTIVITY REPORT

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	Mich. Cons. Gas Co.	Yaddern #1	Evart	Osceola

Location note. Moving in rotary. Pits partly dug. I am not satisfied as to how this location is made but too late to correct problem. Pits are on low side of location and any excessive run off will cause a problem with pits overflowing. Location was moved 50' north to clear a steep hill. All drainage from location will run into Big Stone Lake, however, lakes are beyond 500' from location.

DATE Feb. 6 1968

FIELD ACTIVITY REPORT

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	M. C. G. C.	Yaddern #1	Evart	Osceola

Comm. 2-1-68. Drift 592'. Drlg. 880'. No surface pipe set yet, still looking for a place to set surface pipe so a pressure test can be made on cement job.

DATE Feb. 12 1968

FIELD ACTIVITY REPORT

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	M.C.G.C.	Yaddern #1	Evart	Osceola

Blowout preventers set and tested. Run in drill pipe and commenced drilling ahead. Found 500' of cement inside of 8". 3" set at 915 (500 cement + 20 sax in top of cellar).

DATE Feb. 14 1968

FIELD ACTIVITY REPORT

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	M.C.G.C.	Yaddern #1	Evart	Osceola

Trip log 3366; Br. ls. 1440; Stray 1548'. PTD 1556'. Running a D.S.T. 1524-1556'. Rec. gas to surface 3 mins., gauged 477,000 cu. ft. Have tool shut in now for F.C.I.P.

DATE Feb. 15 1968

FIELD ACTIVITY REPORT

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	M.C.G.C.	Yaddern #1	Evart	Osceola

Stray 1548'. DST 1524-1556'. Rec. gas to surface in 3 mins., gauged 350,000 on first flow, increased to 500,000 on second flow. Flow through 5/8" choke. Also recovered 100' of drill fluid in drill pipe. IHMP 759'; ICIP 578'; IFP 66 to 94'; FFP 94 to 96'; FCIP 578'; PHMP 759'. Drilling ahead to Reed City. Drlg. now at 1800'.

CONS 7231

INSPECTOR Wiles

The above information is complete and correct.

Date 3/19/68

R.D. ANKRIUS
Title Drilling Supt.CONS. 7231
REV. 9/64

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE

(Submit in Duplicate)

MAR 8 1968

FIELD ACTIVITY REPORT

DATE Feb. 19 19 68 FIELD NAME OR TYPE WELL Drlg.-Wildcat
 PERMIT NO. OPERATOR LEASE OR WELL NAME & NO. TOWNSHIP COUNTY
 27159 Mich. Cons. Gas Co. Maddern #1 Ewart Osceola

Drlg. 3112'. Still in Antrim.

FEB 23 1968

FIELD ACTIVITY REPORT

DATE Feb. 21 19 68 FIELD NAME OR TYPE WELL Drlg.-Wildcat
 PERMIT NO. OPERATOR LEASE OR WELL NAME & NO. TOWNSHIP COUNTY
 27159 Mich. Cons. Gas Co. Maddern #1 Ewart Osceola

Drlg. 3730'. 3470 DP = 3421 SIZ.

FEB 26 1968

FIELD ACTIVITY REPORT

DATE Feb. 22 19 68 FIELD NAME OR TYPE WELL Drlg.-Wildcat
 PERMIT NO. OPERATOR LEASE OR WELL NAME & NO. TOWNSHIP COUNTY
 27159 Mich. Cons. Gas Co. Maddern #1 Ewart Osceola

Trv. ls. 2333'; Bell 3850; Dd. 2891' Drlg. 2910; To drill ahead to Reed City & test. If no oil production is encountered will plug well to surface. Not to save gas encountered in stry.

FEB 27 1968

FIELD ACTIVITY REPORT

DATE Feb. 23 19 68 FIELD NAME OR TYPE WELL Drlg.-Wildcat
 PERMIT NO. OPERATOR LEASE OR WELL NAME & NO. TOWNSHIP COUNTY
 27159 Mich. Cons. Gas Co. Maddern #1 Ewart Osceola

Trip: gy. 1266; Fr. ls. 1436; Stray 1942; Ant. 1040; Trv. fm. 3256; Trv. ls. 3304; Bell 3824; Dd. 2890; Anhyd. 3950(1); Reed City 3988(1). TD 4030'. 4030 DP = 4025 SJ. D & A. Completed 2-22-68. To plug 2-23-68 by running drill pipe to T.D. & spot 35 sax of cement on bottom. Pull drill pipe to 1600' and spot 35 sax of cement thru Stray. Pull drill pipe to base of 8-5/8" surface pipe and spot 20 sax of cement. 8-5/8" to be abandoned with the well. Cut off 3' below ground level & cap with 5 sax cement, however, while running in drill pipe hole caved in freezing drill pipe. Pipe stuck at 1865, cannot pull. Broke circulation OK & are now mixing good mud to attempt to free pipe & continue plugging well. Completed well using water for drilling fluid.

CONS 7231

INSPECTOR

Wiles

Rotary tools from 0 feet to 1030 feet. Cable tools from feet to feet.

Natural initial production first 24 hours. Bbls. After acid or shot. Bbls.

If gas well, cu ft. per 24 hours. Back pressure, lbs. per sq. in.

The above information is complete and correct.

Signed, R.O. Ankarberg
 Title, Drilling Supt.

Date 2/19/68

CONS. 7210
 Rev. 2/64

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE

(Submit in Duplicate)

FEB 27 1968

FIELD ACTIVITY REPORT

DATE Feb. 27 1968

FIELD NAME OR TYPE WELL

Drig.-Wildcat

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	Mich. Cons. Gas Co.	Maddern #1	Evart	Oscoda

Trip, gyp. 1766; Br. ls. 1436; Stray 1548; Ant. 3040; Trv. fm. 3256; Trv. ls. 3304; Boll. 3934; Dd. 3950; anhyd. 3950(?); Reed City 3948(?). TD 4030'. 4030 DP = 4025 SJ). D & A. Completed 2-22-68. To plug 2-23-68 by running drill pipe to T.D. & spot 35 sax of cement on bottom. Pull drill pipe to 1600' and spot 35 sax of cement thru Stray. Pull drill pipe to base of 8-5/8" surface pipe and spot 20 sax of cement. 8-5/8" to be abandoned with the well. Cut off 3' below ground level & cap with 5 sax cement, however, while running in drill pipe hole caved in freezing drill pipe. Pipe stuck at 1865, cannot pull. Broke circulation OK & are now mixing good mud to a tempt. to free pipe & continue plugging well. Completed well using water for drilling fluid.

INSPECTOR

Wiles

CONS 7231 -

FIELD ACTIVITY REPORT

DATE Feb. 27 1968

FIELD NAME OR TYPE WELL

Drig.-Wildcat

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	M.C.G.C.	Maddern #1 - Continued	Evart	Oscoda

Mud vis. 32, wt. 8.6, wr. loss 2.5 cc. Circulated mud in hole. 2-26-68 Backed off drill pipe & collars at 1500'. Ran in Halliburton packer & jars to 1500. Cut too much mud cake. Pulled packer & jars & reconditioned hole with 7-7/8" bit with jets out. Reran packer with jars & connected on to drill collars. Pipe dropped down hole 4'. Top of pipe 1586'. Removed packer & reran again & recovered all drill collars. Laid down all drill collars and reran drill pipe to TD. Used a 7-1/4" bit with water courses out. Spotted 35 sacks of cement on bottom. Pulled drill pipe to 1600' & spotted 35 sax of cement thru stray, pulled drill pipe to base of 8 5/8" surface pipe (Cont'd)

INSPECTOR

Wiles

CONS 7231

FIELD NAME OR TYPE WELL

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	M.C.G.C.	Maddern #1	Evart	Oscoda

Well D & A on 3-22-68. TD 4030'. When running in drill pipe to plug pipe stuck at 1865', could not move. (Had 20 drill collars in hole). Completed well with salt water. Broke circulation OK so mixed mud using 32 sax of salt gel + 2 sax of mylogel. Mud did not free pipe. Spotted 110 gals. of B 19 chemical + 20 gal. of oil. Pipe still froze. Continued spotting oil around drill collars but pipe still froze. On 2-24-68 continued spotting oil around drill collars and working pipe, pipe began to work free but would not travel. 2/25/68 Pipe still stuck. Had McCullough Tool Co. check for free point, found drill pipe free to 931'. Cleaned mud pits again & mixed a new pit of mud using 40 sax mylogel + other chemicals. Cont'd.

INSPECTOR

Wiles

CONS 7231

FIELD ACTIVITY REPORT

DATE Feb. 27 1968

FIELD NAME OR TYPE WELL

Drig.-Wildcat

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	M.C.G.C.	Maddern #1 - Continued	Evart	Oscoda

and spotted 20 sax. 8" abandoned with the well. Cut off 3' below ground level and capped with 5 sax cement. To move rotary to Reed City for next well.

NOTE: Accompanied Frank Vining to Big Rapids checking on a complaint concerning a brine loss at a brine well operated by Macosta County southeast of Big Rapids. Brine loss repaired and brine tanks in good order. No problem when checking.

FIELD ACTIVITY REPORT

DATE May 22 1968

FIELD NAME OR TYPE WELL

MAY 24 1968

Plugged-Wildcat

PERMIT NO.	OPERATOR	LEASE OR WELL NAME & NO.	TOWNSHIP	COUNTY
27159	Mich. Cons. Gas	Maddern #1	Evart	Oscoda

Plugged to surface. Collar & pits filled and leveled. Some debris on location, however will remove soon. OK to approve.

1219
5/67

STATE OF MICHIGAN
DEPARTMENT OF CONSERVATION
SUPERVISION OF WELLS

B 27 100

PERMIT TO PLUG AND ABANDON

FIELD NAME

Wildont

277.59

WELL OPERATOR

Michigan Consolidated Gas Company

WELL NO.

1

COUNTY

Maddara

SECTION

TOWNSHIP

30

17N

8W

East

Onondaga

TYPE OF WELL (Oil, Gas, Water, etc.)

Dry Hole

DATE COMPLETED

Feb. 22

1968

PRODUCTION

19

LAST PRODUCTION (Amount, Date, etc.)

OIL

WATER

GAS

PLUGGING TO BE DONE BY

Company Tools & Allied Services

DATE PLUGGING WILL START

Feb. 23

1968

PLUGGING FIRM'S REGISTRATION NO. (If not a member of a recognized plugging firm, list name)

DATE

Feb. 22

1968

PLUGGING MATERIAL

Jerry Dye

ADDRESS

Michigan Consolidated Gas Company

East City, Michigan 49677

CASING AND PERFORATION RECORD

SIZE OF CASING	DEPTH SET	LOGS (Feet)	PERFORATION
8 5/8"	915	500 + 20	

FORMATION TOPS AND OTHER DATA
(Formation & depth, Oil, Gas & Water Shows, etc.)

Dev.	1157 RF	Antrim	3040	TD	4030
	1159 RB	Trv. fm.	3256		
	1144.5 Or.	Trv. ls.	3304		
Draft	592	Bell	3834		
Trip exp	1316	Dundee	3890		
Br. ls.	1436	Anhyd.	3950		
Sandy	1548	Rd. Cy.	3998		

PLUGGING REQUIREMENTS:

Run drill pipe to total depth and spot 35 sacks of cement on bottom. Pull drill pipe to 1600' and spot 35 sacks of cement through string. Pull drill pipe to base of the 8 5/8" surface pipe and spot 20 sacks of cement. Pull remainder of drill pipe.

8 5/8" surface pipe to be abandoned with the well. Cut pipe off 3' below ground level and cap with 5 sacks of cement.

Plugging requirements outlined above are to be executed in accordance with the provisions of Act 61, P.A. 1939, and/or Act 326, P.A. 1937, and the rules and regulations issued and adopted thereunder. NOTE: THE PLUGGING OF THIS WELL CANNOT BE APPROVED UNTIL THE PLUGGING IS COMPLETED, CLEAN, RAT HOLE AND PITS FILLED AND THE LOCATION HAS BEEN CLEANED AND LEVELLED.

PERMIT COMPLETION BY

FIELD OFFICE

Initials

DATE

Feb. 26

1968

ALL PLUGGING PERMITS, WITH CONC. 113, to be filed in triplicate within 12 days after completion.

BOX 30028

BOX 30028

MAR 11 1971

95.2
3/64

MICHIGAN DEPARTMENT OF CONSERVATION
GEOLOGICAL SURVEY DIVISION

PLEASE FILE IN
TRIPLICATE

REQUEST FOR TRANSFER OF PERMIT

Reed City, Michigan, Feb. 23, 1971

Supervisor of Wells
Lansing, Michigan

Please transfer Permit No. 27159 issued to Michigan Consolidated Gas Co.
for H. Maddern No. 1 located in the SE 1/4 NW 1/4 SE 1/4 section
30, T. 17, R. 8W, Everh Township, Oshtemo County,
to Madlou, Inc. All operating interests have been disposed of by us (us) and
are being assumed by this proposed operator.

OPERATOR Michigan Consolidated Gas Co.

By *J. Wary*

NOTE: NO PERMIT SHALL BE TRANSFERRED WHEN AN OWNER OR HIS AUTHORIZED REPRESENTATIVE IS NOT COMPLYING OR HAS NOT COMPLIED WITH THE PROVISIONS OF ACT 61, PUBLIC ACTS OF MICHIGAN, 1936, AS AMENDED, OR ACT 326, PUBLIC ACTS OF MICHIGAN, 1937, AS AMENDED, OR THE REGULATIONS OR ORDERS ISSUED BY THE SUPERVISOR OF WELLS OR HIS AUTHORIZED REPRESENTATIVE.

Reed City, Michigan, Feb 23, 1971

Supervisor of Wells
Lansing, Michigan

Madlou, Inc.

has acquired the well drilled under Permit No. 27159

ACQUIRING OPERATOR

and is assuming full responsibility for its operation and abandonment in conformity with the law, regulations and orders issued by the Supervisor of Wells. A surety bond is now on file covering these operations.

ACQUIRING OPERATOR Madlou, Inc. PHONE 832-5164

ADDRESS Box 176, Reed City, Mich. STATE

BY *C. B. H. Bishop*

TYPE OF WELL LUGGED DRY HOLE

MAR 12 1971

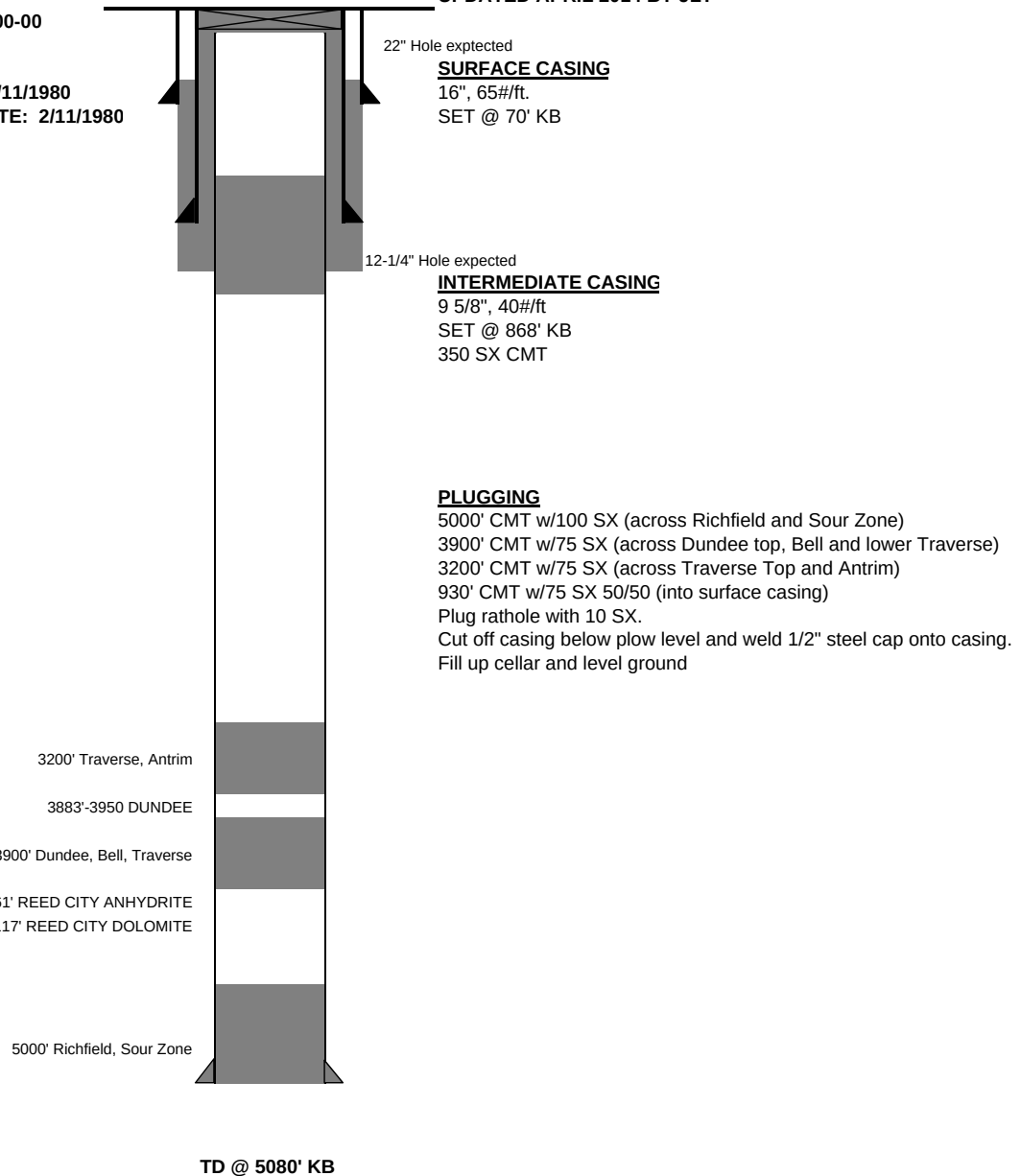
DATE TRANSFER APPROVED

TRANSFER APPROVED BY *V. J. August*

MANEY 1-30
NW NE SW Sec 30 T17N R8W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

PERMIT No. 33466
API No. 21-133-33466-00-00
GL @ 1130.2'
KB @ 1142.4'
WELL COMPLETION DATE: 2/11/1980
PLUGGING COMPLETION DATE: 2/11/1980

UPDATED APRIL 2014 BY JLT



MANEY 1-30 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
1/26/1980	SPUD.
2/9/1980	DRILLING COMPLETED.
	16" SET AT 70'
	9 5/8" SET AT 868"; 350 SX CMT
2/11/1980	PLUGGING START DATE
	5000' CMT w/100 SX (across Richfield and Sour Zone)
	3900' CMT w/75 SX (across Dundee top, Bell and lower Traverse)
	3200' CMT w/75 SX (across Traverse Top and Antrim)
	930' CMT w/75 SX 50/50 (into surface casing)
	Plug rathole with 10 SX.
	Cut off casing below plow level and weld 1/2" steel cap onto casing.
	Fill up cellar and level ground
2/11/1980	PLUGGING COMPLETED

APPLICATION FOR PERMIT TO DRILL A WELL FOR OIL, GAS, BRINE DISPOSAL, HYDROCARBON STORAGE OR FOR SECONDARY RECOVERY

Under Authority of Act 61, P.A. of 1939, As Amended.

MAIL TO:
STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
Box 30028, Lansing, Michigan 48909

R 7207
Rev. 12/77

See Reverse Side Before Filling Out This Application

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT - 640 ACRES	1. Application to drill a well for: Oil	2. Date 12/5/79	3. Fee enclosed \$ 100.00
	4. Applicant's name(s) as it is on the surety bond(s) Dart Oil & Gas Corporation		
	5. Permanent address 600 Dart Road, Mason, Michigan 48854		6. Phone 517-676-2900
	7. Lease name (owner of mineral rights) Norman Maney		8. Well No. 1-30
	9. Surface owner same		
	10. Address Rt. #1, Evart, Michigan 49631		11. Phone
	12. Drilling contractor Provins Drilling Co.		
	13. Address 600 West Pickard, Mt. Pleasant, Michigan 48858		14. Phone
	15. Surface location NW 1/4 of NE 1/4 of SW 1/4 Section 30 T 17N R 8W		
	16. Township Evart		
17. County Osceola			
18. Locate well in two directions from nearest lines of quarter section and unit lines. (Surface location)			
460 Ft. From north Line of quarter section (north-south)		860 Ft. From east Line of quarter section (east-west)	
460 Ft. From north Unit line (north-south)		460 Ft. From west Unit line (east-west)	
19. Kind of tools to be used (Cable, rotary, combination) Rotary		20. Formation in which well is to be completed Amherstburg	
		21. Intended depth of well 5250'	
22. Program of casing, sealing, cementing and completing well (SEE REVERSE SIDE)			

Drill 12 1/4" hole and set approximately 760' 8 5/8" 24# K55 surface casing, 2
Circulate cement to surface.
Drill 7 7/8" hole to TD.
Set 5 1/2" 15.5# K55 production casing if productive AND ADEQUATELY CEMENT.
~~B.O.P. series 900-3000# test Cameron type double ram.~~
~~series 900-3000# Regan tube type.~~
~~Completion unit will be used to complete well if productive.~~

CASING IS NOT TO BE STRIPPED FROM THE HOLE AND NO CHANGE IS TO BE MADE IN THE PROGRAM OUTLINED
ABOVE WITHOUT APPROVAL OF THE SUPERVISOR OF WELLS OR HIS AUTHORIZED REPRESENTATIVE

APPLICANT AGREES TO COMPLY WITH THE PROVISIONS OF ACT 61, PUBLIC ACTS OF 1939, AS AMENDED, AND RULES PERTAINING TO THE LOCATING,
DRILLING, CASING, SEALING, COMPLETING, PRODUCING, AND PLUGGING OF WELLS. BEFORE COMMENCING DRILLING OPERATIONS, CONTACT THE
NEAREST FIELD OFFICE. (See reverse side)

23. Send correspondence and permit to: Dart Oil & Gas Corporation Attn: W.H. Veatch		24. Phone 517-676-2900
25. Address 600 Dart Road, Mason, Michigan 48854		
LEAVE BLANK		
Date Issued 1-9-80	Permit No. 33,466	26. Name of applicant's agent (Print) W.H. Veatch
		27. Signature of agent

FOR CASHIER'S USE ONLY. DO NOT WRITE IN THIS SPACE

For Geological Survey Use Only

- | | |
|---------------------|----------------------|
| 1. White - Lansing | 4. Goldenrod - Field |
| 2. Canary - Cashier | 5. Green - Applicant |
| 3. Blue - Field | |

5028-12 10071 1000

INSTRUCTIONS FOR PREPARING APPLICATION FOR PERMIT

1. Use form R-7207. (Five copies in set. Green will be returned when permit is issued.)
2. WELL LOCATION SURVEY. Use form R-7208. Submit five copies. (Surveyors plat may be substituted for form R-7208.) Submit supplemental information and maps if lakes, streams, swamps, buildings, roads, powerlines, etc., are within one quarter mile of location.
3. ENVIRONMENTAL IMPACT ASSESSMENT. Use form R-7616 or equivalent. Submit five copies. (See instructions and guidelines furnished with forms.)
4. WELL ELEVATION. Furnish with well location survey or submit certification that elevation will be run and submitted within fourteen days after drilling commences.
5. SURETY BOND. Proper bond coverage must be submitted with application or must have been filed previously. (See General Rules for details.)
6. PERMIT FEE. Must accompany application for permit. (See statute for applicable fee.) (Make check payable to STATE OF MICHIGAN.)
7. PROGRAM OF CASING, SEALING, CEMENTING AND COMPLETING WELL (SECTION 22). Include the different hole sizes and depths to be drilled; casing sizes, weights, grades and lengths; amount and type of cement and additives if used. Indicate the type, weight and viscosities of drilling fluids to be used. List blowout control equipment to be used; give size, type, pressure ratings and order of assembly. Indicate intended well logging and completion program, auxiliary equipment to be used (i.e. sour gas), if any, and general information and remarks not covered by the above.

IF THIS APPLICATION IS FOR A HOLE TO BE DIRECTIONALLY DRILLED, SUBMIT THE FOLLOWING SUPPLEMENTAL INFORMATION:

(Five copies required.)

1. Give geographical description of intended bottom hole location.
2. Give correct footage measurements of intended bottom hole location from the NEAREST quarter section lines and from NEAREST unit lines.
3. Give RADIUS of intended bottom hole target area.
4. DIRECTIONAL DRILLING AND ENGINEERING PROGRAM. Include deviation kick-off points, degree of deviation intended, proposed depth and True Vertical Depth of the bottom hole. Specify the lateral distance and direction from the surface location to the proposed bottom hole location. Give name and address of the engineering company who will direct the deviation of the well bore and any general information and remarks not covered.

NOTICE: When drilling commences, the proper area field office MUST be notified!

FIELD OFFICES

Grayling

P.O. Box 507, 49738
Phone (A/C 517)
348-6371

East Lansing

8562 East Stoll Rd., 48823
Phone (A/C 517)
339-8638

Mt. Pleasant

204 Court St., 48858
Phone (A/C 517)
773-9965

Imlay City

P.O. Box 218, 48444
Phone (A/C 313)
724-2015

Plainwell

P.O. Box 355, 49080
Phone (A/C 616) 685-6851

Cadillac

P.O. Box 629, 49601
Phone (A/C 616) 775-9728

Gaylord

P.O. Box 576, 49735
Phone (A/C 517) ~~732-1622~~
732-3541

THE SUPERVISOR OF WELLS IS PROHIBITED BY LAW FROM ISSUING A DRILLING PERMIT TO ANY OWNER OR OPERATOR WHO IS IN VIOLATION OF ANY OF THE PROVISIONS OF ACT 61, P.A. 1939, AS AMENDED, OR ANY OF THE RULES OR ORDERS PROMULGATED THEREUNDER.

Nº 5680

For Auditing Only

Permit No. 33466 Issue Date January 9, 1980 Termination Date January 9, 1981

Owner

Address

Well Number 1-30

460' from north and 460' from west unit line

Type of Well	Oil	Kind of Tools	Rotary	Objective Formation	Amherstburg	Intended Depth	5250'
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SUPERVISOR OF WELLS

By

Set 5 1/2" 15.5# K55 production casing if productive and adequately cement.

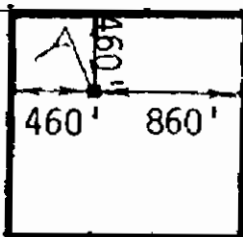
Region III, Lansing	517-322-1300
E. Lansing	517-339-8638
Imlay City	313-724-2015
Plainwell	616-685-6851
Grand Rapids	616-456-5071

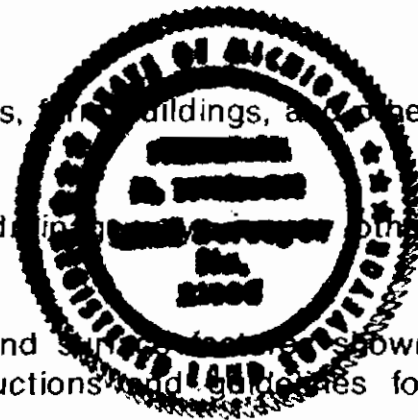
STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGY DIVISION

SURVEY RECORD OF WELL LOCATION

(Submit in quadruplicate with Application for Permit to Drill a Well for Oil or Gas,
Brine Disposal, Secondary Recovery, or Gas or L.P.G. Storage)

79446

LESSEE (OWNER OF LEASE RIGHTS) DART OIL AND GAS CORPORATION			
LESSOR (OWNER OF MINERAL RIGHTS) Norman Maney (Maney 1-30)			WELL NO. 1-30
LOCATION NW ¼ OF NE ¼ OF SW ¼ SECTION 30 T. 17N R. 8W			
TOWNSHIP Evart		COUNTY Osceola	
PLAT BELOW REPRESENTS ONE FULL SECTION (1 Mile Square)		N  1. Outline drilling unit and spot well location on plat at left. Where drilling unit crosses section lines, divide the plat into an east half and a west half OR a north half and a south half (which ever applies). Outline the unit and locate the well in two directions from NEAREST quarter section and unit lines. 2. Location of well in two directions from NEAREST quarter section and unit lines is: 460 ft. from North line of Quarter Section (north-south) 860 ft. from East line of Quarter Section (east-west) 460 ft. from North line of unit (north-south) 460 ft. from West line of unit (east-west) 3. Describe wellsite marker. Show or describe access route if it is not readily accessible. Wellsite is marked with a wood stake. Access is from the North off Big Stone Lake Road.	
(Scale of Plat — 1 inch equals 1320 ft.)			
4. ON SEPARATE PLAT OR PLOT PLAN: A. Locate, identify, and show distances to all roads, power lines, residences, buildings, and other structures within 300 feet of the stake; B. Locate, identify, and show distances to all lakes, streams, swamps, ditches, and other surface water features within 1320 feet of the stake. 5. In an ENVIRONMENTAL IMPACT ASSESSMENT describe all structures and surface features shown detailing plans for hazards prevention and erosion control (See instructions and guidelines for preparation of an environmental impact assessment).			
NAME OF INDIVIDUAL WHO SURVEYED WELL SITE Frederick H. Thomson, RLS #21996		DATE 12-14-79 TITLE Surveyor	
ADDRESS J. L. WILCOX & ASSOCIATES, INC. 7230 North US-131 Manton, Michigan 49663			
I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF			
SIGNATURE (LESSEE OR AUTHORIZED REPRESENTATIVE) 	ADDRESS (IF DIFFERENT THAN LESSEE)	DATE (MONTH, DAY, YEAR)	



WEST LINE SEC. 30

N 1/4 LINE

N

POND



POWER
LINE

1"=660'

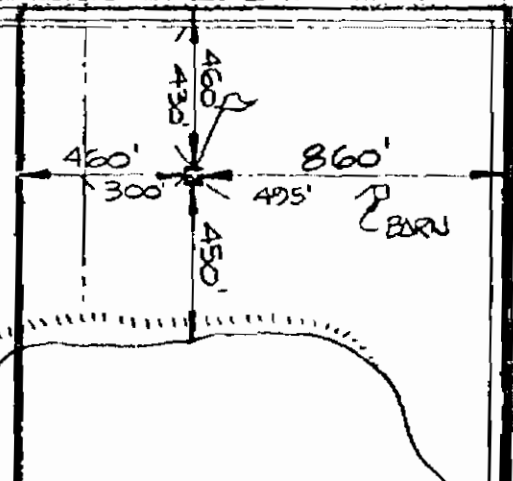
E 1/4 LINE

BIG STONE LAKE ROAD

POND

120TH

EARTHEN DAM



115TH

MAN MADE
LAKE

SOUTH LINE SEC. 30

1 MILE ROAD

SUPPLEMENTAL PLAT: MANEY 1-30
SECTION 30, T17N, R8W,
EVART TWP., OSCEOLA COUNTY
MICHIGAN

CLIENT: DART OIL & GAS

DATE
12-13-79

DRN. R.M.

CHD ACF

SCALE

V. 1"=660'

J.L. WILCOX & ASSOCIATES, INC.
Engineers and Surveyors
7230 N. U.S. - 131 • Manton, Michigan 49663

NOTES

F.B.
PG

SHEET

1 OF 1

JOB NO.

79446

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

FEB 28 1980

PERMIT NUMBER CR
33466

DEEPENING PERMIT NUMBER

FINAL

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Dart Oil & Gas Corporation 600 Dart Road Mason, Michigan 48854				NAME & ADDRESS OF DRILLING CONTRACTOR(S) Bigard Drilling Company 1315 N. Mission Road, P.O. Box 509 Mt. Pleasant, Michigan 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Maney #1-30						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NW NE SW		SECTION 30		TOWNSHIP 17N		RANGE 8W	
FOOTAGES (North/South) 460 Ft. from North Line and 860 Ft. from East Line of quarter section		TOWNSHIP NAME Evart		COUNTY NAME Osceola			
SUBSURFACE LOCATION		SECTION		TOWNSHIP		RANGE	
FOOTAGES (North/South)		FOOTAGES (East/West)		TOWNSHIP NAME		COUNTY NAME	
Ft. from _____ Line and _____		Ft. from _____ Line of quarter section					
DRILLING BEGUN 1/26/80		TOTAL DEPTH OF WELL Driller 5080 Log 5080		TYPE WELL Dry Hole		ELEVATIONS	
DRILLING COMPLETED 2/9/80		FORMATION AT T.D. Amherstburg		FT. DRLD. - ROTARY TOOLS From 0 To 5080		K.B. 1142.4	
WELL COMPLETED 2/11/80		PRODUCING FORMATION(S) None		FT. DRLD. - CABLE TOOLS From _____ To _____		R.T. 1130.2	

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
							YES	NO
9 5/8	868	350 SXS						

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
							Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
				Sour Zone	Gas	4646-53		X			X	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	GR-Cal/ONL-FDC	100-5078							
Birdwell		DLL - Micro	3000-5076							
		BHC Sonic	3000-5076							

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 2/12/80	NAME AND TITLE (PRINT) Richard Hinkley, Geologist	SIGNATURE <i>Richard Hinkley</i>
------------------------	---	-------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

FORMATION RECORD

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

ELEVATION USED: 1142.4	GEOLOGIST NAME: Richard Hinkley	TOPS TAKEN FROM: ☐ DRILLERS LOG ☐ SAMPLE LOG ☒ 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.					
0	737	Drift			
737	874	Sand			
874	1360	Sand & Shale			
1360	1400	Triple Gyp.			
1400	1548	Shale & Sand stringers			
1548	1601	Michigan Stray Sand			
1601	1736	Shale & Sand			
1736	2592	Coldwater Shale			
2592	2712	Sudbury Shale			
2712	3094	Bedford Shale			
3094	3247	Antrim Shale			
3247	3299	Traverse Fm.			
3299	3827	Traverse Lime (L.S. vf xln, Dense, tight, no fluorescence.)			
3827	3883	Bell Shale			
3883	3950	Dundee Lm.			
3950	3961	Reed City Anhydrite			
3961	4117	Reed City Dolomite (Dol, vf xln, sucrosic tex, some Intergranular porosity, Trace Dull Fluorescence.)			
4117	4718	Detroit River (Salt, anhydrite, & dolomite. Gas shows in sour zone, no Fluorescence.)			
4718	4780	Massive Anhydrite			
4780	5039	Richfield (Interbedded anhy & dolomite, vuggy and intergranular porosity at base of formation, no hydrocarbon shows.)			
5039	5080	Black Lime (L.S. F.xln, V. Arg, fair porosity, no hydrocarbon shows.)			
	5080	T.D.			
IF WELL WAS CORED, ATTACH CORE DESCRIPTION					
DRILL STEM TEST DATA					

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

FEB 28 1980

AUG 26 1980 LANSING HAS COPY MAR 03 1980

AK

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER	33466
FIELD NAME	Hersey/Evart

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER Dart Oil & Gas Corp., 600 Dart Road, Mason, Michigan 48854		
COMPLETE LEASE OR FARM NAME(S) Norman Maney		WELL NUMBER 1-30
WELL LOCATION NW ¼ NE ¼ SW ¼ SEC. 30 T. 17N R. 8W	TOWNSHIP Evart	COUNTY Osceola
TYPE OF WELL (Oil, Gas, Dry Hole, etc.) Dry Hole	TOTAL DEPTH 5080	FORMATION Amherstburg
DATE PLUGGING STARTED 2/11/80	DATE PLUGGING COMPLETED 2/11/80	DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING Michael Moss

CASING RECORD			
SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
16"	70'	none	
9 5/8"	868'	none	

BRIDGES OR PLUGS		
TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	5000'	100 sx
Cement	3900'	75 sx
Cement	3200'	75 sx
Cement	930'	75 sx
Cement	surface	10 sx
	(rat hole)	

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?	☒ YES ☐ NO	If yes, give details: All casing left in hole.
Did a Service Company pump mud, spot cement, or set bridge plugs?	☒ YES ☐ NO	If yes, give name and address: Dowell, Box 159, Mt. Pleasant, Michigan 48858
Was the well plugged by a Company or Contractor other than Owner or Operator?	☒ YES ☐ NO	If yes, give name and address: Bigard, 1315 N. Mission Road, P.O. Box 509, Mt. Pleasant, Mich. 48858
Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:		Jud Howdyshell

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED 100 sx spotted at 500' (across Richfield and Sour Zone), 75 sx spotted at 3900' (across Dundee top, Bell and lower Traverse), 75 sx spotted at 3200' (across Traverse Top and Antrim), 75 sx spotted at 930' (into surface casing). Plug rathole with 10 sx. Cut off casing below plow level and weld ½" steel cap onto casing. Fill up cellar and level ground.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION		
"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."		
NAME AND TITLE (Typed or Printed) Ward Kelner, Evaluation Engineer	DATE (Month, Day, Year) 2/13/80	COMPANY NAME AND ADDRESS Dart Oil & Gas Corporation 600 Dart Road Mason, Michigan 48854
SIGNATURE <i>Ward Kelner</i>		

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

8/22/00 - SITE IS CLEAN, LEVEL, AND OK FOR APPROVAL

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE	DIVISION	DATE
Michael J. Ross	GEOLOGICAL SURVEY	8/22/00

FEB 19 1980

STATE OF MICHIGAN

DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

PERMIT TO PLUG AND ABANDON

DNR DISTRIBUTION

Permittee — Orig & 1 copy
Division Office — 2 copies
Field Office — File copy
Others — On request

PERMIT NUMBER

33466

FIELD NAME

NAME AND ADDRESS OF PERMITTEE

Dart Oil & Gas

LEASE NAME AND WELL NO

Maney 1-30

LOCATION (1/4, 1/2, 1/4 or other)

NW NE SW,

SECTION

30

T 17N R 8W

Evart

TOWNSHIP

Osceola

COUNTY

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry hole

DATE COMPLETED

2/10/80

DATE PLUGGING WILL START

2/11/80

PLUGGING PERMIT REQUESTED BY & DATE

T. Baker 2/9/80

LAST PRODUCTION

BOPD

BWPD

MCFGPD

DATE

PLUGGING TO BE DONE BY

Bigard #3

PERMIT MAILED TO

Dart Oil & Gas

600 Dart Rd.

Box 151A

Mason, MI 48954

COPIES MAILED TO

CASING AND CEMENTING RECORD

HOLE DIA	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT TOP.	PERFORATIONS
	16"	70			
	95/8"	868	350	surf.	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

E LOG TOPS:

STRAY SAND 1548

COLDW SH 1822

ANT 3093

TF 3247

TL 3299

BELL 3827

DD 3883

RCA 3950

RCD 3961

DR 4117

1ST DRS 4181

MASSIVE 4718

RICH 4780

BL LM 5039

TD 5080

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder.

Spot 100 sx cmt. at 5000'.

Spot 75 sx cmt at 3900

Spot 75 sx cmt at 3200'

Spot 75 sx at 920'.

Cut csg off 3' below grd &

cap w/cmt & steel plate.

*NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 480.701 to 480.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

Michael J. Kloss

OFFICE

Cadillac, D#6

DATE

2/12/80

NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion

R-7229
Rev. 11/77

MCCLAIN 1-28
NE NW SW Sec 28 T17N R8W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

UPDATED APRIL 2014 BY JLT

24" CONDUCTOR DRIVEN TO 60'

15" Hole expected

SURFACE CASING

13 3/8"

SET @ 873' KB

CMT w/ 900 SX TO SURFACE

13-1/4" Hole expected

INTERMEDIATE CASING

9 5/8"

SET @ 5472' KB

CMT w/ 1200 SX TO SURFACE

PROD. CASING

NA

PLUGGED FROM TD TO SURFACE w/CMT

API No. 21-133-36426-0000

GL @ 1107'

KB @ 1123'

WELL COMPLETION DATE: DRY HOLE (NA)

PLUGGING COMPLETION DATE: 2/19/83

TD @ 8440' KB

MCCLAIN 1-28 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
1/15/1983	SPUD.
2/17/1983	DRILLING COMPLETED. FORMATION AT TD CINCINNATIAN. 24" CONDUCTOR SET AT 60' 13 3/8" SET AT 873'; 900 SX 9 5/8" SET AT 5472'; 1200 SX
2/18/1983	PLUGGING START DATE RUN DRILL PIPE TO 8440' AND SET 145 SX PULLED DRILL PIPE TO 8021' AND SET 515 SX PULLED DRILL PIPE TO 5500' AND SET 280 SX PULLED DRILL PIPE TO 3700' AND SET 280 SX PULLED DRILL PIPE TO 1900' AND SET 280 SX PULLED DRILL PIPE TO 100' AND SET 35 SX
2/19/1983	PLUGGING COMPLETED.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

MAR 8 1983

PERMIT NUMBER

36426

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Willmet, Inc. 2250 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling Company 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT McClain #1-28						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE NW SW		SECTION 28	TOWNSHIP 17N	RANGE 8W	TOWNSHIP NAME Evart		
FOOTAGES (North/South) 460 Ft. from North		FOOTAGES (East/West) 859 Ft. from West		COUNTY NAME Osceola			
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME		
FOOTAGES (North/South)		FOOTAGES (East/West)		COUNTY NAME			
Ft. from		Line and		Ft. from		Line of quarter section	
D A T E	DRILLING BEGUN 1-15-83		TOTAL DEPTH OF WELL Driller 8440 Log 8430		TYPE WELL Dry Hole		ELEVATIONS
	DRILLING COMPLETED 2-17-83		FORMATION AT T.D. Cincinnatian		FT. DRLD. - ROTARY TOOLS From 0 To 8440		
	WELL COMPLETED		PRODUCING FORMATION(S) None		FT. DRLD. - CABLE TOOLS From To		
				K.B. 1123		R.F. 1122	
				R.T. Grd. 1107			

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
24"	60'	-----	---				YES	NO
13 3/8"	873'	900 Sx	---			None		
9 5/8"	5472'	1200 Sx						

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
None							Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
				Traverse	Gas	3500						
				Reed City Dol	Gas	4050						
				Sour Zone	Gas	4580						

STIMULATION BY ACID OR FRACTURING

Bass Island Gas 5600
Strickler Zone 8250
WATER FILL UP (IF) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	None						

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	LDT-CNL-GR	0 - 8430			2700	2°			
Birdwell		DLL-MLL	3300 - 8270			4300	1 3/4°			
		Sonic	200 - 8430			6500	1 1/2°			
		RFT	8220 - 8232			8000	2°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH
-----	-----	-----	-----	-----	-----	-----

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 2/25/83	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William E. Booker</i>
-----------------	--	---------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

REPLACING HAS COPY.

MAR 7 1983

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER

36426

FILE NAME

MAY 20 1983

MAY 27 1983

SEP 17 1984

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

Willmet, Inc., 2250 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

McClain

WELL NUMBER

1-28

WELL LOCATION

NE 1/4 NW 1/4 SW 1/4 SEC. 28 T. 17N R. 8W

TOWNSHIP

Evart

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

TOTAL DEPTH

8440

FORMATION

Cincinnatian

DATE PLUGGING STARTED

2-18-83

DATE PLUGGING COMPLETED

2-19-83

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Snider

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
24"	60'	---	
13 3/8"	873'	---	
9 5/8"	5472'	---	

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8440 - 8021	145 Sx
Cement	8021 - 5500	515 Sx
Cement	5500 - 3700	280 Sx
Cement	3700 - 1900	280 Sx
Cement	1900 - 100	280 Sx
Cement	0 - 100	35 Sx

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Dowell

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Marvin Woods

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Run drill pipe to 8440 and set 145 sx, pulled drill pipe to 8021 and set 515 sx, pulled drill pipe to 5500 and set 280 sx, pulled drill pipe to 3700 and set 280 sx, pulled drill pipe to 1900 and set 280 sx, pulled drill pipe to 100 and set 35 sx.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

COMPANY NAME AND ADDRESS

Strickler Geological Services, Inc.
1425 S. Mission
Mt. Pleasant, MI 48858

SIGNATURE

DATE (Month, Day, Year)

2/28/83

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

6/14/84 -

Site is clean and recontoured. There were no brine seeps and grass has grown in.
Okay for final approval.

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE

DIVISION

DATE _____

Michael J. Moss

GEOLOGICAL SURVEY

6/15/84

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

PERMIT TO PLUG AND ABANDON

OWNER DISTRIBUTION
Permittee - Orig. & 1 copy
Division Office - 2 copies
Field Office - File copy
Others - On request

PERMIT NUMBER 36426
FIELD NAME Wildcat

NAME AND ADDRESS OF PERMITTEE
Willmet

LEASE NAME AND WELL NO.
McClain #1-28

LOCATION (1/4, 1/2, 3/4 or other) SECTION TOWNSHIP COUNTY
NE NW SWF 28 T 17N R 8W Evart Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.) DATE COMPLETED DATE PLUGGING WILL START PLUGGING PERMIT REQUESTED BY & DATE
Dry hole 2/17/83 2/18/83 2/18/83 M. Woods

LAST PRODUCTION BOPD BWPD MCFGPO DATE PLUGGING TO BE DONE BY
Provins #7

PERMIT MAILED TO COPIES MAILED TO
Willmet

CASING AND CEMENTING RECORD

HOLE DIA	CASING DIA & WT./FT	DEPTHS SET	CEMENT QUANTITY TYPE ADDITIVES	CMT TOP	PERFORATIONS
	24"	60'			
	133/8"	873'	900	surf	
	95/8"	5474'	1200	125'	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

CONFIDENTIAL

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1961, as amended, and rules and orders adopted thereunder.

P.I. as per Mineral Wells:

Circl. Class A cmt. to top Niag. Circl. 50-50 poz cmt. to within 100' of ground level.

*NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1971 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature) OFFICE DATE
Michael J. Woods Cadillac D#6 2/22/83

*SEE WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion.

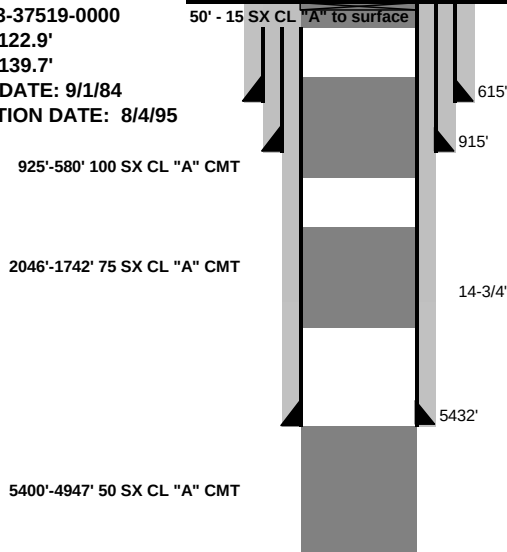
H-7229
Rev 11/77

This document paid for with State funds

MILLER 1-25
SE NE SE Sec 26 T17N R9W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

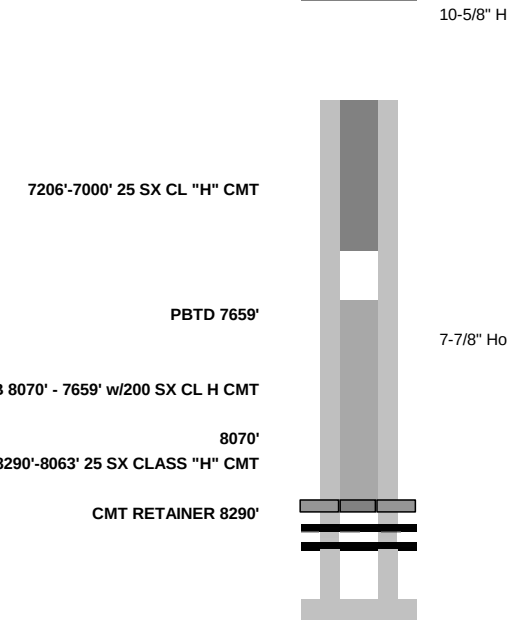
UPDATED APRIL 2014 BY JLT

API No. 21-133-37519-0000
GL @ 1122.9'
KB @ 1139.7'
WELL COMPLETION DATE: 9/1/84
PLUGGING COMPLETION DATE: 8/4/95



SURFACE CASING
16"; 65#/ft.
SET @ 615' KB
CMT w/550 SX TO SURFACE

INTERMEDIATE CASING
11-3/4"; 60#/ft.
SET @ 915' KB
CMT w/ 200 SX HOWCOLITE w/3% cc
+ 200 SX "A" w/3% cc
CMT TO SURFACE



INTERMEDIATE CASING
8 5/8"; 32#/ft.
SET @ 5432' KB
2 STAGES:
#1: 450 SX POXMIX + 200 SX CLASS "A" ; DV TOOL @3763'
#2: 700 SX POXMIX + 100 SX CLASS "A"
CMT TO SURFACE

PROD. CASING
5-1/2"; 17#/ft.
SET @ 8426' KB
CMT w/800 SX POXMIX w/6% GEL AND 1/4# SK D-AIR
+ 160 SX CLASS "H" w/0.25% WG-17 & 0.25% C-331
TOC

BURNT BLUFF PERFS
8328'-8343' (30x)

TD @ 8425' KB
PBT @ 7659'

MILLER 1-25 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
7/9/1984	SPUD.
9/13/1984	PERFORATED 30 HOLES, 2/FT: 8328'-8343'
9/1/1984	WELL COMPLETED. FORMATION AT TD CABOT HEAD. 16" SETAT 615'; 550 SX CMT 11-3/4" SET AT 915'; 200 SX HOWCO LITE w/3% cc + 200 SX "A" w/3% cc 8-5/8" SET AT 5432'; 2 STAGES: #1 450 SX POZMIX +200 SX CLASS "A" DV TOOL @ 3763', #2 700 SX POZMIX + 100 SX CLASS "A" 5-1/2" SET AT 8425'; 800 SX POXMIX w/6% GEL AND 1/4#/SK D-AIR + 160 SX CLASS "H" w/0.25% WG-17 & 0.25% C-331
7/31/1995	PLUGGING STARTED
8/1/1995	RU HALLIBURTON TO KILL WELL. 1,000 PSI ON TUBING. PUMPED 55 BBL 10.2 BRINE DOWN TUBING. FILLED CASING 42 BBL. ND TREE. NU BOP. START OUT WITH TUBING. GOT OUT WITH TUBING. RU HALLIBURTON WIRELINE. MAKING GAUGE RING AND JUNK BASKET RUN. RAN 5,000'. SHUT IN UNTIL AM.
8/2/1995	PREPARE TO CUT 5-1/2" CASING BELOW SLIPS. FINISH TIH w/TUBING, TAG CMT RETAINER @ 8290'. RU HALLIBURTON AND KAL-CON, STING OUT OF RETAINER AND LOAD HOLE w/115 BBLs BRINE. STING INTO RETAINER. PUMP 25 SX CLASS H CMT THRU RETAINER, STING OUT OF RETAINER AND SPOT 25 SX CLASS H CMT ON TOP OF RETAINER. PULL TUBING TO 7206'. REVERSE CIRCULATE TO FILL HOLE AND SPOT A 25 SX CLASS H CMT PLUG FROM 7000'-7206'. TOO H w/TUBING (STAND BACK 70 STAND-LAY DOWN REST). ND BOP'S AND TUBING HEAD. SPEAR 5-1/2" CASING AND ATTEMPT TO PULL BUT UNSUCCESSFUL. SDFN.
8/3/1995	RU ENTERRA OILFILED TOOLS CASING CUTTER, CUT 5-1/2" CASING 1' BELOW SLIPS AND REMOVE FROM HOLE. RU HALLIBURTON WIRELINE AND FREEPOINT CASING (NO MOVEMENT BELOW 2500'). 50% @ 2200'. 70% @ 2000'. RU CUTTER AND CUT CASING @ 2000'. RD HALLIBURTON, RU CASING TOOLS, PULL AND LAY DOWN 2000' OF 5-1/2" CASING (49 FULL JOINTS - 2 CUTOFFS). RD CASING TOOLS, TIH WITH TUBING TO 4400'. RADIATOR HOSE BROKE ON RIG, DOWN FOR REPAIRS. FINISH TIH WITH 2-7/8" TUBING TO 5400'. SD FOR EVENING.
8/4/1995	PLUGGING COMPLETE. RU HALLIBURTON AND KAL CON, BREAK CIRCULATION AND SPOT A 50 SX CLASS A CMT PLUG AT 5400'. TOO H LAYING DOWN TUBING TO 2046', WHERE A 75 SX CLASS A CMT PLUG WAS SPOTTED. TUBING WAS PULLED TO 925' WHERE A 100 SX CLASS A CMT PLUG WAS SPOTTED. TOO H TO 50', SPOT A 15 SX CLASS A CMT PLUG TO SURFACE, RIG DOWN AND RELEASE HALLIBURTON. CUT OFF HEAD AT GROUND LEVEL IN CELLAR AND WELD A 1/2" STEEL PLAT ON TOP. FOLLOWING ARE TOP AND BOTTOM FOOTAGE FOR INDIVIDUAL CMT PLUGS: PLUG SPOTTED AT 8290', 25 SX, TOP OF PLUG AT 8063' PLUG SPOTTED AT 7200', 25 SX, TOP OF PLUG AT 7000' PLUG SPOTTED AT 5400', 50 SX, TOP OF PLUG AT 4947' PLUG SPOTTED AT 2000', 75 SX, TOP OF PLUG AT 1742' PLUG SPOTTED AT 925', 100 SX, TOP OF PLUG AT 580' PLUG SPOTTED AT 50', 15 SX, TOP OF PLUG AT SURFACE

REQUEST FOR TRANSFER OF A PERMIT

SUBMIT 4 COPIES TO: Department of Natural Resources
Geological Survey Division
Box 30028
Lansing, Michigan 48909

Filing for change of ownership of well is required in accordance with ☒ Act 61, P.A. 1939 and ☐ Act 345 P.A. 1969, as amended, and Administrative Rules promulgated thereunder.

PERMIT NO 37519	WELL TYPE Gas
FIELD NAME Hersey-Clinton	
WELL NAME AND NUMBER Miller 1-25	
WELL LOCATION SE 1/4 NE 1/4 SE 1/4 SECTION 26 T 17N R 9W	
TOWNSHIP Hersey	COUNTY Osceola

TRANSFER OF A PERMIT FROM:

NAME(S) OF SELLING OWNER(S)

PPG Oil & Gas Co., Inc.

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

All operating rights are discharged by

Owner(s)

Representative(s)

Signature(s)

Date(s)

PPG Oil & Gas Co., Inc., Mr. Donald R. Hall

Donald R. Hall 12/14/87

ELIGIBILITY FOR PERMITS IS CONDITIONED UPON COMPLIANCE WITH THE STATUTES, RULES AND ORDERS OF THE DEPARTMENT OF NATURAL RESOURCES. PERMITS WILL NOT BE GRANTED TO PERSONS NOT IN COMPLIANCE.

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

TRANSFER OF A PERMIT TO:

NAME(S) OF ACQUIRING OWNER(S)

Marathon Oil Company

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

(We) (I) have acquired the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.

SURETY BOND:

☐ SINGLE WELL☐ ATTACHED

BONDING CO. SAFECO Insurance Company of America

☒ BLANKET☒ ON FILE

BOND NUMBER 5194219

All operating rights and responsibilities are assumed by

Owner(s)

Representative(s)

Signature(s)

Date(s)

Marathon Oil Company, Mr. David W. Hoopman

David W. Hoopman

12/16/87

FOR DEPARTMENT OF NATURAL RESOURCES USE ONLY

APPROVED

S. J. [Signature]

Signature

6/28/88

Date

DISTRIBUTION BY DNR

- ☒ Lansing
☐ Acquiring Owner
☐ Selling Owner
☐ Field

OCT 10 1984

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)

Submit in DUPLICATE Within 30 Days after Well Completion

PERMIT NUMBER

37519

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT PPG OIL & GAS, INC. 2258 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) INDRIL, INC. PO Box 668 Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT MILLER #1-25						DIRECTIONALLY DRILLED YES ☒ NO ☐	
SURFACE LOCATION SE NE SE		SECTION 26	TOWNSHIP 17N	RANGE 9W	TOWNSHIP NAME Hersey		
FOOTAGES (North/South) 852 Ft. from North		Line and 560		FOOTAGES (East/West) Ft. from East		COUNTY NAME Osceola	
SUBSURFACE LOCATION SW NW SW		SECTION 25	TOWNSHIP 17N	RANGE 9W	TOWNSHIP NAME Hersey		
FOOTAGES (North/South) 634 Ft. from South		Line and 558		FOOTAGES (East/West) Ft. from West		COUNTY NAME Osceola	
DATE	DRILLING BEGUN 7/9/84		TOTAL DEPTH OF WELL Driller 8425 Log 8424		TYPE WELL Gas well		ELEVATIONS
	DRILLING COMPLETED 8/8/84		FORMATION AT T.D. Cabot Head		FT. DRILL. - ROTARY TOOLS From 0 To 8425		
	WELL COMPLETED 9/1/84		PRODUCING FORMATION(S)		FT. DRILL. - CABLE TOOLS From To		
						K.B. 1139.7	R.F. 1138.3
						R.T.	Grd. 1122.9

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
16"	615'	550 sx	--				YES	NO
11-3/4"	915'	400 sx	--	9/13/84	2/ft	8328-8343 (30x)	X	
8-5/8"	5432'	650 sx 1st stage						
	DV tool 03763	310sx 2nd. stage						
5 1/2"	8426	960sx						

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
Burnt Bluff	Gas	8327	8358MD				Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
		8050	8075TVD	Reed City	Gas	4075					X	
				Antrim	Gas	3010					X	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
9/13/84	8328-43	500 gal. 15%	None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	FUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	LDT-CNL-GR	100-8420			See attached				
Birdwell		Sonic	6600-8420							
		DLL-MLL	3150-5429							
			7000-8422							

PRODUCTION TEST DATA

OIL -- Bbls/day	GRAVITY -- °API	COND. Bbls/day	GAS -- MCF/day	WATER -- Bbls/day	H ₂ S -- Grains/100 cu. ft.	B.H.P. AND DEPTH
--	--	--	1,000	--	--	--

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE	NAME AND TITLE (PRINT)	SIGNATURE
9/20/84	William E. Booker, Geologist	<i>William E. Booker</i>

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

LANSING HAS COPY

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

AUG 06 1984

AUG 15 1984

ABANDONED HOLE

PERMIT NUMBER

37519 (LOST HOLE)

FIELD NAME

Hersey

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

Miller (Abandoned Hole)

WELL NUMBER

#1-26/25

WELL LOCATION

SE 1/4 NE 1/4 SE 1/4 SEC. 26 T. 17N R. 9W

TOWNSHIP

Hersey

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Abandoned Hole

TOTAL DEPTH

8070

FORMATION

Niagaran

DATE PLUGGING STARTED

8-1-84

DATE PLUGGING COMPLETED

8-1-84

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Mike Moss

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
11 3/4"	915	0	---
8 5/8"	5432	0	---

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8070	200 sx H

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Marvin Woods

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Cyrol run and hole off track, plugged back from 8070 to 7659 with 200 sx CI H cement.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

COMPANY NAME AND ADDRESS

STRICKLER GEOLOGICAL SERVICES, INC.

SIGNATURE

William E. Booker

DATE (Month, Day, Year)

8-2-84

1425 S. Mission

Mt. Pleasant, MI 48858

Country	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050
Japan	7	8	10	12	14	16	18	20	22	24	26
Germany	10	11	12	13	14	15	16	17	18	19	20
France	11	12	13	14	15	16	17	18	19	20	21
Italy	12	13	14	15	16	17	18	19	20	21	22
Spain	13	14	15	16	17	18	19	20	21	22	23
Sweden	14	15	16	17	18	19	20	21	22	23	24
United Kingdom	15	16	17	18	19	20	21	22	23	24	25
United States	16	17	18	19	20	21	22	23	24	25	26
Canada	17	18	19	20	21	22	23	24	25	26	27
Belgium	18	19	20	21	22	23	24	25	26	27	28
Netherlands	19	20	21	22	23	24	25	26	27	28	29
Australia	20	21	22	23	24	25	26	27	28	29	30
South Korea	21	22	23	24	25	26	27	28	29	30	31
India	22	23	24	25	26	27	28	29	30	31	32
China	23	24	25	26	27	28	29	30	31	32	33
South Africa	24	25	26	27	28	29	30	31	32	33	34
Brazil	25	26	27	28	29	30	31	32	33	34	35
Argentina	26	27	28	29	30	31	32	33	34	35	36
Colombia	27	28	29	30	31	32	33	34	35	36	37
Peru	28	29	30	31	32	33	34	35	36	37	38
Venezuela	29	30	31	32	33	34	35	36	37	38	39
Chile	30	31	32	33	34	35	36	37	38	39	40
Ecuador	31	32	33	34	35	36	37	38	39	40	41
Bolivia	32	33	34	35	36	37	38	39	40	41	42
Paraguay	33	34	35	36	37	38	39	40	41	42	43
Uruguay	34	35	36	37	38	39	40	41	42	43	44
Costa Rica	35	36	37	38	39	40	41	42	43	44	45
Panama	36	37	38	39	40	41	42	43	44	45	46
Dominican Republic	37	38	39	40	41	42	43	44	45	46	47
Cuba	38	39	40	41	42	43	44	45	46	47	48
Honduras	39	40	41	42	43	44	45	46	47	48	49
Guatemala	40	41	42	43	44	45	46	47	48	49	50
Nicaragua	41	42	43	44	45	46	47	48	49	50	51
El Salvador	42	43	44	45	46	47	48	49	50	51	52
Puerto Rico	43	44	45	46	47	48	49	50	51	52	53
Mexico	44	45	46	47	48	49	50	51	52	53	54
Central America	45	46	47	48	49	50	51	52	53	54	55
South America	46	47	48	49	5						

[illegible]

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

WELL WAS SIDETRACKED UNDER SAME PERMIT #

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES		
SIGNATURE	DIVISION	DATE
Michael J. Moss	GEOLOGICAL SURVEY	8/15/89

DIVISION

DATE _____

Michael J. Moss

GEOLOGICAL SURVEY

8/15/89

UNR DISTRIBUTION
Permittee — Orig. & 1 copy
Division Office — 2 copies
Field Office — File copy
Others — On request

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

PERMIT NUMBER
37519 lost hole

FIELD NAME
Persey

PERMIT TO PLUG AND ABANDON

NAME AND ADDRESS OF PERMITTEE

PPG

LEASE NAME AND WELL NO.

Miller #1-25 lost hole

LOCATION (1/4 1/4 or other)

SE NE SE,

SECTION

25

T 17N R 19W

TOWNSHIP

Persey

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Lost hole

DATE COMPLETED

8/1/84

DATE PLUGGING WILL START

8/1/84

PLUGGING PERMIT REQUESTED BY & DATE

W. Booker 8/1/84

LAST PRODUCTION

BOPD

BWPD

MCFGPD

DATE

PLUGGING TO BE DONE BY

Indril #7

PERMIT MAILED TO

COPIES MAILED TO

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP.	PERFORATIONS
	24"	46			
	16"	615	550	surf	
	11 3/4"	915	400	"	
	8 5/8"	5432	1450	"	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

MEASURED DEPTHS: CONFIDENTIAL.

A1E 7665

BN1a 8047

T.D. 8077

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder.

NOTE: Well to be P.B. for deviation correction. Well to be plugged back w/cmt. to approx. 7650'.

*NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

William J. Moss

OFFICE Cadillac #6

DATE

8/1/84

NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion.

R-7229
Rev. 11/77

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028
LANSING, MICHIGAN 48909

FEB 18 1994

REQUIRED BY AUTHORITY OF:

☒ ACT 61, P.A. 1939, AS AMENDED ☐ ACT 315, P.A. 1969, AS AMENDED

APPLICATION TO (Submit 4 copies):

☐ CHANGE WELL STATUS ☒ PLUG AND ABANDON

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

CHANGE OF WELL STATUS REQUESTED FOR:

☐ PLUG BACK ☐ EXTEND PLUGGING (T.A.) ☐ PERFORATE
☐ CONVERT TO INJECTION OR DISPOSAL WELL ☐ OTHER

☐ ACIDIZE (315 ONLY) ☐ FRACTURE (315 ONLY)

LAST PRODUCTION/INJECTION AND TYPE OF FLUID
(Amount per day & injection pressure)

1 MCFD

WORK TO BE DONE BY: ☐ APPROVAL MAILED

To Be Determined

PERMIT NO. 37519		TYPE OF WELL Gas Producer	
NAME AND ADDRESS OF WELL OWNER ☐ APPROVAL MAILED Marathon Oil Company 1231 E. Mosherville Road Jonesville, MI 49250			
FIELD/FACILITY NAME Hersey Unit			
WELL NAME Miller		WELL NO. #1-25	
WELL LOCATION SW 1/4 of NW 1/4 of SW 1/4 Section 25 T 17N R 9W			
TOWNSHIP Hersey		COUNTY Osceola	
DATE DRILLING COMPLETED 8-11-84		DATE LAST PRODUCED/UTILIZED Active	
STARTING DATE A.S.A.P.			

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT. FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP	PERFORATIONS
14 3/4"	16", 65#	615'	N/A		
10 5/8"	11 3/4", 60#	915'	200 SX Howcolite w/3% cc + 200 sx "A" w/3% cc	Surface	
7 7/8"	8 5/8", 32#	5432'	*	Surface	
	5 1/2", 17#	8425'	**		8328-43'

FORMATION RECORD (Formation and depth, oil, gas and water shows, etc.):

SEE ATTACHED "EXHIBIT A"

* 1ST STAGE: 450 SX POZMIX + 200 SX CLASS "A" DV TOOL @ 3763'.
2ND STAGE: 700 SX POZMIX + 100 SX CLASS "A".

** 800 SX POZMIX W/6% GEL AND 1/4#/SK D-AIR + 160 SX CLASS "H" W/0.25% WG-17 & 0.25% C-331.

DETAIL PROPOSED PROCEDURES:

See Attached

GEOLOGICAL SURVEY

1994

Permits & Bonding Unit

DNR ADDITIONAL REQUIREMENTS:

NAME/SIGNATURE (Authorized Representative) M. R. Daniels, Jr., Michigan Production Superintendent		DATE 2/4/94	
APPROVED BY DNR Michael J. Norris	OFFICE CADILLAC	APPROVAL DATE MAR 08 1994	TERMINATION DATE

NOTE. THREE COPIES OF WELL PLUGGING OR REWORK (PR 7200-8) ARE TO BE FILED WITHIN 30 DAYS OF COMPLETION.



Permit Number
37519

Well Name & Number
MILLER #1-25

RECORD OF WELL PLUGGING OR REWORK

REQUIRED BY AUTHORITY OF: ACT 61, PA 1939, as amended or ACT 315, PA 1969, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Type of Well Gas

Field Name Hersey Unit

1/4 1/4 1/4, Section, Township, Range, County
SW, NW, SW, Section 25-T17N-R9W, Osceola County

Date Plugging / Rework Started
7/31/95

Date Plugging / Rework Completed
8/04/95

Name and Address of Well OWNER
MARATHON OIL COMPANY
4445 E. MOSHERVILLE ROAD
JONESVILLE, MI 49250

Name and Address of Contractor/Service Company
(attach additional sheets as needed)
McConnell & Scully, 26761 L Drive S, Homer, MI 49245
Halliburton, PO Box 374, Mt. Pleasant, MI 48804

Indicate Operation & Type of Well Permit
☐ PLUGGING ☐ REWORK ☐ Act 61 Oil & Gas ☐ Act 315 Mineral Wells

Name of DNR employee issuing Plugging Permit or Approving Change of Well Status Michael J. Moss Date Issued 3/8/94

☐ Tools, tubing, etc. left in hole - describe in Daily Chronology.

☐ Well logs run - list types and depths in Daily Chronology.

For WELL PLUGGING Only (HOLE CONDITIONS AFTER PLUGGING)

CASING				PLUGS			
Casing Size	Where Set	Amount Casing Pulled	Depth Casing Cut/Perforated: Windows Milled	Depth Bottom Top	Type of Bridge or Plug	Cement Plugs: Cement type, # sx, and additives	Tagged Top? Y/N
16"	615'	4'	4'	8290'	8290'	Cement Retainer	Y
11-3/34"	915'	4'	4'	8290'	8063'	Cement	25 sx Class "H" N
8-5/8"	5432'	4'	4'	7206'	7000'	Cement	25 sx Class "H" N
5-1/2"	8425'	2000'	2000'	5400'	4947'	Cement	50 sx Class "A" N
				2046'	1742'	Cement	75 sx Class "A" N
				925'	580'	Cement	100 sx Class "A" N
				50'	Surf	Cement	15 sx Class "A" N

Check ☐ if NORM material was reinserted into wellbore. If so, describe materials fully in the Daily Chronology section on back of this form.

For WELL REWORK Only

REWORK WAS TO: ☐ TEMPORARILY ABANDON
☐ CONVERT TO: ☐ Disposal Well ☐ Production ☐ Storage ☐ Enhanced Recovery ☐ Other
☐ REMEDIAL: ☐ Perf & Test ☐ Repair Casing/Cement ☐ Redrill ☐ Other
☐ PLUGBACK: ☐ New Production Zone ☐ Disposal ☐ Storage ☐ Enhanced Recovery ☐ Other

Well Casing Record - BEFORE Rework

Casing		Cement		Perforations			Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	If plugged, HOW?	

Well Casing Record - AFTER Rework (indicate additions and changes only; complete Test Record on next page)

Casing		Cement		Perforations			Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	If plugged, HOW?	

BEFORE REWORK

AFTER REWORK

Total Depth	Formation/Zone	Well Completed For	Total Depth	Formation/Zone	Well Completed For

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
August 1, 1995

WORKOVER/RECOMPLETION

Hersey Unit
Miller 1-25
Osceola County, MI
AFE NO:
AFE AMOUNT:

OPERATOR: Marathon Oil
RIG: McConnell/Scully Rig54
MOC/WI:
MIRU: 07/31/95

COST TO DATE:

DAY: 1

PRESENT OPERATION: Rig up to plug and abandon.

REMARKS: 07/31/95: 7:00 - Drove to location to plug well. 10:00 - Arrived on location to spot equipment. 11:00 - Spotted BOP's and adaptors on location. 13:00 - Enterra delivered and spotted liners, tanks and tools. 14:00 - Rig 54 on location. Spot on liners. Rig up KalCon Construction. Fill tanks with 10.2 state approved brine. Unhook flow lines from well head, rigged up flow line from half tank. 18:00 - Release rig crew until AM.

DAY: 2

REMARKS: 08/01/95: 7:00 am - On location, rigged up Halliburton to kill well. 1,000 psi on tubing. Pumped 55 bbl 10.2 brine down tubing. Filled casing 42 bbl. Nippled down tree. Nippled up BOP. Start out with tubing. Got out with tubing. Rigged up Halliburton Wireline. Making gauge ring and junk basket run. Ran in cement retainer and set at 8290'. Start in with tubing. Ran 5,000'. Shut in until morning.

DAY: 3

REMARKS: 08/02/95: 7 am - prepare to cut 5-1/2" casing below slips. Finish TIH w/tubing, tag cement retainer @ 8290'. RU Halliburton and Kal-Con, sting out of retainer and load hole w/115 bbls brine. Sting into retainer. Pump 25 sx Class H cement thru retainer, sting out of retainer and spot 25 sx Class H cement on top of retainer. Pull tubing to 7206'. Reverse circulate to fill hole and spot a 25 sx Class H cement plug from 7000'-7206'. TOOH w/tubing (stand back 70 stands-lay down rest). ND BOP's and tubing head. Spear 5-1/2" casing and attempt to pull but unsuccessfully. SDFN.

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
August 4, 1995

WORKOVER/RECOMPLETION

Hersey Unit
Miller 1-25
Osceola County, MI
AFE NO:
AFE AMOUNT:

OPERATOR: Marathon Oil
RIG: McConnell Rig 54
MOC/WI:
MIRU: 07/31/95

DAY: 4

REMARKS: 08/03/95: 7 am RU Enterra oilfield tools casing cutter, cut 5-1/2" casing 1' below slips and remove from hole. RU Halliburton Wireline and freepoint casing (no movement below 2500'). 50% @ 2200'. 70% @ 2000'. RU cutter and cut casing @ 2000'. RD Halliburton, RU casing tools, pull and lay down 2000' of 5-1/2" casing (49 full joints - 2 cutoffs). RD casing tools, TIH with tubing to 4400'. Radiator hose broke on rig, down for repairs. Finish TIH with 2-7/8" tubing to 5400'. SD for evening. Hal Fitch (DNR-Cadillac) was consulted concerning the cutting of the casing being shallower than planned and recommended changes to the rest of the plugging procedure which deviate from the original prognosis. 7 AM (8-4-95) Prepare to set final plugs and cap well.

DAY: 5

REMARKS: 08/04/95: Plugging complete. RU Halliburton and Kal Con, break circulation and spot a 50 sx Class A cement plug at 5400'. TOOH laying down tubing to 2046', where a 75 sx Class A cement plug was spotted. Tubing was pulled to 925' where a 100 sx Class A cement plug was spotted. TOOH to 50', spot a 15 sx Class A cement plug to surface, rig down and release Halliburton. Cut off head at ground level in cellar and weld a 1/2" steel plate on top, well number 1-25 and date 8-4-95 was etched in top of cap. RD completion unit and move to Grein 1-35, also move frac tank and 1/2 tank. SD for weekend. Following are top and bottom footage for individual cement plugs:

Plug spotted at 8290', 25 sx, top of plug at 8063'
Plug spotted at 7200', 25 sx, top of plug at 7000'
Plug spotted at 5400', 50 sx, top of plug at 4947'
Plug spotted at 2000', 75 sx, top of plug at 1742'
Plug spotted at 925', 100 sx, top of plug at 580'
Plug spotted at 50', 15 sx, top of plug at surface.

Paine 1-26
SE NE SE Sec 26 T17N R9W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

UPDATED APRIL 2014 BY JLT

API No. 21-133-37317-0000

GL @ 1124'

KB @ 1140'

WELL COMPLETION DATE: 5/18/84

PLUGGING COMPLETION DATE:

LOST HOLE PB TO SURFACE w/

PLUG @ 670' 250 SX HOWCOLITE CaCl

PLUG @ 105' 175 SX CLASS A, 3% CaCl

RIG SKIDDED 30' N AND NEW WELL DRLD ON SAME PAD

SURFACE CASING

16"; 65#/ft.

SET @ 625' KB

CMT w/450 SX HOWCOLITE/100 SX CLASS A w/3% CaCl TO SURFACE

625'

911'

14-3/4" Hole

INTERMEDIATE CASING

11-3/4"; 60#/ft.

SET @ 911' KB

CMT w/ 170 SX HOWCOLITE/200 SX CLASS A w/3% CaCl TO SURFACE

5408'

PER TEMP SURVEY:

TOP OF POOR CMT @ 630', TOP OF GOOD CMT @ 2030', PLUG @ 3033'

TOP OF POOR CMT @ 40'

10-5/8" Hole

INTERMEDIATE CASING

8 5/8"; 32#/ft.

SET @ 5408' KB

CMT w/1100 SX HOWCOLITE/200 SX CLASS A w/2% CaCl TO SURFACE

LAST PRODUCING @ 296 MCFD OF GAS/DAY

PROD. CASING

5-1/2"; 17#/ft.

7-7/8" Hole SET @ 8090' KB

CMT w/300 SX HOWCOLITE w/18% SALT/425 SX POZMIX w/18% SALT/
160 SX SPECIAL H TO SURFACE

BURNT BLUFF REPERFS

8024'-8044' (4spf)

BURNT BLUFF PERFS

8026'-8045' (38x)

TD @ 8095' KB
PB TO SURFACE (LOST HOLE)

Paine 1-26 Well History

<u>DATE</u>	<u>DESCRIPTION</u>
1/5/1984	SPUD.
1/12/1984	LOST HOLE. PLUGGED BACK TO SURFACE. FIRST PLUG AT 670', 250 SX HOWCOLITE CaCl. SECOND PLUG AT 105', 175 SACKS, CLASS A, 3% CaCl. HAD CIRCULATION ON BOTH PLUGS, HOLE STAYED FULL. HAD 3 BARRELS CEMENT RETURN TO SURFACE ON SECOND PLUG. RIG SKIDDED ABOUT 30' N AND NEW WELL DRILLED ON SAME PAD.
2/15/1984	RUSC. MAKE GR RUN TO 8050'. ROH. RU 20' OF 2-1/8" THRU-TUBING PERFORATING GUNS LOADED TO SHOOT 4 SPF. RIH w/PERFORATING GUN. USING CCL, POSITION GUN TO PERFORATE 8024'-8044'. ONCE ON DEPTH, FIRE GUNS & ROH. RDSC. RETURN WELL TO PRODUCTION.
5/18/1984	PERFORATED 38 HOLES: 8026'-8045'
5/18/1984	WELL COMPLETED. FORMATION AT TD CABOT HEAD. PRODUCING FM BURNT BLUFF. 16" SET AT 625'; 450 SX HOWCOLITE/100 SX CLASS A w/3% CaCl 11-3/4" SET AT 911'; 170 SX HOWCO LITE/200 SX CLASS A w/3% CaCl 8-5/8" SET AT 5408'; 1100 SX HOWCOLITE/200 SX CLASS A w/2% CaCl 5-1/2" SET AT 8090'; 300 SX HOWCOLITE w/18% SALT/425 SX POZMIZ w/18% SALT/160 SX SPECIAL H LAST PRODUCTION/DAY: 296 MCFD OF GAS

STATE OF MICHIGAN
REQUEST FOR TRANSFER OF A PERMIT

TYPE OR PRINT

SUBMIT 4 COPIES TO: Department of Natural Resources
Geological Survey Division
Box 30028
Lansing, Michigan 48909

Filing for change of ownership of well is required in accordance with ☒ Act 61, P.A. 1939 and ☐ Act 315 P.A. 1969, as amended, and Administrative Rules promulgated thereunder.

PERMIT NO 37317	WELL TYPE Gas
FIELD NAME Hersey-Clinton	
WELL NAME AND NUMBER Paine 1-26	
WELL LOCATION SE 1/4 NE 1/4 SE 1/4 SECTION 26 T 17N R 9W	
TOWNSHIP Hersey	COUNTY Osceola

TRANSFER OF A PERMIT FROM:

NAME(S) OF SELLING OWNER(S)

PPG Oil & Gas Co., Inc.

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

All operating rights are discharged by

Owner(s)

Representative(s)

Signature(s)

Date(s)

PPG Oil & Gas Co., Inc., Mr. Donald R. Hall

Donald R. Hall 12/14/87

ELIGIBILITY FOR PERMITS IS CONDITIONED UPON COMPLIANCE WITH THE STATUTES, RULES AND ORDERS OF THE DEPARTMENT OF NATURAL RESOURCES. PERMITS WILL NOT BE GRANTED TO PERSONS NOT IN COMPLIANCE.

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

TRANSFER OF A PERMIT TO:

NAME(S) OF ACQUIRING OWNER(S)

Marathon Oil Company

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

(We) (I) have acquired the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.

SURETY BOND:

☐

SINGLE WELL

☐

ATTACHED

BONDING CO.

SAFECO Insurance Company of America

☒

BLANKET

☒

ON FILE

BOND NUMBER

5194219

All operating rights and responsibilities are assumed by

Owner(s)

Representative(s)

Signature(s)

Date(s)

Marathon Oil Company, Mr. David W. Hoopman

David W. Hoopman

12/16/87

FOR DEPARTMENT OF NATURAL RESOURCES USE ONLY

DISTRIBUTION BY DNR

☒ Lansing

☐ Acquiring Owner

☐ Selling Owner

☐ Field

APPROVED

L. J. Szyfman
Signature

6/28/88
Date

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in DUPLICATE Within 30 Days after Well Completion

PERMIT NUMBER
37317
DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT P.P.G. Oil & Gas Co., Inc. 2258 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling Company, Inc. 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Paine #1-26						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION SE/4, NE/4, SE/4		SECTION 26	TOWNSHIP 17N	RANGE 9W	TOWNSHIP NAME Hersey		
FOOTAGES (North/South) 822 Ft. from N Line and 560 Ft. from E Line of quarter section		FOOTAGES (East/West)		COUNTY NAME Osceola			
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME		
FOOTAGES (North/South)		FOOTAGES (East/West)		COUNTY NAME			
DRILLING BEGUN 1-5-84		TOTAL DEPTH OF WELL Driller 8095 Log 8098		TYPE WELL Gas		ELEVATIONS	
DRILLING COMPLETED 2-16-84		FORMATION AT T.D. Cabot Head		FT. DRLD. - ROTARY TOOLS From 0 To 8098		K.B. 1140'	R.F. 1139'
WELL COMPLETED 5-18-84		PRODUCING FORMATION(S) Burnt Bluff		FT. DRLD. - CABLE TOOLS From To		R.T.	Grd. 1124'

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
							YES	NO
16"	625'	550	-					
11 3/4"	911'	370	-	5-18-84	38	8026' to 8045'	X	
8 5/8"	5403'	1400						
5 1/2"	8090'	885						

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
							Sam- ples	Other	Pro	Mud Line	Gas Log	Fill Up
Burnt Bluff	Gas	8014'	8045'	None								

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
5-18-84	8026-8045'	500 gal 20% Fe acid	None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECTN	RUN AT.	DEGREES	YES	NO	DEPTH
Schlumberger	X	Sonic/GR	6400-8095'	1288'	1 1/2°					
Birdwell		DLL-MLL/GR	3250-8095'	3332'	0°					
		LDI/CNI	100-8095'	7832'	1°					

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH
0	-	0	1155	0	0	Est. 4671 @ 8044'

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE	NAME AND TITLE (PRINT)	SIGNATURE
6/21/84	Randall L. Schroeder - Senior Engineer	<i>Randall L. Schroeder</i>

NOTICE REPORT COMPLETE SAMPLES AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

Lost Hole

PLUG HAS COPIED

PERMIT NUMBER

1984317

LOST HOLE

JAN 20 1984

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas Co., Inc.

COMPLETE LEASE OR FARM NAME(S)

Paine

WELL NUMBER

1-26

WELL LOCATION

SE 1/4 NE 1/4 SE 1/4 SEC. 26 T. 17N R. 9W

TOWNSHIP

Hersey

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole (LOST HOLE)

TOTAL DEPTH

FORMATION

DATE PLUGGING STARTED

1-12-84

DATE PLUGGING COMPLETED

1-12-84

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Discussed with Jack Snider

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
20"	77'	None	

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	670-105	250 HOWCOLite
	105-0	175 Class A

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging: Don Smith, Marvin Woods

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED Plugged back to surface.

First plug at 670', 250 sacks HOWCOLite CaCl.

Second plug at 105', 175 sacks, Class A, 3% CaCl.

Had circulation on both plugs, hole stayed full. Had 3 barrels cement return to surface on second plug.

Rig skidded about 30' N and new well drilled on same pad.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

Donald D. Metzger

Director, Exploration & Michigan Operations

COMPANY NAME AND ADDRESS

PPG Oil & Gas Co., Inc.
2258 Enterprise Drive
Mt. Pleasant, MI 48858

SIGNATURE

Donald D. Metzger

DATE (Month, Day, Year)

1-16-84

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

1/30/84 rig skidded about 30' N and new well drld. on same pad.
(M. MOSS)

Regulatory Control Unit
MAR 14 1984
GEOLOGICAL SURVEY

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE

DIVISION

DATE

Michael J. Moss

CADILLAC

1/30/84

DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

OWNER DISTRIBUTION

Permitted -- Orig & 1 copy
Division Office -- 2 copies
Field Office -- File copy
Others -- On request

PERMIT NUMBER

37317 Lost hole

FIELD NAME

Hersey

PERMIT TO PLUG AND ABANDON

NAME AND ADDRESS OF PERMITTEE

PDC

LEASE NAME AND WELL NO.

Paine #1-26 LOST HOLE

LOCATION (1/4, 1/2, 3/4 or other)

SE 1/4 SE 1/4

SECTION

26 T17N R 9E

TOWNSHIP

Hersey

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Lost hole

DATE COMPLETED

1/11/84

DATE PLUGGING WILL START

1/11/84

PLUGGING PERMIT REQUESTED BY & DATE

D. Smith 1/11/84

LAST PRODUCTION

BOPD

BWPD

MCFGPD

DATE

PLUGGING TO BE DONE BY

PERMIT MAILED TO

COPIES MAILED TO

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP.	PERFORATIONS
	2 1/2"	72'			

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

T.D. 653'

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder.

Spot 425 ss cut from T.D. to surface. Shd' rin.

GEOLOGICAL SURVEY

JAN 23 1984

Regulatory Control Unit

*NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

Michael J. Myers

OFFICE

Cadillac #46

DATE

1/12/84

NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion.

R-7229
Rev. 11/77

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028
LANSING, MICHIGAN 48909

REQUIRED BY AUTHORITY OF:

☒ ACT 61, P.A. 1939, AS AMENDED ☐ ACT 315, P.A. 1969, AS AMENDED

APPLICATION TO (Submit 4 copies):

☒ CHANGE WELL STATUS ☐ PLUG AND ABANDON

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT

CHANGE OF WELL STATUS REQUESTED FOR:

☐ PLUG BACK ☐ EXTEND PLUGGING (T.A.) ☒ PERFORATE
☐ CONVERT TO INJECTION OR DISPOSAL WELL ☐ OTHER

☐ ACIDIZE (315 ONLY) ☐ FRACTURE (315 ONLY)

LAST PRODUCTION / INJECTION AND TYPE OF FLUID
(Amount per day & injection pressure)

296 MCFD of Gas

PERMIT NO.
37317

TYPE OF WELL
Gas

NAME AND ADDRESS OF WELL OWNER ☐ APPROVAL MAILED

Marathon Oil Company
P.O. Box 68
Jonesville, MI 49250

FEB 10 1992

FIELD/FACILITY NAME
Hersey Unit

WELL NAME
Paine

WELL NO.
1-26

WELL LOCATION
SE 1/4 of NE 1/4 of SE 1/4 Section 26 T 17N R 4W

TOWNSHIP
Hersey

COUNTY
Osceola

DATE DRILLING COMPLETED
02-15-84

DATE LAST PRODUCED/UTILIZED
Currently Producing

WORK TO BE DONE BY: ☐ APPROVAL MAILED
To be Determined

STARTING DATE

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP	PERFORATIONS
20"	16", 65#	635'	450 sx Howco lite/100 sx Class A w/3% CaCl		
14-3/4"	11-3/4", 60#	911'	170 sx Howco lite/200 sx Class A w/3% CaCl		
10-5/8"	8-5/8", 32#	5408'	1100 sx Howco lite/200 sx Class A w/2% CaCl		
7-7/8"	5-1/2", 20#	8090'	300 sx Howco lite w/18% salt/425 sx Pozmix w/18% salt/160 sx Special H		8026-45

FORMATION RECORD (Formation and depth, oil, gas and water shows, etc.):

See Attached

DETAIL PROPOSED PROCEDURES:

RUSC. Make GR run to 8050'. ROH. RU 20' of 2-1/8" thru-tubing perforating guns loaded to shoot 4 spf. RIH w/perforating gun. Using CCL, position gun to perforate 8024'-8044'. Once on depth, fire guns & ROH. RDSC. Return well to production.

GEOLOGICAL SURVEY

FEB 11 1992

Permits & Bonding Unit

DNR ADDITIONAL REQUIREMENTS:

NAME/SIGNATURE (Authorized Representative)

N. R. Daniels, Jr., Michigan Production Supt.

DATE
2/3/92

APPROVED BY DNR

OFFICE

APPROVAL DATE

FEB 10 1992

TERMINATION DATE

NOTE: THREE COPIES OF WELL PLUGGING OR REWORK (PR 7200-8) ARE TO BE FILED WITHIN 30 DAYS OF COMPLETION.



REQUEST FOR TRANSFER OF PERMIT

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, 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☐ Part 625 Mineral Well

Permit number 37317	Well type Gas	Current true vertical depth 8090
Well name and number Paine 1-26		
Surface location SE 1/4 NE 1/4 SE 1/4 Section 26 T 17N R 9W		
Township Hersey		County Osceola

NOTE: Eligibility for permits is conditioned upon compliance with the statutes, rules and orders of the Department of Environmental Quality. Permits shall not be transferred to persons not in compliance. A permit for a well shall not be transferred if the permittee is under notice because of unsatisfactory conditions at the well site until compliance is achieved. The acquiring permittee shall attach a current Organization Report (EQP 7200-13). This permit does not convey property rights in either real estate or material nor does it authorize any injury to private property or invasion of private or public rights nor does it waive the necessity of seeking federal and local permits or complying with other state statutes.

TRANSFER OF A PERMIT FROM:

Name(s) of Selling Permittee(s) Marathon Oil Company		Fed. I.D.# or S.S.# 25-1410539	
Address: Number and Street, City or Town, State, ZIP Code Telephone 7301 NW Expressway Oklahoma City, OK. 73132		(405) 720-7373	
All permits rights and responsibilities are discharged by:			
Marathon Oil Company Permittee	Charles A. Paulson Authorized representative name	 Signature	8/2/00 Date
_____ Permittee	_____ Authorized representative name	_____ Signature	_____ Date
_____ Permittee	_____ Authorized representative name	_____ Signature	_____ Date

TRANSFER OF A PERMIT TO:

Name(s) of Acquiring Permittee(s): RSEC, L.L.C.		Fed. I.D.# or S.S.# 84-1533899	
Address: Number and Street, City or Town, State, ZIP Code 1200 17th Street, Suite 2350 Denver, CO 80202		Telephone (303) 892-5616	
(We are) (I am) an owner or authorized representative of the owner of the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.			
BOND: ☐ Single Well ☐ Attached Surety or Bank ☐ Blanket ☐ On File Bond Number Pending Amount _____ ☐ Statement of Financial Responsibility			
All permittee rights and responsibilities are assumed by:			
RSEC, L.L.C. Permittee	Steve Swanson Authorized representative name	 Signature	8/3/00 Date
_____ Permittee	_____ Authorized representative name	_____ Signature	_____ Date
_____ Permittee	_____ Authorized representative name	_____ Signature	_____ Date

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

Approved Signature	MAY 31 2001 Date	Distribution by DEQ ☒ Lansing ☐ Selling Owner ☐ Field ☐ Acquiring Owner
-----------------------	---------------------	--



REQUEST FOR TRANSFER OF PERMIT

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, 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☐ Part 625 Mineral Well

Permit number 37317	Well type Gas	Current true vertical depth 8090
Well name and number Paine 1-26		
Surface location SE 1/4 NE 1/4 SE 1/4 Section 26 T17N R9W		
Township Hersey		County Osceola

NOTE: Eligibility for permits is conditioned upon compliance with the statutes, rules and orders of the Department of Environmental Quality. Permits shall not be transferred to persons not in compliance. A permit for a well shall not be transferred if the permittee is under notice because of unsatisfactory conditions at the well site until compliance is achieved. The acquiring permittee shall attach a current Organization Report (EQP 7200-13). This permit does not convey property rights in either real estate or material nor does it authorize any injury to private property or invasion of private or public rights nor does it waive the necessity of seeking federal and local permits or complying with other state statutes.

TRANSFER OF A PERMIT FROM:

Name(s) of Selling Permittee(s) RSEC, L.L.C.		Fed. I.D.# or S.S.# 84-1533899	
Address: Number and Street, City or Town, State, ZIP Code Telephone 1200 17th Street, Suite 2350 Denver, CO 80202		(303) 892-5616	
All permits rights and responsibilities are discharged by:			
RSEC, L.L.C. Permittee	Steve Swanson Authorized representative name	 Signature PRESIDENT	8/5/02 Date
Permittee	Authorized representative name	Signature	Date
Permittee	Authorized representative name	Signature	Date

TRANSFER OF A PERMIT TO:

Name(s) of Acquiring Permittee(s): Whiting Petroleum Corporation		Fed. I.D.# or S.S.# 84-0918829	
Address: Number and Street, City or Town, State, ZIP Code 1700 Broadway, Suite 2300 Denver, CO 80290-2300		Telephone (303) 837-1661	
(We are) (I am) an owner or authorized representative of the owner of the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.			
BOND: ☐ Single Well ☐ Attached Surety or Bank <u>Travelers Casualty Surety Co.</u>			
☒ Blanket ☒ On File Bond Number <u>103847277</u> Amount <u>\$250,000</u>			
☐ Statement of Financial Responsibility			
All permittee rights and responsibilities are assumed by:			
Whiting Petroleum Corporation Permittee	James T. Brown Authorized representative name	 Signature	8-15-02 Date
Permittee	Authorized representative name	Signature	Date
Permittee	Authorized representative name	Signature	Date

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

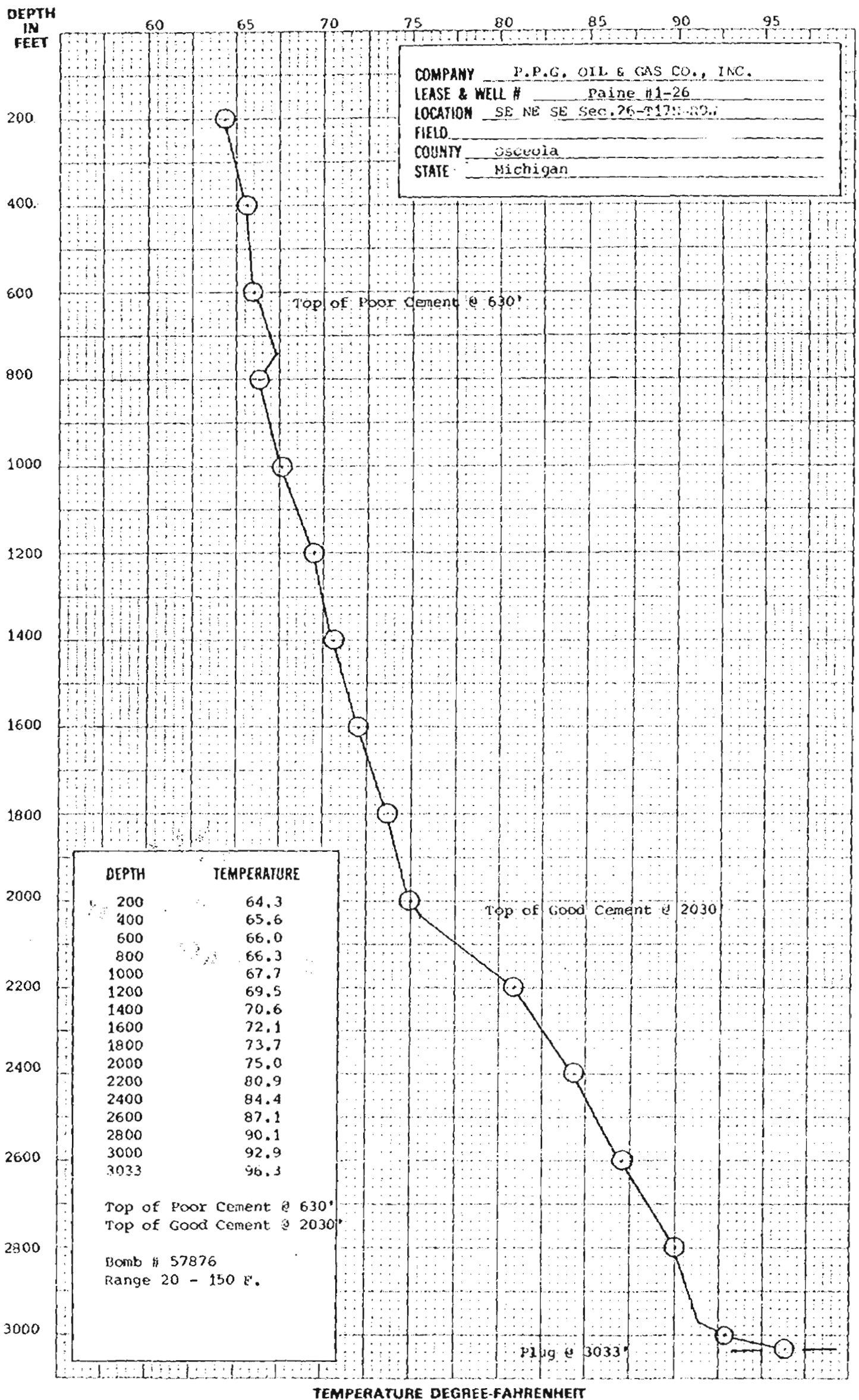
Approved Signature	DEC 19 2002 Date	Distribution by DEQ ☒ Lansing ☐ Selling Owner ☐ Field ☐ Acquiring Owner
-----------------------	---------------------	--

PERMITS & BONDING

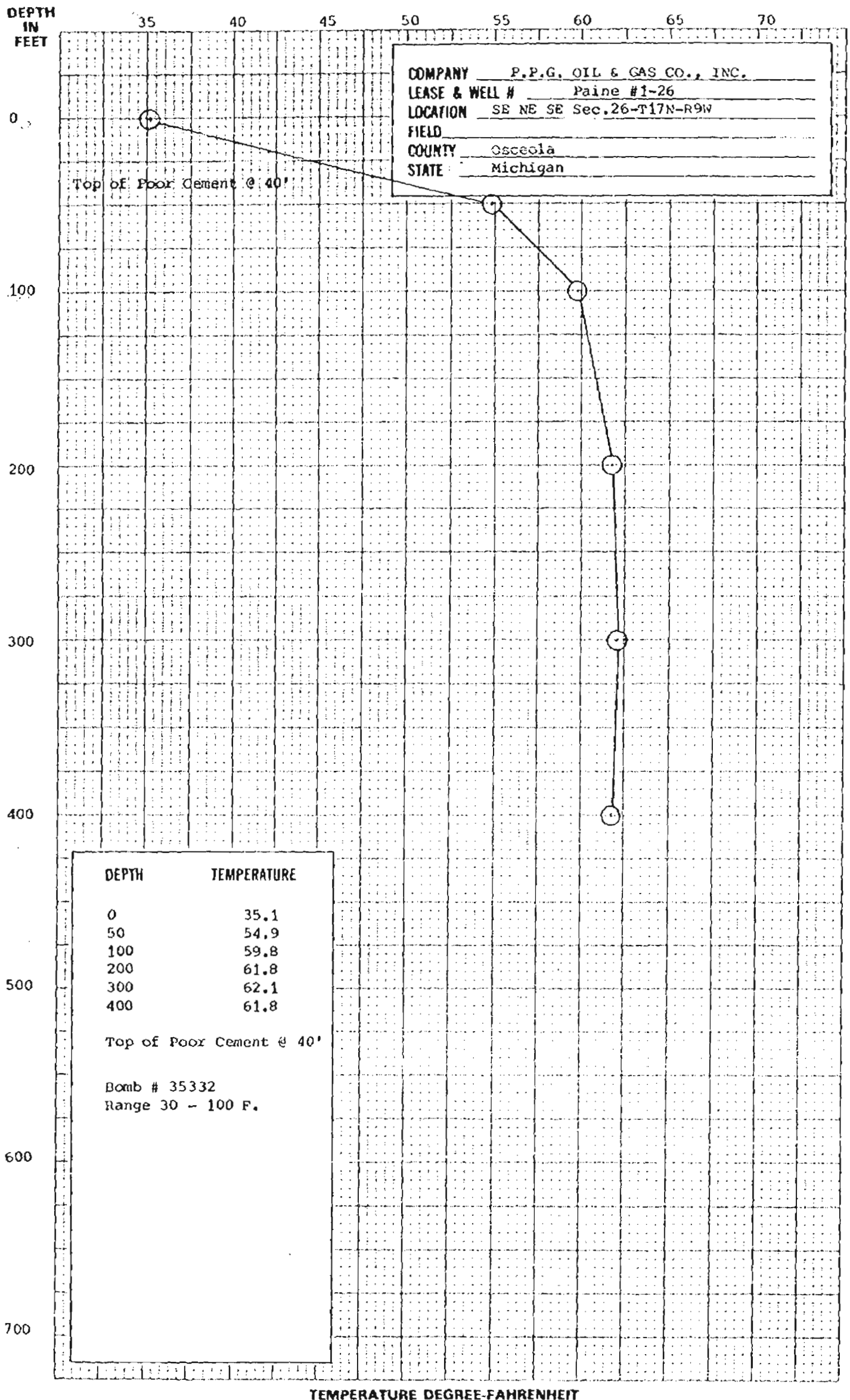
AUG 28 2002

GEOLOGICAL SURVEY

TEMPERATURE SURVEY



TEMPERATURE SURVEY



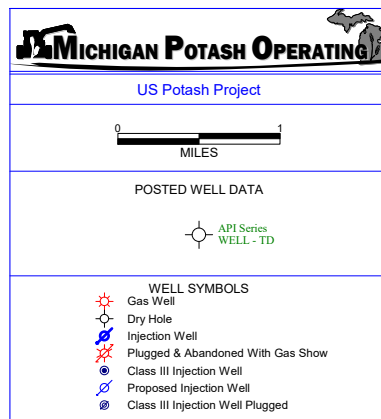
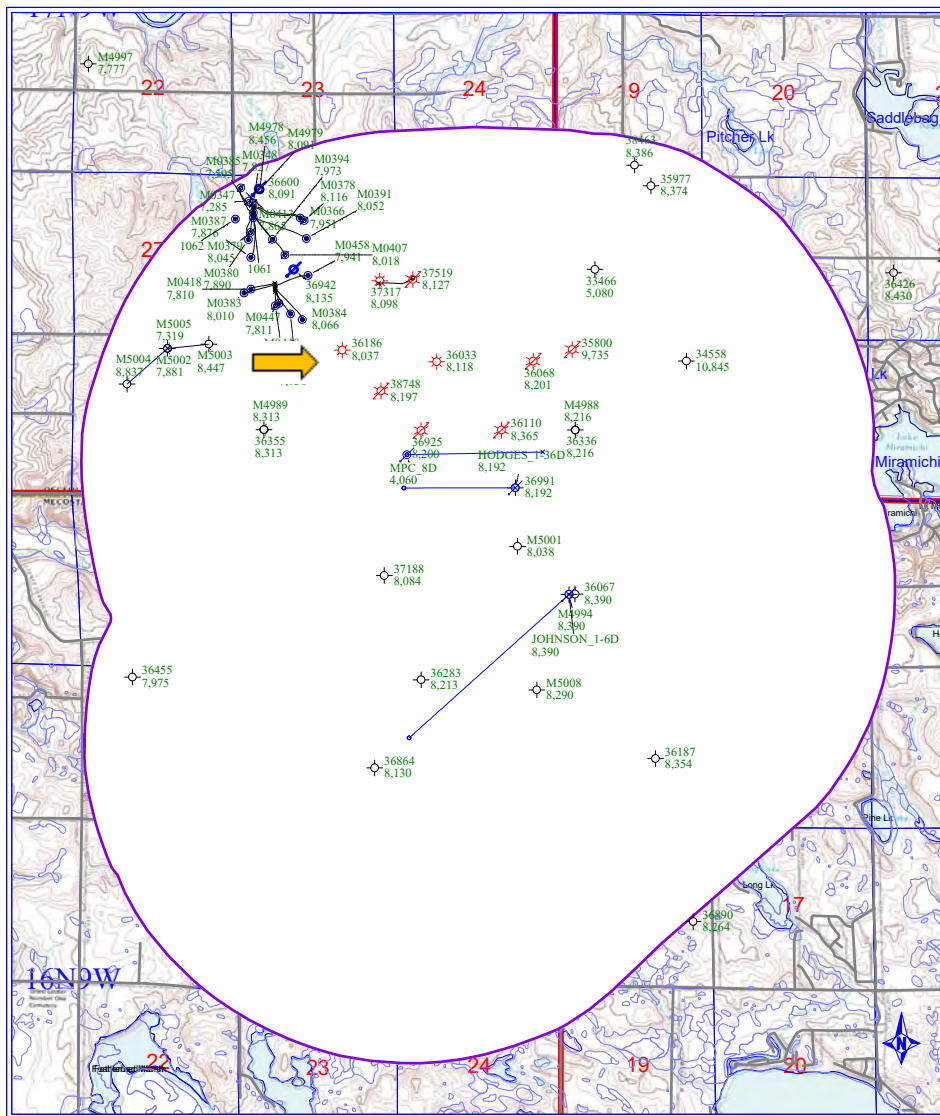
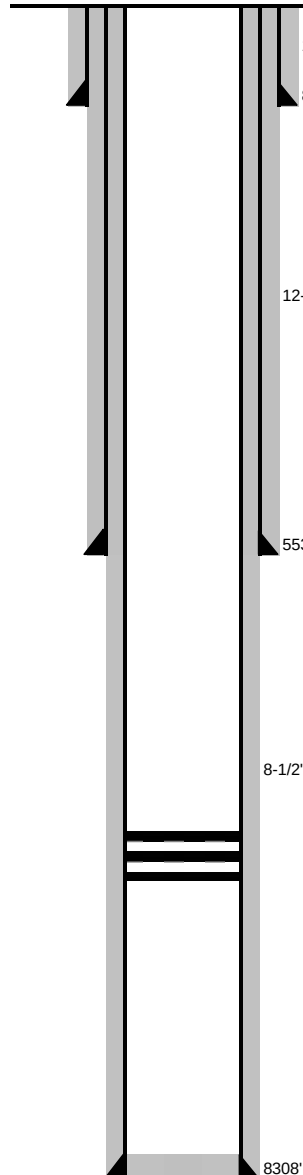


Figure A8. Map showing the wells that penetrate the confining zone in the AOR.

Paine 1-35
NE NW NE Sec 35 T17N R9W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

UPDATED APRIL 2014 BY JLT

API No. 21-133-36186-0000
GL @ 1191'
KB @ 1215'
WELL COMPLETION DATE: 2/8/83
PLUGGING COMPLETION DATE:



24" CONDUCTOR DRIVEN TO 56'

17-1/2" Hole

SURFACE CASING

13-3/8"; 48#/ft.

SET @ 852' KB

CMT w/575 SX 50/50 POZ + 200 SX CLASS A w/3% CaCl TO SURFACE

12-1/4" Hole

INTERMEDIATE CASING

9-5/8"; 40#/ft.

SET @ 5530' KB

CMT w/1295 SX 50/50 POZ + 250 SX CLASS A w/18% SALT TO SURFACE

5530'

8-1/2" Hole

BURNT BLUFF PERFS

8077'-8080', 8086'-8089', 8099'-8105'

8115'-8117'

PROD. CASING

5-1/2"; 17#/ft.

SET @ 8308' KB

CMT w/800 SX 50/50 POZ 6% GEL, 18% SALT + 300 SX CLASS H

8308'

TD @ 8309' KB

LAST PRODUCING @ 348 MCFD OF GAS/DAY

Paine 1-35 Well History

<u>DATE</u>	<u>DESCRIPTION</u>
11/6/1982	SPUD.
12/24/1982	RUSC. MAKE GR RUN TO 8117'. ROH. RU 19' OF 2-1/8" THRU-TUBING PERFORATING GUNS LOADED TO SHOOT 4 SPF. RIH w/PERFORATING GUN. USING CCL, POSITION GUN TO PERFORATE 8086'-89', 8099'-8105'. ONCE AT DEPTH, FIRE GUNS & ROH. RDSC. RETURN WELL TO PRODUCTION.
2/8/1983	WELL COMPLETED. FORMATION AT TD CINCINNATIAN. PRODUCING FM BURNT BLUFF. 24" CONDUCTOR DRIVEN TO 56' 13-3/8" SET AT 858'; 575 SX 50/50 POZ + 200 SX CLASS A w/3% CaCl 9-5/8" SET AT 5525'; 1295 SX 50/50 POZ + 250 SX CLASS A w/18% SALT 5-1/2" SET AT 8308'; 800 SX 50/50 POZ 6% GEL, 18% SALT + 300 SX CLASS H PERFORATIONS: 8077'-8080', 8086'-8089', 8099'-8105', 8115'-8117'

LAST PRODUCTION/DAY: 348 MCFD OF GAS

FEB 24 1983

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

PERMIT NUMBER

36186

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Willmet, Inc. 2250 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling Company 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Paine #1-35						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE NW NE		SECTION 35	TOWNSHIP 17N	RANGE 9W	TOWNSHIP NAME Hersey		
FOOTAGES (North/South) 460 Ft. from North		FOOTAGES (East/West) 852 Ft. from West		COUNTY NAME Osceola			
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME		
FOOTAGES (North/South)		FOOTAGES (East/West)		COUNTY NAME			
Line and		Line and		Line of quarter section			
DRILLING BEGUN 11-6-82		TOTAL DEPTH OF WELL Driller 8309 Log 8307		TYPE WELL Gas Well		ELEVATIONS	
DRILLING COMPLETED 12-21-82		FORMATION AT T.D. Cincinnatian		FT. DRILD. - ROTARY TOOLS From 0 To 8307		K.B. 1215	R.F. 1213
WELL COMPLETED 2-8-83		PRODUCING FORMATION(S) Burnt Bluff		FT. DRILD. - CABLE TOOLS From To		R.T.	Grd. 1191

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
24"	56'	D.P.	---				YES	NO
13 3/8"	852'	775 Sx	---	1-15-83	2x/fl	8115 - 8117	XX	
9 5/8"	5530'	2400 Sx	---	1-15-83	2x/ft	8077-80, 86-89,	XX	
5 1/2"	8308'	1100 Sx	---			99-8105		

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)				
Burnt Bluff	Gas	8076	8118				Sam- ples	Odor	Pits	Mud Line	Gas Log
				Reed City Zn	Gas	4150					X
				Sour Zone	Gas	4710					X
				Manitoulin	Gas	8240					X

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (IF U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	500 gal. 28%		None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECTN	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	XX	Sonic	200 - 8307			3200	1 1/2°			
Birdwell		LDT-CNL	200 - 8307			3800	1 1/2°			
		DLL-MLL	.3300- 8307			5850	1 1/2°			
McCull.	XX	Bond Log				7032	2 1/4°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH
-----	-----	-----	3000	2 Bbls	-----	4702-8097

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE	NAME AND TITLE (PRINT)	SIGNATURE
2-21-83	William E. Booker, Geolgoist	<i>William Booker</i>

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE !

R - 7210
Rev. 3/77

STATE OF MICHIGAN
REQUEST FOR TRANSFER OF A PERMIT

TYPE OR PRINT

SUBMIT 4 COPIES TO: Department of Natural Resources
Geological Survey Division
Box 30028
Lansing, Michigan 48909

Filing for change of ownership of well is required in accordance with ☒ Act 61, P.A. 1939 and ☐ Act 315 P.A. 1969, as amended, and Administrative Rules promulgated thereunder.

PERMIT NO 36186	WELL TYPE Gas
FIELD NAME Hersey-Clinton	
WELL NAME AND NUMBER Paine 1-35	
WELL LOCATION NE 1/4 NW 1/4 NE 1/4 SECTION 35 T 17N R 9W	
TOWNSHIP Hersey	COUNTY Osceola

TRANSFER OF A PERMIT FROM:

NAME(S) OF SELLING OWNER(S)

PPG Oil & Gas Co., Inc.

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

All operating rights are discharged by

Owner(s)

Representative(s)

Signature(s)

Date(s)

PPG Oil & Gas Co., Inc., Mr. Donald R. Hall

Donald R. Hall 12/14/87

ELIGIBILITY FOR PERMITS IS CONDITIONED UPON COMPLIANCE WITH THE STATUTES, RULES AND ORDERS OF THE DEPARTMENT OF NATURAL RESOURCES. PERMITS WILL NOT BE GRANTED TO PERSONS NOT IN COMPLIANCE.

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

TRANSFER OF A PERMIT TO:

NAME(S) OF ACQUIRING OWNER(S)

Marathon Oil Company

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

(We) (I) have acquired the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.

SURETY BOND:

☐ SINGLE WELL

☐ ATTACHED

BONDING CO. SAFECO Insurance Company of America

☒ BLANKET

☒ ON FILE

BOND NUMBER 5194219

All operating rights and responsibilities are assumed by

Owner(s)

Representative(s)

Signature(s)

Date(s)

Marathon Oil Company, Mr. David W. Hoopman

D. W. Hoopman

12/16/87

FOR DEPARTMENT OF NATURAL RESOURCES USE ONLY

APPROVED

[Signature]
Signature

6/28/88
Date

DISTRIBUTION BY DNR

- ☒ Lansing
- ☐ Acquiring Owner
- ☐ Selling Owner
- ☐ Field

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028
LANSING, MICHIGAN 48909

REQUIRED BY AUTHORITY OF:

☒ ACT 61, P.A. 1939, AS AMENDED ☐ ACT 315, P.A. 1969, AS AMENDED

APPLICATION TO (Submit 4 copies):

☒ CHANGE WELL STATUS ☐ PLUG AND ABANDON

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

CHANGE OF WELL STATUS REQUESTED FOR:

☐ PLUG BACK ☐ EXTEND PLUGGING (T.A.) ☒ PERFORATE
☐ CONVERT TO INJECTION OR DISPOSAL WELL ☐ OTHER

☐ ACIDIZE (315 ONLY) ☐ FRACTURE (315 ONLY)

LAST PRODUCTION/INJECTION AND TYPE OF FLUID
(Amount per day & injection pressure)

348 MCFD of Gas

WORK TO BE DONE BY: ☐ APPROVAL MAILED

To be Determined

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT/FT	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP	PERFORATIONS
17-1/2"	13-3/8", 48#	858'	575 sx 50/50 Poz/200 sx Class A w/3% CaCl		
12-1/4"	9-5/8", 40#	5525'	1295 sx 50/50 Poz/250 sx Class A w/18% salt		
8-1/2"	5-1/2", 17#	8308'	800 sx 50/50 Poz 6% gel, 18% salt/300 sx		8077-80, 86-89

FORMATION RECORD (Formation and depth, oil, gas and water shows, etc.):

Class "H" 8099-8105
8115-8117

See Attachment

DETAIL PROPOSED PROCEDURES:

RUSC. Make GR run to 8117'. ROH. RU 19' of 2-1/8" thru-tubing perforating guns loaded to shoot 4 spf. RIH w/perforating gun. Using CCL, position gun to perforate 8086'-89', 8099'-8105'. Once on depth, fire guns & ROH. RDSC. Return well to production.

GEOLOGICAL SURVEY

FEB 28 1992

DNR ADDITIONAL REQUIREMENTS:

Permits & Bonding Unit

NAME/SIGNATURE (Authorized Representative)

N. R. Daniels, Jr., Michigan Production Supt.

APPROVED BY DNR

OFFICE

APPROVAL DATE

DATE

TERMINATION DATE

FEB 10 1992

2/3/92

NOTE: THREE COPIES OF WELL PLUGGING OR REWORK (PR 7200-8) ARE TO BE FILED WITHIN 30 DAYS OF COMPLETION.

PR 7200-8

**REQUEST FOR TRANSFER OF PERMIT**

Required by authority of Part 615 Supervisor of Wells or Part 625 Mineral Wells, 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☐ Part 625 Mineral Well

Permit number 36186	Well type Gas	Current true vertical depth 8308
Well name and number Paine #1-35		
Surface location NE 1/4 NW 1/4 NE 1/4 Section 35 T 17N R 9W		
Township Hersey		County Osceola

NOTE: Eligibility for permits is conditioned upon compliance with the statutes, rules and orders of the Department of Environmental Quality. Permits shall not be transferred to persons not in compliance. A permit for a well shall not be transferred if the permittee is under notice because of unsatisfactory conditions at the well site until compliance is achieved. The acquiring permittee shall attach a current Organization Report (EQP 7200-13)

This permit does not convey property rights in either real estate or material nor does it authorize any injury to private property or invasion of private or public rights nor does it waive the necessity of seeking federal and local permits or complying with other state statutes.

TRANSFER OF A PERMIT FROM:

Name(s) of Selling Permittee(s) Marathon Oil Company		Fed. I.D.# or S.S.# 25-1410539	
Address: Number and Street, City or Town, State, ZIP Code Telephone 7301 NW Expressway Oklahoma City, OK. 73132		(405) 720-7373	
All permits rights and responsibilities are discharged by:			
Marathon Oil Company Permittee	Charles A. Paulson Authorized representative name	 Signature	5/4/00 Date
Permittee	Authorized representative name	Signature	Date
Permittee	Authorized representative name	Signature	Date

TRANSFER OF A PERMIT TO:

Name(s) of Acquiring Permittee(s): RSEC, L.L.C.		Fed. I.D.# or S.S.# 84-1533899	
Address: Number and Street, City or Town, State, ZIP Code 1200 17th Street, Suite 2350 Denver, CO 80202		Telephone (303) 892-5616	
(We are) (I am) an owner or authorized representative of the owner of the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.			
BOND: ☐ Single Well ☐ Attached Surety or Bank ☐ Blanket ☐ On File Bond Number Pending Amount			
☐ Statement of Financial Responsibility			
All permittee rights and responsibilities are assumed by:			
RSEC, L.L.C. Permittee	Steve Swanson, MANAGER Authorized representative name	 Signature	5/4/00 Date
Permittee	Authorized representative name	Signature	Date
Permittee	Authorized representative name	Signature	Date

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

Approved Signature	MAY 31 2001 Date	Distribution by DEQ ☒ Lansing ☐ Selling Owner ☐ Field ☐ Acquiring Owner
-----------------------	---------------------	--

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - GEOLOGICAL SURVEY DIVISION

REQUEST FOR TRANSFER OF PERMIT

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

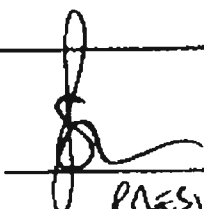
☒ Part 615 Oil/Gas Well

☐ Part 625 Mineral Well

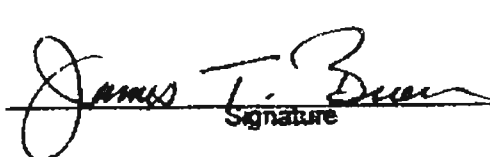
Permit number 36186	Well type Gas	Current true vertical depth 8308
Well name and number Paine #1-35		
Surface location NE 1/4 NW 1/4 NE 1/4 Section 35 T 17N R 9W		
Township Hersey		County Osceola

NOTE: Eligibility for permits is conditioned upon compliance with the statutes, rules and orders of the Department of Environmental Quality. Permits shall not be transferred to persons not in compliance. A permit for a well shall not be transferred if the permittee is under notice because of unsatisfactory conditions at the well site until compliance is achieved. The acquiring permittee shall attach a current Organization Report (EQP 7200-13).
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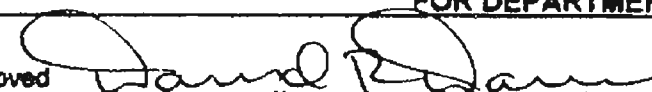
TRANSFER OF A PERMIT FROM:

Name(s) of Selling Permittee(s) RSEC, L.L.C.		Fed. I.D.# or S.S.# 84-1533899	
Address: Number and Street, City or Town, State, ZIP Code Telephone 1200 17th Street, Suite 2350 Denver, CO 80202		(303) 892-5616	
All permits rights and responsibilities are discharged by:			
RSEC, L.L.C. Permittee	Steve Swanson Authorized representative name	 Signature PRESIDENT	8/5/02 Date
_____ Permittee	_____ Authorized representative name	_____ Signature	_____ Date
_____ Permittee	_____ Authorized representative name	_____ Signature	_____ Date

TRANSFER OF A PERMIT TO:

Name(s) of Acquiring Permittee(s): Whiting Petroleum Corporation		Fed. I.D.# or S.S.# 84-0918829	
Address: Number and Street, City or Town, State, ZIP Code 1700 Broadway, Suite 2300 Denver, CO 80290-2300		Telephone (303) 837-1661	
(We are) (I am) an owner or authorized representative of the owner of the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.			
BOND: ☐ Single Well ☐ Attached Surety or Bank <u>Travelers Casualty Surety Co.</u>			
☒ Blanket ☒ On File Bond Number <u>103847277</u> Amount <u>\$250,000</u>			
☐ Statement of Financial Responsibility			
All permittee rights and responsibilities are assumed by:			
Whiting Petroleum Corporation Permittee	James T. Brown Authorized representative name	 Signature	8-15-02 Date
_____ Permittee	_____ Authorized representative name	_____ Signature	_____ Date
_____ Permittee	_____ Authorized representative name	_____ Signature	_____ Date

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

Approved  Signature	DEC 19 2002 Date	Distribution by DEQ ☒ Lansing ☐ Selling Owner ☐ Field ☐ Acquiring Owner
---	---------------------	--

PERMITS & BONDING

EQP 7200-7 (Rev 3/99)

Mail Original and 3 copies to:

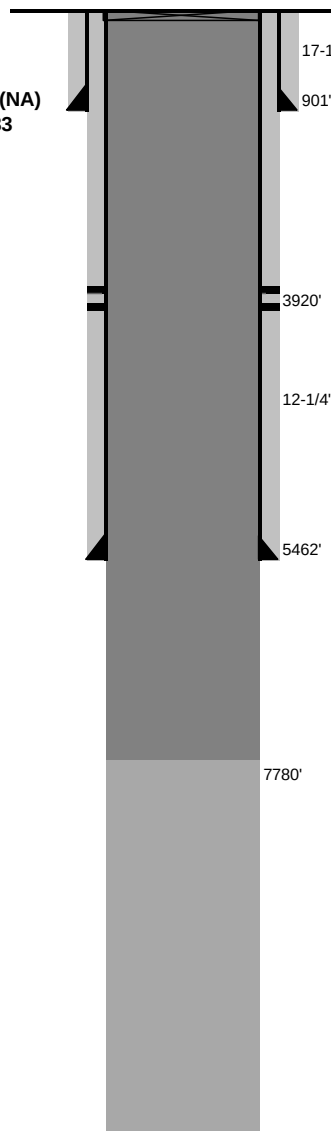
GEOLOGICAL SURVEY DIVISION
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY
PO BOX 30256
LANSING MI 48909-7756

AUG 28 2002

GEOLOGICAL SURVEY

PARK 1-12
NE NW NW Sec 12 T16N R9W
MECOSTA COUNTY, MI
CURRENT WELLBORE DIAGRAM

API No. 21-107-36283-0000
GL @ 1150.8'
KB @ 1167.1'
WELL COMPLETION DATE: DRY HOLE (NA)
PLUGGING COMPLETION DATE: 6/20/83



UPDATED APRIL 2014 BY JLT

24" CONDUCTOR DRIVEN TO 61'

17-1/2" Hole expected

SURFACE CASING

13 3/8", 48#/ft

SET @ 901' KB

CMT w/ 700 SX POZ + 200 SX CLASS A TO SURFACE

PER TEMP SURVEY

TOC @ 4040'

PLUG @ 5345'

12-1/4" Hole expected

INTERMEDIATE CASING

9 5/8", 40#/ft

SET @ 5462' KB

CMT w/ 1300 SX TO SURFACE

BP @ 5400'

PROD. CASING

NA

RAN DRILL PIPE TO 8200', SPOTTED 150 SX CL A.

TOC 7780'

PULLED DRILL PIPE AND RERAN WITH BP TO 5400'

SET BP.

TEMPORARILY ABANDONED

PERFORATED 9-5/8" @ 3920' AND CIRCULATED 9-5/8" AND

SQUEEZED w/100 SX 50-50 POZ + 200 SX CL A

SHUT IN FOR CMT TO SET. TIH AND MILLED OUT

MECHANICAL BP SET @ 5400'.

SET CMT PLUGS FROM 7700' TO SURFACE w/ 1200 SX 50-50 POZ +
25 SX CL A AT SURFACE, CUT AND CAPPED.

TD @ 8215' KB

PARK 1-12 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
12/10/1982	SPUD.
1/9/1983	DRILLING COMPLETED. FORMATION AT TD CINCINNATIAN. 24" CONDUCTOR SET AT 61' 13 3/8" SET AT 901'; 700 SX POZ + 200 SX CL A 9 5/8" SET AT 5462'; 1300 SX
1/10/1983	PLUGGING START DATE RAN DRILL PIPE TO 8200' AND SPOTTED 150 SX CL A. TOP OF CEMENT 7780'. PULLED DRILL PIPE AND RERAN WITH PERFORATED 9-5/8" AT 3920' AND CIRCULATED 9-5/8" AND SQUEEZED WITH 100 SX 50-50 POZ AND 200 SX CL A. SHUT IN FOR CEMENT TO SET. TRIPPED IN HOLE AND MILLED OUT MECHANICAL BP SET AT 5400'. SET CEMENT PLUGS FROM 7700' TO SURFACE - 1200 SX 50-50 POZ AND 25 SX CL A AT SURFACE, CUT AND CAPPED.
6/20/1983	PLUGGING COMPLETED. PER TEMPERATURE SURVEY: TOP OF CEMENT AT 4040' AND PLUG AT 5345'

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

FEB 10 1983

PERMIT NUMBER

36283

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Willmet, Inc. 2250 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Park #1-12						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE NW NW		SECTION 12		TOWNSHIP 16N		RANGE 9W	
FOOTAGES (North/South) 460 Ft. from North		SECTION Line and 880		FOOTAGES (East/West) Ft. from West		TOWNSHIP NAME Grant	
SUBSURFACE LOCATION		SECTION		TOWNSHIP		RANGE	
FOOTAGES (North/South)		SECTION		FOOTAGES (East/West)		TOWNSHIP NAME	
Ft. from		Line and		Ft. from		Line of quarter section	
DRILLING BEGUN 12-10-82		TOTAL DEPTH OF WELL Driller 8215 Log 8213		TYPE WELL Dry Hole		ELEVATIONS	
DRILLING COMPLETED 1-9-83		FORMATION AT T.D. Cincinnatian		FT. DRILD. - ROTARY TOOLS From 0 To 8215		K.B. 1167.1	R.F. 1165.9
WELL COMPLETED		PRODUCING FORMATION(S) NONE		FT. DRILD. - CABLE TOOLS From To		R.T.	Grd. 1150.8

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
24"	61'						YES	NO
13 3/8"	901'	700 POZ/200 C1 A						
9 5/8"	5462'	1300 Sx				NONE		

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
NONE							Sam- ples	Odor	Pits	Mud Line	Gas Log.	Fill Up
				Antrim	Gas	3100				XX		
				RC Dol	Gas	4100				XX		
				Blk Lm	Gas	5150				XX		

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	NONE		NONE				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	XX	LDT-CNL-GR	100-8209			3185	1/2°			
Birdwell		Sonic	700-8200			4995	2°			
		DLL-MLL	3300-8200			5826	3/4°			
						7954	2 1/2°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 1-20-83	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William E. Booker</i>
-----------------	--	---------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

FEB 16 1983

NOV 28 1983 FANSING HAS COPY

FEB 11 1983

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

FINAL APPROVAL

PERMIT NUMBER
36283

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER WILLMET, INC.			
COMPLETE LEASE OR FARM NAME(S) Park			WELL NUMBER #1-12
WELL LOCATION NW ¼ NW ¼ NW ¼ SEC. 12 T. 16N R. 9W		TOWNSHIP Grant	COUNTY Mecosta
TYPE OF WELL (Oil, Gas, Dry Hole, etc.) Dry Hole		TOTAL DEPTH 8215	FORMATION Cincinnatian
DATE PLUGGING STARTED 1-10-83	DATE PLUGGING COMPLETED 1-10-83	DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING Skipper	

CASING RECORD			
SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
24"	61'		
13 3/8"	901'		
9 5/8"	5462'		

BRIDGES OR PLUGS		
TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8200-7780	150 Sx C1 A
Mechanical		
Bridge Plug	5400	

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?	☐ YES ☒ NO	If yes, give details: _____
Did a Service Company pump mud, spot cement, or set bridge plugs?	☒ YES ☐ NO	If yes, give name and address: <u>Dowell</u>
Was the well plugged by a Company or Contractor other than Owner or Operator?	☐ YES ☒ NO	If yes, give name and address: _____
Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:	<u>Marvin Woods</u>	

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED Ran drill pipe to 8200 and spotted 150 sx Cl A. Top
of cement 7780. Pulled drill pipe and reran with bridge plug to 5400, set bridge plug.
TEMPORARILY ABANDONED.

(USE REVERSE SIDE IF NEEDED)

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed) William E. Booker, Geologist		COMPANY NAME AND ADDRESS Strickler Geological Services, Inc. 1425 S. Mission Mt. Pleasant, MI 48858
SIGNATURE 	DATE (Month, Day, Year) 1-20-83	

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

Site clean & recontoured

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE

DIVISION

DATE _____

James G. Skipper

Geological Survey

11-21-83

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MAY 22 1984 MAY 24 1984 LANSING HAS COPY

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER
36283

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

Park

WELL NUMBER

#1-12

WELL LOCATION

NE 1/4 NW 1/4 NW 1/4 SEC. 12 T. 16N R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

TOTAL DEPTH

8215

FORMATION

Cincinnatian

DATE PLUGGING STARTED

1-10-83

DATE PLUGGING COMPLETED

6-20-83

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Skipper

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
24"	61	-----	
13 3/8"	901	-----	
9 5/8"	5462	-----	

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8200-7780	150 Sx Cl A
Cement	7700-0	1225 Sx

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Marvin Woods

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Perforated 9 5/8" at 3920' and circulated 9 5/8" and squeezed with 100 sx 50-50 poz and 200 sx Cl A. Shut in for cement to set. Tripped in hole and milled out mechanical B.P. set at 5400'. Set cement plugs from 7700' to surface - 1200 sx 50-50 poz and 25 sx Cl A at surface, cut and capped.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

COMPANY NAME AND ADDRESS

STRICKLER GEOLOGICAL SERVICES, INC.
1425 S. Mission
Mt. Pleasant, MI 48858

SIGNATURE

William E. Booker

DATE (Month, Day, Year)

5/17/84

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

~~Location approved by Skipper 2/23/84 Clean & recontoured~~

Location approved by Skipper 2/23/84 Clean & recontoured

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE

DIVISION

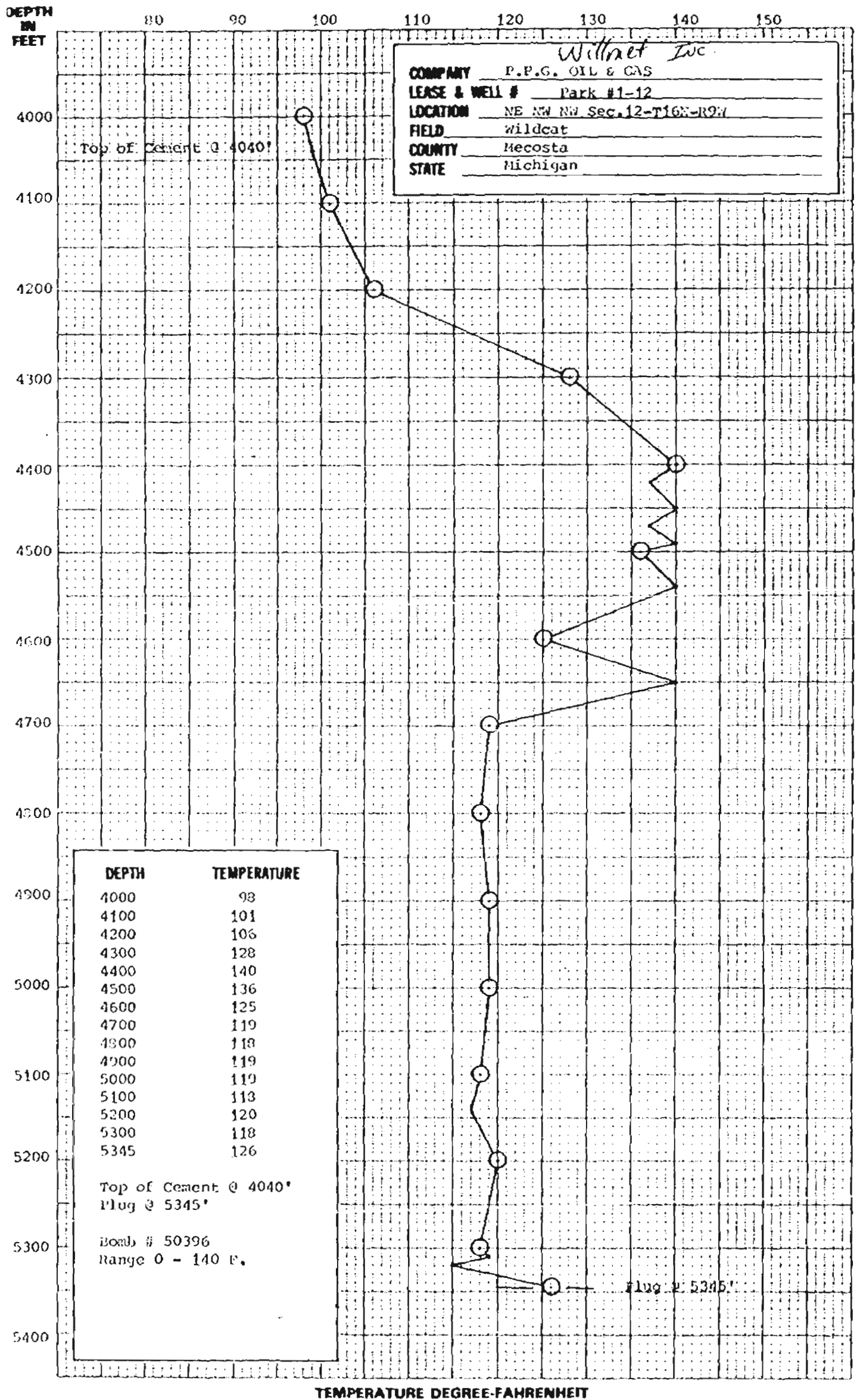
DATE

James G. Skipper

Geol. Survey

9/26/84

TEMPERATURE SURVEY



PARK 1-31
NE NW SW Sec 31 T17N R8W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

UPDATED APRIL 2014 BY JLT

20" CONDUCTOR DRIVE TO 72'

14-3/4" Hole expected

SURFACE CASING

11-3/4"; 48#/ft.

SET @ 912' KB

CMT w/500 SX TO SURFACE

10-5/8" Hole expected

INTERMEDIATE CASING

8-5/8"; 60#/ft.

SET @ 5494' KB

CMT w/ 1250 SX TO SURFACE

5494'

PROD. CASING

NA

PLUGGING

RAN DRILL PIPE TO 8216', SPOTTED 90 SX CMT

PULLED DP TO 7900', SPOTTED 51 SX

PULLED DP TO 7600', SPOTTED 85 SX

PULLED DP TO 7300', SPOTTED 309 SX

PULLED DP TO 5500', SPOTTED 87 SX

PULLED DP TO 5200', SPOTTED 226 SX

PULLED DP TO 3900', SPOTTED 226 SX

CUT AND CAPPED.

TD @ 8216' KB

API No. 21-133-36336-0000

GL @ 1168.9'

KB @ 1184.8'

WELL COMPLETION DATE: DRY HOLE (NA)

PLUGGING COMPLETION DATE: 2/12/84

PARK 1-31 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
1/10/1984	SPUD.
2/10/1984	DRILLING COMPLETED. FORMATION AT TD BURNT BLUFF. 20" CONDUCTOR DRIVEN TO 72' 11-3/4" SET AT 912'; 580 SX 8-5/8" SET AT 5494'; 1250 SX
2/11/1984	PLUGGING STARTED RAN DRILL PIPE TO 8216' AND SPOTTED 90 SX, PULLED DRILL PIPE TO 7900' AND SPOTTED 51 SX PULLED DRILL PIPE TO 7600' AND SPOTTED 85 SX PULLED DRILL PIPE TO 7300' AND SPOTTED 309 SX PULLED DRILL PIPE TO 5500' AND SPOTTED 87 SX PULLED DRILL PIPE TO 5200' AND SPOTTED 226 SX PULLED DRILL PIPE TO 3900' AND SPOTTED 226 SX CUT AND CAPPED.
2/12/1984	PLUGGING COMPLETION DATE

DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in DUPLICATE Within 30 Days after Well Completion

SEP 06 1984

PERMIT NUMBER 36336
DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT PPG Oil & Gas Co., Inc. 2258 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling Co. 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Park 1-31						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE NW SW		SECTION 31	TOWNSHIP 17N	RANGE 8W	TOWNSHIP NAME Evart		
FOOTAGES (North/South) 460 Ft. from North		Line and 460		(East/West) Ft. from West		Line of quarter section	
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	COUNTY NAME Osceola		
FOOTAGES (North/South)		Line and		(East/West) Ft. from		Line of quarter section	
DRILLING BEGUN 1-10-84		TOTAL DEPTH OF WELL Driller 8216 Log 8216		TYPE WELL Dry Hole		ELEVATIONS	
DRILLING COMPLETED 2-10-84		FORMATION AT T.D. Burnt Bluff		FT. DRLD. - ROTARY TOOLS From 0 To 8216		K.B. 1184.8	R.F. 1183.3
WELL COMPLETED		PRODUCING FORMATION(S)		FT. DRLD. - CABLE TOOLS From To		R.T.	Grd. 1168.9

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
20"	72'	Drill Pipe	---				YES	NO
11 3/4"	912'	580 Sx	---					
9 5/8"	5494'	1250 Sx	---					

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
							Sam- ples	Odor	Pas	Mud Line	Gas Log	Fat Up
				Sunbury	Gas	2650					XX	
				Antrim	Gas	3150					XX	
				Burnt Bluff	Gas	8159					XX	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECTN	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	XX	BHC Sonic	6610-8216			2545	1°			
Birdwell		DLL MLL	3300-5503			3500	1/2°			
			6610-8216			6666	3/4°			
		LDT CNL GR	200-8216			7537	1/2°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 3/19/84	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William E. Booker</i>
-----------------	--	---------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

STATE OF MICHIGAN
REQUEST FOR TRANSFER OF A PERMIT

TYPE OR PRINT

SUBMIT 4 COPIES TO:

Department of Natural Resources
Geological Survey Division
Box 30028
Lansing, Michigan 48909

Filing for change of ownership of well is required in accordance with ☒ Act 61, P.A. 1939 and ☐ Act 315 P.A. 1969, as amended, and Administrative Rules promulgated thereunder.

PERMIT NO 36336	WELL TYPE Dry Hole
FIELD NAME Hersey-Clinton	
WELL NAME AND NUMBER Park 1-31	
WELL LOCATION NE 1/4 NW 1/4 SW 1/4 SECTION 31 T 17N R 8W	
TOWNSHIP Evart	COUNTY Osceola

TRANSFER OF A PERMIT FROM:

NAME(S) OF SELLING OWNER(S)

PPG Oil & Gas Co., Inc.

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

All operating rights are discharged by:

Owner(s)

Representative(s)

Signature(s)

Date(s)

PPG Oil & Gas Co., Inc., Richard M. Rompala

Richard M. Rompala 3/3/88

ELIGIBILITY FOR PERMITS IS CONDITIONED UPON COMPLIANCE WITH THE STATUTES, RULES AND ORDERS OF THE DEPARTMENT OF NATURAL RESOURCES. PERMITS WILL NOT BE GRANTED TO PERSONS NOT IN COMPLIANCE.

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

TRANSFER OF A PERMIT TO:

NAME(S) OF ACQUIRING OWNER(S)

Marathon Oil Company

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

(We) (I) have acquired the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.

SURETY BOND:

☐ SINGLE WELL

☐ ATTACHED

BONDING CO.

SAFECO Insurance Company of America

☒ BLANKET

☒ ON FILE

BOND NUMBER 5194219

All operating rights and responsibilities are assumed by

Owner(s)

Representative(s)

Signature(s)

Date(s)

Marathon Oil Company, Donald R. Hall

Donald R. Hall 3/28/88

FOR DEPARTMENT OF NATURAL RESOURCES USE ONLY

APPROVED

[Signature]

Signature

6/28/88

Date

DISTRIBUTION BY DNR

☒ Lansing

☐ Acquiring Owner

☐ Selling Owner

☐ Field

PERMIT DISTRIBUTION
Permittee -- Orig & 1 copy
Division Office -- 2 copies
Field Office -- File copy
Others -- On request

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

PERMIT TO PLUG AND ABANDON

PERMIT NUMBER
36336

FIELD NAME
Hersey

NAME AND ADDRESS OF PERMITTEE

PPG

WELL NAME AND WELL NO.

Park #1-31

SECTION (1/4, 1/2, 3/4 or other)

NE NW SW,

SECTION

31

T 17N R 8W

TOWNSHIP

Evart

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry hole

DATE COMPLETED

2/9/84

DATE PLUGGING WILL START

2/10/84

PLUGGING PERMIT REQUESTED BY & DATE

W. Booker 2/10/84

TEST PRODUCTION

BOVD

BWPD

MCFGPD

DATE

PLUGGING TO BE DONE BY

Provins #12

PERMIT MAILED TO

COPIES MAILED TO

CASING AND CEMENTING RECORD

WELL DIA.	CASING DIA. & WT./FT.	DEPTH SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP.	PERFORATIONS
	20"	72'			
	113/4"	912'	580 sx	surf	
	85/8"	5494'	1250 sx	"	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

CONFIDENTIAL.

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder.

Spot Cl A cmt 8216-7900';
spot lite cmt. 7900-7600';
spot Cl A cmt 7600-7300';
spot lite cmt 7300-5500';
spot Cl A cmt 5500-5200';
spot lite cmt. 5200-surface.

NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 186 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

Michael J. Moss

OFFICE

Cadillac n#6

DATE

2/13/84

NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPPLICATE within 30 days after completion.

R-7229
Rev. 11/77

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

SEP 06 1984

CADILLAC HAS COPY

PERMIT NUMBER

36336

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

Park

WELL NUMBER

1-31

WELL LOCATION

NE ¼

NW ¼

SW ¼ SEC. 31

T. 17N

R. 8W

TOWNSHIP

Evart

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

TOTAL DEPTH

8216

FORMATION

Burnt Bluff

DATE PLUGGING STARTED

2-11-84

DATE PLUGGING COMPLETED

2-12-84

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Mike Moss

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
20"	72'	-----	-----
11 3/4"	912'	-----	-----
8 5/8"	5494	-----	-----

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8216	90 Sx
Cement	7900	51 Sx
Cement	7600	85 Sx
Cement	7300	309 Sx
Cement	5500	87 Sx
Cement	5200	226 Sx
Cement	3900	226 Sx

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Carl Cookingham

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran drill pipe to 8216 and spotted 90 sx, pulled drill pipe to 7900 and spotted 51 sx, pulled drill pipe to 7600 and spotted 85 sx, pulled drill pipe to 7300 and spotted 309 sx, pulled drill pipe to 5500 and spotted 87 sx, pulled drill pipe to 5200 and spotted 226 sx, pulled drill pipe to 3900 and spotted 226 sx. Cut and capped.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

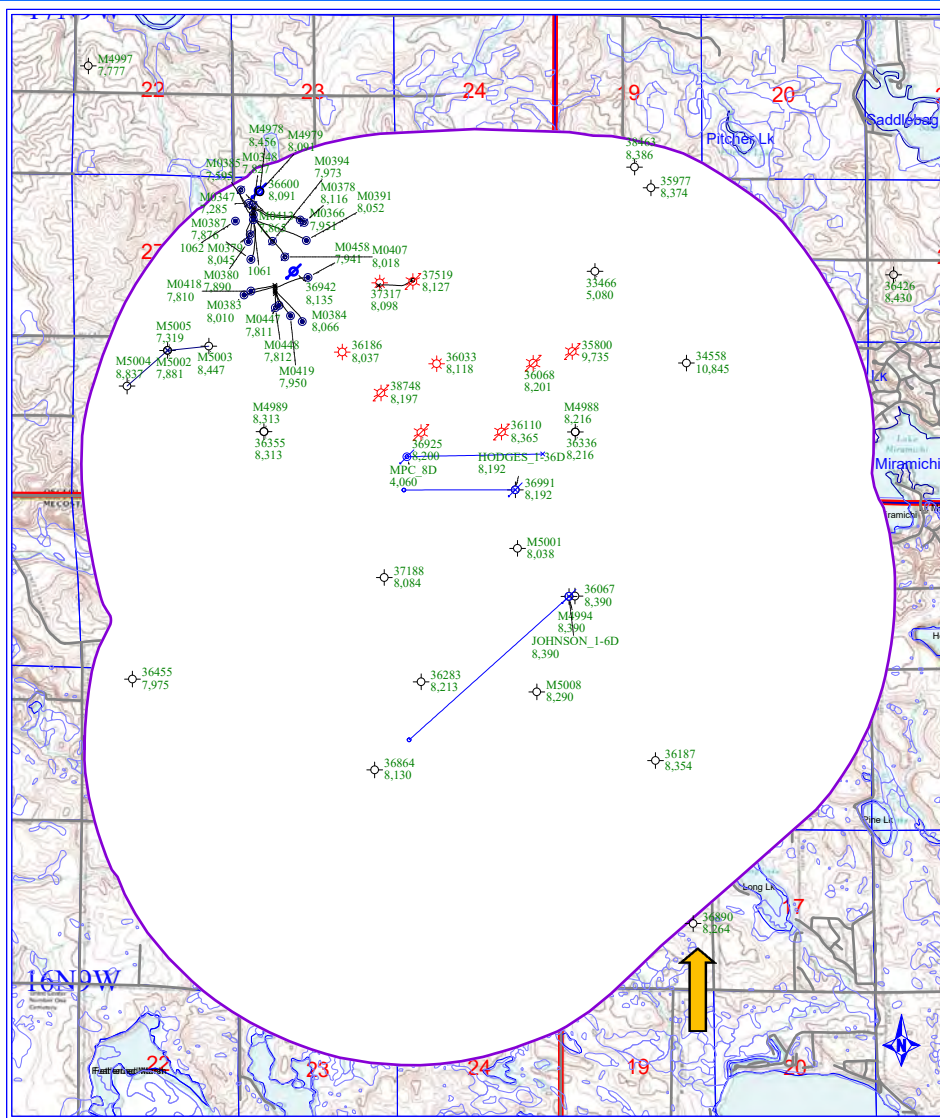
SIGNATURE

DATE (Month, Day, Year)

3-19-84

COMPANY NAME AND ADDRESS

STRICKLER GEOLOGICAL SERVICES, INC.
1425 S. Mission
Mt. Pleasant, MI 48858



The Stein 1-18 is not in the AOR

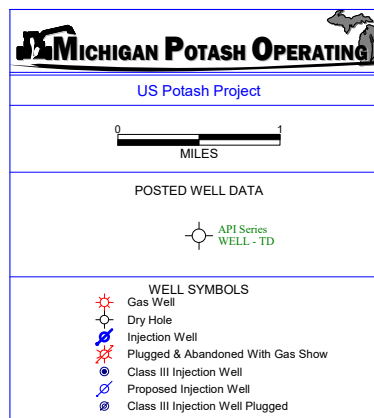


Figure A8. Map showing the wells that penetrate the confining zone in the AOR.

STEIN 1-18
NE NE SE Sec 18 T16N R8W
MECOSTA COUNTY, MI
CURRENT WELLBORE DIAGRAM

UPDATED APRIL 2014 BY JLT

20" CONDUCTOR DRIVEN TO 62'

API No. 21-107-36890-0000

GL @ 1148.6'

KB @ 1158.2'

WELL COMPLETION DATE: DRY HOLE (NA)

PLUGGING COMPLETION DATE: 8/27/83

17-1/2" Hole expected

SURFACE CASING

13 3/8", 48#/ft

SET @ 810' KB

CMT w/700 SX TO SURFACE

810'

12-1/4" Hole expected

INTERMEDIATE CASING

9 5/8", 40#/ft

SET @ 5440' KB

CMT w/1165 SX TO SURFACE

5440'

PROD. CASING

NA

PLUGGING

RAN IN OPEN ENDED DRILL PIPE AND

SPOTTED 140 SX CLASS A FROM 8264'-7850'.

PULLED UP TO 7850' AND SPOTTED 440 SX H/c TO 5650'

PULLED UP TO 5650' AND SPOTTED 140 SX CLASS A TO 5250'

PULLED UP TO 5250' AND SPOTTED 1040 SX H/c TO 500'

PULLED UP TO 500' AND SPOTTED 180 SX CLASS A TO SURFACE

CUT AND CAPPED 3' BELOW GROUND

TD @ 8264' KB

STEIN 1-18 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
8/3/1983	SPUD.
8/25/1983	DRILLING COMPLETED. FORMATION AT TD CINCINNATIAN. 20" CONDUCTOR SET AT 62' 13 3/8" SET AT 810'; 700 SX 9 5/8" SET AT 5440'; 1165 SX
8/26/1983	PLUGGING START DATE RAN IN OPEN ENDED DRILL PIPE AND SPOTTED 140 SX CL A FROM 8264'-7850'; PULLED UP TO 7850' AND SPOTTED 440 SX H1c TO 5650'; PULLED UP TO 5650' AND SPOTTED 140 SX CL A TO 5250'; PULLED UP TO 5250' AND SPOTTEED 1040 SX H1c TO 500'; PULLED UP TO 500' AND SPOTTED 180 SX CL A TO SURFACE; CUT AND CAPPED 3' BELOW GROUND.
8/27/1983	PLUGGING COMPLETED.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

NOV 23 1983

PERMIT NUMBER

36,890

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT PPG Oil & Gas, Inc. 2250 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) James Bigard Drilling Company 1315 South Mission Road Mt. Pleasant, MT 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT STEIN #1-18						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE 1/4 NE 1/4 SE 1/4		SECTION 18	TOWNSHIP 16N	RANGE 8W	TOWNSHIP NAME Chippewa		
FOOTAGES (North/South) 465 Ft. from north		Line and 635		FOOTAGES (East/West) Ft. from east		Line of quarter section COUNTY NAME Mecosta	
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME		
FOOTAGES (North/South)		Line and		FOOTAGES (East/West)		Line of quarter section COUNTY NAME	
DATE	DRILLING BEGUN 8/3/83		TOTAL DEPTH OF WELL Driller 8264 Log 8223		TYPE WELL Dry Hole		ELEVATIONS
	DRILLING COMPLETED 8/25/83		FORMATION AT T.D. Cincinnatian		FT. DRLD. - ROTARY TOOLS From 0 To 8264		K.B. 1158.2 R.F. 1156.9
	WELL COMPLETED		PRODUCING FORMATION(S) None		FT. DRLD. - CABLE TOOLS From To		R.T. Grd. 1148.6

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
20"	62'	D.P.					YES	NO
13-3/8"	810'	700 sx	-0-			None		
9-5/8"	5440'	1165 sx	-0-					

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
None							Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
				Sunbury	Gas						X	
				Antrim	Gas						X	
				Burnt Bluff	Gas	8160					X	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	None		None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	LDT-CNL-GR	5440-8264			1515	3/4			
Birdwell		DLL-MLL	5440-8264			3500	1/2			
		Sonic	5440-8264			4600	3/4			
Gearhardt	X	CNL-Density	800-5440			8240	1 1/2			
		Sonic	800-5440							

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 8/29/83	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William E. Booker</i>
-----------------	--	---------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

FORMATION RECORD

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

ELEVATION USED:		GEOLOGIST NAME:		TOPS TAKEN FROM:	
				☐ DRILLERS LOG ☐ SAMPLE LOG ☐ 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.			6302		E Unit
1410		Triple Gyp	6429		D Salt
1484		Brown Limestone	6468		C Shale
1592		Stray	6562		B Salt
1706		Marshall	6940		A-2 Carbonate
1860		Coldwater Shale	7079		A-2 Evaporite
2630		Sunbury	7443		A-1 Carbonate
2744		Ellsworth	7496		A-1 Evaporite
3117		Antrim	7856		Niagaran
3280		Traverse Formation	7974		Manistique (Clinton)
3332		Traverse Limestone	8036		Burnt Bluff
3842		Bell Shale	8094		Cabot Head
3900		Dundee	8174		Manitoulin
3964		Reed City Anhydrite	8212		Cincinnatian
3990		Reed City Dolomite			
4124		Detroit River Anhydrite			
4190		Detroit River Salt			
4558		Base Detroit River Salt			
4588		Sour Zone			
4758		Massive Anhydrite			
4951		Base of Anhydrite			
5052		Black Lime			
5128		Sylvania			
5250		Bois Blanc			
5370		Bass Island			
5691		Salina G Unit			
5702		F Unit			
5747		F Salt			

IF WELL WAS CORED, ATTACH CORE DESCRIPTION	
DRILL STEM TEST DATA	
No DST or cores	

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

NOV 23 1983

LANSING HAS COPY

WELL PLUGGING RECORD

NOV 29 1983

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER

36,890

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas, Inc., 2250 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

STEIN

WELL NUMBER

1-18

WELL LOCATION

NE 1/4 NE 1/4 SE 1/4 SEC. 18 T. 16N R. 8W

TOWNSHIP

Chippewa

COUNTY

Mecosta

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry hole

TOTAL DEPTH

8264

FORMATION

Cincinnatian

DATE PLUGGING STARTED

8/26/83

DATE PLUGGING COMPLETED

8/27/83

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Wayne Todd

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
20"	62'	-0-	
13-3/8"	810'	-0-	
9-5/8"	5440'		

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8264	140 sx Cl A
"	7850	440 sx Hlc
"	5650	140 sx Cl A
"	5250	1040 sx Hlc
"	500	180 sx Cl A

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging: Willy Masterson

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED Ran in open ended drill pipe and spotted 140 sx from 8264-7850'; pulled up to 7850' and spotted 440 sx to 5650'; pulled up to 5650' and spotted 140 sx to 5250'; pulled up to 5250' and spotted 1040 sx to 500'; pulled up to 500' and spotted 180 sx to surface; cut and capped 3' below ground.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

SIGNATURE

William E. Booker

DATE (Month, Day, Year)

8/29/83

COMPANY NAME AND ADDRESS

STRICKLER GEOLOGICAL SERVICES, INC.
1425 South Mission Road
Mt. Pleasant, MI 48858

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

Location approved by skipper 7/23/84 Clean & recontoured.

GEOLOGICAL SURVEY

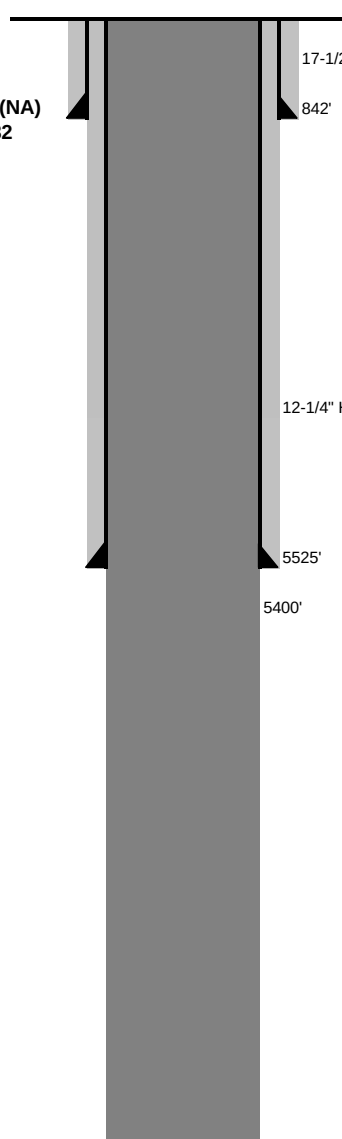
NOV 23 1983

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE	DIVISION	DATE
James L. Skipper Regulatory Control Unit	Geol. Survey	9/26/84

STEIN 1-7
NE NW SE Sec 7 T16N R8W
MECOSTA COUNTY, MI
CURRENT WELLBORE DIAGRAM

API No. 21-107-36187-0000
GL @ 1197.5'
KB @ 1214'
WELL COMPLETION DATE: DRY HOLE (NA)
PLUGGING COMPLETION DATE: 12/2/82



UPDATED APRIL 2014 BY JLT
24" CONDUCTOR DRIVEN TO 59'
17-1/2" Hole expected
SURFACE CASING
13 3/8", 48#/ft
SET @ 842' KB
CMT w/900 SX TO SURFACE

12-1/4" Hole expected
INTERMEDIATE CASING
9 5/8", 40#/ft
SET @ 5525' KB
CMT w/250 SX TO SURFACE

5400'
PROD. CASING
NA

RAN DRILL PIPE TO 8350', SPOTTED 460 SX POZ TO 5400',
CAME OUT, CUT AND PULLED 1500' OF 9-5/8".
RAN DRILL PIPE TO 5400' AND CEMENTED TO SURFACE
WITH 1635 SX CLASS A.

TD @ 8380' KB

STEIN 1-7 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
11/3/1982	SPUD.
11/30/1982	DRILLING COMPLETED. FORMATION AT TD CINCINNATIAN. 24" CONDUCTOR SET AT 59' 13 3/8" SET AT 842'; 900 SX 9 5/8" SET AT 5525'; 250 SX
12/1/1982	PLUGGING START DATE RAN DRILL PIPE TO 8350' AND SPOTTED 460 SX POZ TO 5400', CAME OUT AND PULLED 1500' OF 9-5/8". RAN DRILL PIPE TO 5400' AND CEMENTED TO SURFACE WITH 1635 SACKS CLASS A.
12/2/1982	PLUGGING COMPLETED.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit to DNR within 30 days after Well Completion

JAN 4 1983

PERMIT NUMBER

36187

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Willmet, Inc. 2250 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Stein #1-7						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE NW SE		SECTION 7	TOWNSHIP 16N	RANGE 8W	TOWNSHIP NAME Chippewa		
FOOTAGES (North/South) 460 Ft. from North		Line and 854		(East/West) Ft. from West		COUNTY NAME Mecosta	
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME		
FOOTAGES (North/South)		Line and		(East/West) Ft. from		COUNTY NAME	
DATE	DRILLING BEGUN 11-3-82	TOTAL DEPTH OF WELL Driller 8380 Log 8354		TYPE WELL Dry Hole		ELEVATIONS	
	DRILLING COMPLETED 11-30-82	FORMATION AT T.D. Cincinnatian		FT. DRLD. - ROTARY TOOLS From 0 To 8380		K.B. 1214	R.F. 1212.6
	WELL COMPLETED	PRODUCING FORMATION(S)		FT. DRLD. - CABLE TOOLS From To		R.T.	Grd. 1197.5

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
24"	59'						YES	NO
13 3/8"	842'	900 Sx						
9 5/8"	5525'	250 Sx	1500			None		

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
None							Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
				Black Line	Gas	5120					X	
				E Unit	Gas	6668					X	
				Strickler Zone	Gas	8170					X	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	None		None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	LDT-CNL-GR	100-8354	1926		1926	3/4°			
Birdwell		Sonic	100-8354							
Q-Tool		MLL-DLL	3400-8354							

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 12-29-82	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William E Booker</i>
------------------	--	--------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

DEC 27 1982

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

PERMIT TO PLUG AND ABANDON

DNR DISTRIBUTION

Permittee — Orig. & 1 copy
Division Office — 2 copies
Field Office — File copy
Others — On request

PERMIT NUMBER

56187

FIELD NAME

NAME AND ADDRESS OF PERMITTEE

Wilmet, Inc., 1230 Enterprise Drive, Mt. Pleasant, MI 48858

LEASE NAME AND WELL NO.

Section 1-7

LOCATION (1/4 1/4 or other)

NE NW SE

SECTION

7

T10N R 8W

TOWNSHIP

Chippewa

COUNTY

Huron

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

DATE COMPLETED

11-30-82

DATE PLUGGING WILL START

12-1-82

PLUGGING PERMIT REQUESTED BY & DATE

Steve Wood

11-30-82

LAST PRODUCTION

BOPD

BWPD

MCFGPD

DATE

PLUGGING TO BE DONE BY

Provins/Dowell

PERMIT MAILED TO

Don Smith
Wilmet, Inc.

COPIES MAILED TO

Lansing
Region II

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP.	PERFORATIONS
	24"	39'	Drill		
17 1/2"	13-3/8" 420	842'	700 cu 20/30 mix + 200 cu Class A	Surf.	
12 1/2"	9-5/8" 43/400	3330'	250 cu Class A	4630'	
8 1/2"	Open Hole to T.D.				

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

~~CONFIDENTIAL~~

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder.

Fill open hole with cement bottom to top, recover from casing, per Mineral Wells requirements.

Final cleanup to be completed by June 15, 1983.

*NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 186 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

James H. Skipper

OFFICE

Mt. Pleasant

DATE

12-16-82

NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion.

R-7228
Rev. 11/77

JAN 4 1983

JAN 12 1983

LANSING HAS COPY

Mt. Pleasant HAS COPY

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER
36187

FIELD NAME

AUG 0 1984

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER Willmet, Inc.			
COMPLETE LEASE OR FARM NAME(S) Stein			WELL NUMBER 1-7
WELL LOCATION NE ¼ NW ¼ SE ¼ SEC. 7 T. 16N R. 8W		TOWNSHIP Chippewa	COUNTY Mecosta
TYPE OF WELL (Oil, Gas, Dry Hole, etc.) Dry Hole		TOTAL DEPTH 8380	FORMATION Cincinnatian
DATE PLUGGING STARTED 12-1-82	DATE PLUGGING COMPLETED 12-2-82	DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING Jim Skipper	

CASING RECORD			
SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
24"	59'		
13 3/8"	842'	900 Sx	
9 5/8"	5525'	250 Sx	1500

BRIDGES OR PLUGS		
TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	5400-8350	460 Sx POZ
Cement	0 -5400	1635 Sx C1 A

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?	☐ YES ☒ NO	If yes, give details:
Did a Service Company pump mud, spot cement, or set bridge plugs?	☒ YES ☐ NO	If yes, give name and address: Dowell
Was the well plugged by a Company or Contractor other than Owner or Operator?	☐ YES ☒ NO	If yes, give name and address:
Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:	Marvin Woods	

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran drill pipe to 8350, spotted 460 sacks to 5400, came out, cut and pulled 1500' of 9 5/8". Ran drill pipe to 5400' and cemented to surface with 1635 sacks.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION		
"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."		
NAME AND TITLE (Typed or Printed) William E. Booker, Geologist	COMPANY NAME AND ADDRESS Strickler Geological Services, Inc. 1425 S. Mission Mt. Pleasant, MI 48858	
SIGNATURE <i>William E Booker</i>	DATE (Month, Day, Year) 12-29-82	

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

9/22/83 Clean, recastored

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE

James G. Skipper

DIVISION

Geological Survey

DATE _____

8/1/84

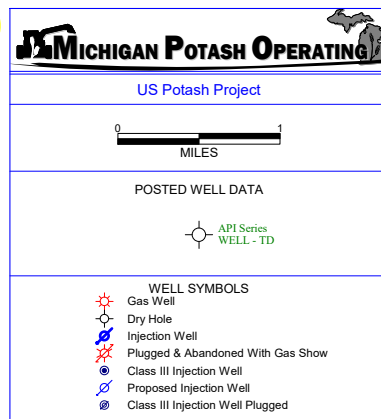
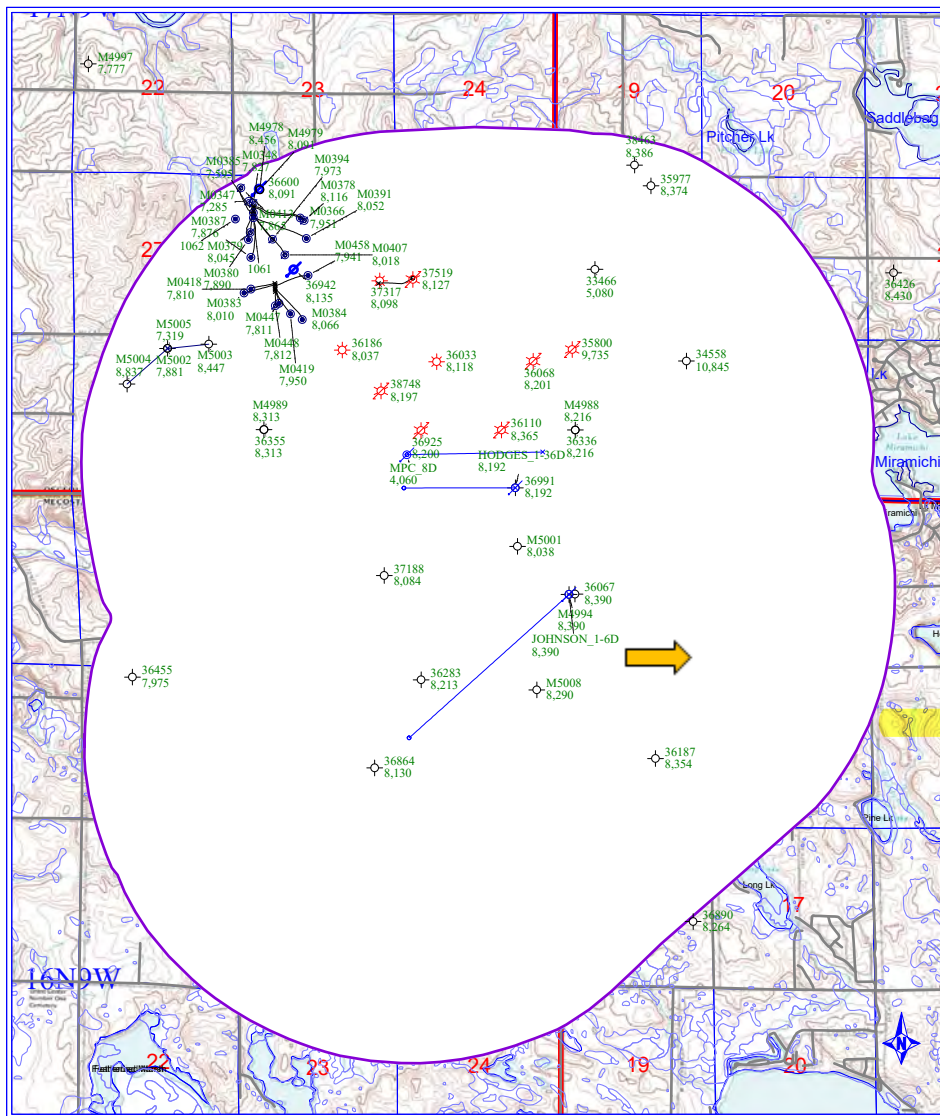
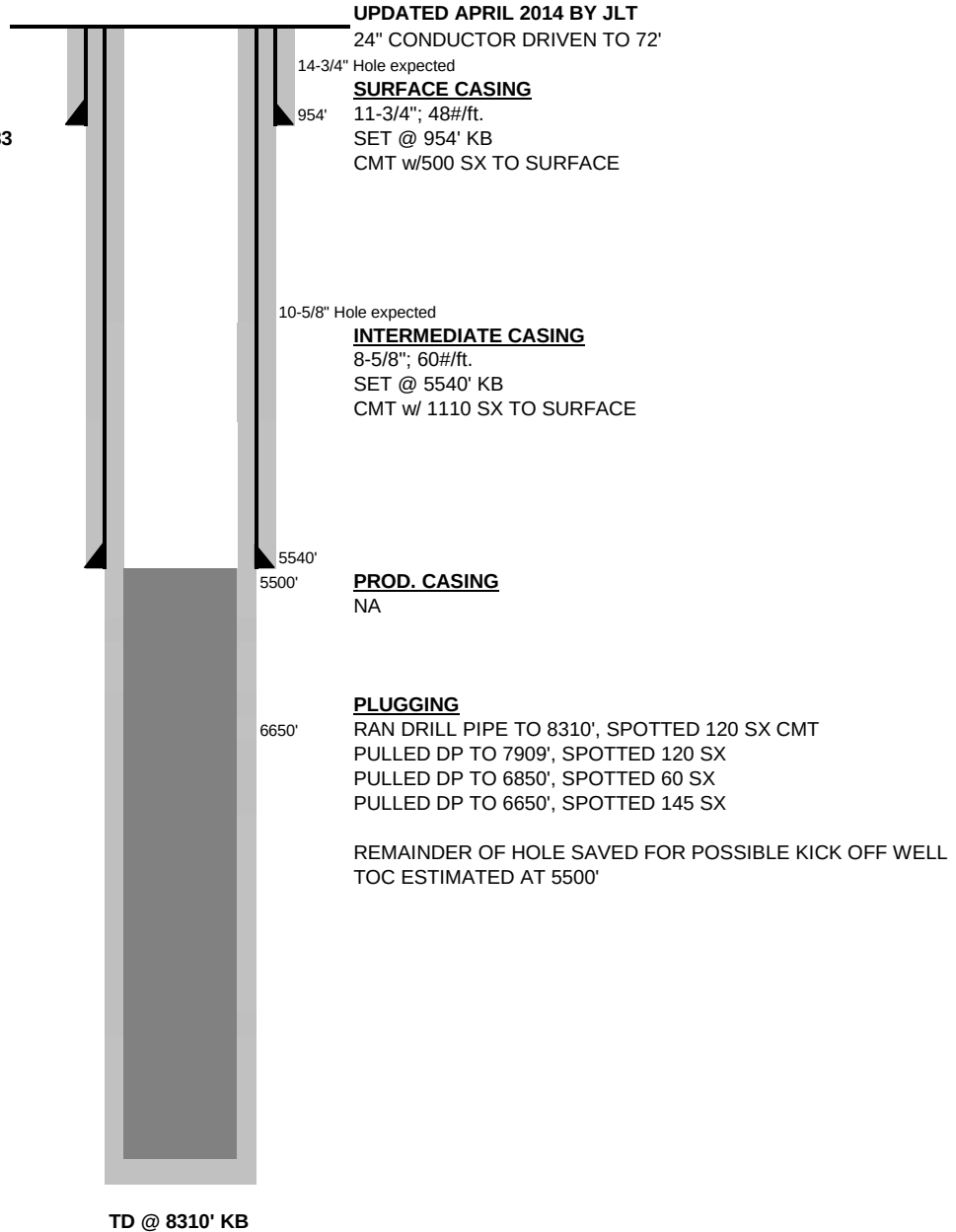


Figure A8. Map showing the wells that penetrate the confining zone in the AOR.

STATE-HERSEY 2-35
NE NW SW Sec 35 T17N R9W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

API No. 21-133-36355-0000
GL @ 1213'
KB @ 1236'
WELL COMPLETION DATE: (NA)
PLUGGING COMPLETION DATE: 1/30/83



STATE-HERSEY 2-35 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
1/2/1983	SPUD.
1/28/1983	DRILLING COMPLETED. FORMATION AT TD CINCINNATIAN. 24" CONDUCTOR DRIVEN TO 72' 11-3/4" SET AT 954'; 550 SX 8-5/8" SET AT 5540'; 1110 SX
1/29/1983	PLUGGING STARTED RAN DRILL PIPE TO 8310' AND SPOTTED 120 SX, PULLED DRILL PIPE TO 7909' AND SPOTTED 120 SX PULLED DRILL PIPE TO 6850' AND SPOTTED 60 SX PULLED DRILL PIPE TO 6650' AND SPOTTED 145 SX REMAINDER OF HOLE TO BE SAVED FOR POSSIBLE KICK OFF WELL
1/30/1983	PLUGGING COMPLETION DATE

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

FEB 25 1983

PERMIT NUMBER
36355

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Willmet, Inc., Rousek + Muskegon Dev. 2250 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling Company 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT State-Hersey #2-35						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE NW SW		SECTION 35		TOWNSHIP 17N		RANGE 9W	
FOOTAGES (North/South) 460 Ft. from North		LINE AND 854		FOOTAGES (East/West) Ft. from West		COUNTY NAME Osceola	
SUBSURFACE LOCATION		SECTION		TOWNSHIP		RANGE	
FOOTAGES (North/South)		LINE AND		FOOTAGES (East/West)		COUNTY NAME	
DRILLING BEGUN 1-2-83		TOTAL DEPTH OF WELL Driller 8310 Log 8313		TYPE WELL Temp. Aband.		ELEVATIONS	
DRILLING COMPLETED 1-28-83		FORMATION AT T.D. Cincinnatian		FT. DRLD. - ROTARY TOOLS From 0 To 8310		K.B. 1236	R.F. 1235
WELL COMPLETED		PRODUCING FORMATION(S) None		FT. DRLD. - CABLE TOOLS From To		R.T.	Grd. 1213

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
							YES	NO
24"	72'	D.P.						
11 3/4"	954	550 Sx		NONE				
8 5/8"	5540	1110 Sx						

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
							Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
NONE				Trav. Lime	Gas	1700					X	
				Reed City Do	Gas	4100					X	
				Sour Zone	Gas	4700					X	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
NONE			NONE				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	XX	LDT-CNL-GR	200 - 8313			2500	0°			
Birdwell		Sonic	200 - 8313			5100	1°			
		DLL-MLL	3300 - 8313			6500°	0°			
						6900	3/4°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 2-21-83	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William Booker</i>
-----------------	--	------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

STATE OF MICHIGAN

TYPE OR PRINT

REQUEST FOR TRANSFER OF A PERMIT

SUBMIT 4 COPIES TO:

Department of Natural Resources
Geological Survey Division
Box 30028
Lansing, Michigan 48909

Filing for change of ownership of well is required in accordance with Act 61, P.A. 1939 and ☐ Act 315 P.A. 1969, as amended, and Administrative Rules promulgated thereunder.

PERMIT NO 36355	WELL TYPE Dry Hole
FIELD NAME Hersey-Clinton	
WELL NAME AND NUMBER St. Hersey 2-35	
WELL LOCATION NE 1/4 NW 1/4 SW 1/4 SECTION 35 T 17N R 9W	
TOWNSHIP Hersey	COUNTY Osceola

TRANSFER OF A PERMIT FROM:

NAME(S) OF SELLING OWNER(S)

Adolph Rovsek, Muskegon Development Corp. & Willmet, Inc.

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

All operating rights are discharged by:

Owner(s)

Representative(s)

Signature(s)

Date(s)

Willmet, Inc., Richard M. Rompala

Muskegon Development Corp.

Adolph Rovsek

Richard M. Rompala 3/31/88

Adolph Rovsek
Adolph Rovsek

ELIGIBILITY FOR PERMITS IS CONDITIONED UPON COMPLIANCE WITH THE STATUTES, RULES AND ORDERS OF THE DEPARTMENT OF NATURAL RESOURCES. PERMITS WILL NOT BE GRANTED TO PERSONS NOT IN COMPLIANCE.

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

TRANSFER OF A PERMIT TO:

NAME(S) OF ACQUIRING OWNER(S)

Marathon Oil Company

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

(We) (I) have acquired the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.

SURETY BOND:

☐ SINGLE WELL☐ ATTACHED

BONDING CO. SAFECO Insurance Company of America

☒ BLANKET☒ ON FILE

BOND NUMBER 5194219

All operating rights and responsibilities are assumed by

Owner(s)

Representative(s)

Signature(s)

Date(s)

Marathon Oil Company, Donald R. Hall 223

Donald R. Hall

March 28, 1988

FOR DEPARTMENT OF NATURAL RESOURCES USE ONLY

APPROVED

Stephen J. Lyszkowski 7/6/88

DISTRIBUTION BY DNR

- ☒ Lansing
☐ Acquiring Owner
☐ Selling Owner
☐ Field

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

4-1 PER DISTRIBUTION
Permittee -- Orig & 1 copy
Division Office -- 2 copies
Field Office -- File copy
Others -- On request

PERMIT NUMBER 36355
FIELD NAME Hersey

PERMIT TO PLUG AND ABANDON MAR 16 1983

NAME AND ADDRESS OF PERMITTEE
Willmet

LEASE NAME AND WELL NO
State Hersey #2-35

LOCATION (1/4, 1/2, 1/4 or other) SECTION TOWNSHIP COUNTY
NE NW SW, 35 17N 9W Hersey Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.) DATE COMPLETED DATE PLUGGING W. START PLUGGING PERMIT REQUESTED BY & DATE
Dry hole 1/28/83 1/29/83 M. Woods 1/28/83

LAST PRODUCTION PLUGGING TO BE DONE BY
BUOP BWPD MCFGPT DATE Provins #9

PERMIT MAILED TO
Willmet

CASING AND CEMENTING RECORD

HOLE DIA	CASING DIA. & WT/FT	DEPTHS SET	CEMENT QUANTITY TYPE ADDITIVES	CMT TOP	PERFORATIONS
	16"	72			
	113/4"	954	550	surf	
	85/8"	5544	1100	70	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

CONFIDENTIAL

PLUGGING REQUIREMENTS:

Plugging requirements outlined are to be executed in accordance with the provisions of Act 53 of 1974 and orders adopted thereunder.

PI AS PER MINERAL WELLS:

Spot 120 sx cmt. at 8310'; spot 120 sx cmt. at 7909'; spot 60
sx at 6850' (for possible KOP); spot 145 sx at 6650 (TOC 5500')
Remainder of hole to be saved for possible kick off well.

NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965. GROUND WATER QUALITY CONTROL: It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974, CL 460 701 to 460 718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

OFFICE
Cadillac D#6

DATE
3/14/83

NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion.

R-7229
Rev 11/77

This document paid for with State funds

FEB 25 1983

LANSING HAS COPY
CADILLAC HAS COPY

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

FEB 25 1983

PERMIT NUMBER

36355

FIELD NAME

MARATHON

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

Willmet, Inc., 2250 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

State-Hersey

WELL NUMBER

2-35

WELL LOCATION

NE ¼ NW ¼ SW ¼ SEC. 35 T. 17N R. 9W

TOWNSHIP

Hersey

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

TOTAL DEPTH

8313

FORMATION

Cincinnatian

DATE PLUGGING STARTED

1-29-83

DATE PLUGGING COMPLETED

1-30-83

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Snider

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
24"	72'	---	
11 3/4"	954'	---	
8 5/8"	5540'	---	

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	7909-8310	120 Sx
Cement	6850-7909	120 Sx
Cement	6650-6850	60 Sx
Cement	5500-6650	145 Sx

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Dowell

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Marvin Woods

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran drill pipe to 8310, spotted 120 sx, pulled drill pipe to 7909 and spotted 120 sx, pulled drill pipe to 6850 and spotted 60 sx, pulled drill pipe to 6650 and spotted 145 sx.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

COMPANY NAME AND ADDRESS

Strickler Geological Services, Inc.
1425 S. Mission
Mt. Pleasant, MI 48858

SIGNATURE

William E. Booker

DATE (Month, Day, Year)

2-21-83

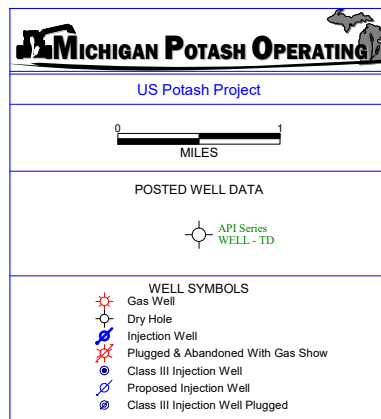
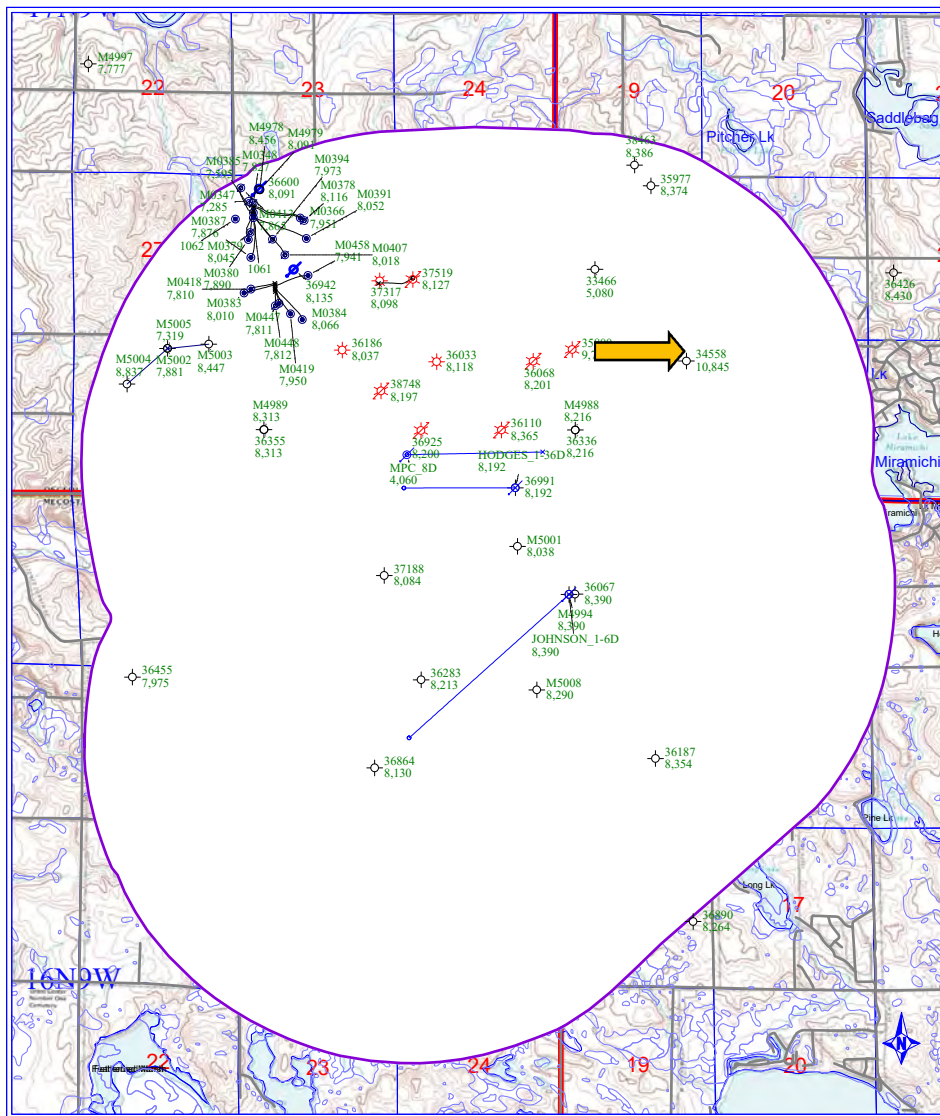


Figure A8. Map showing the wells that penetrate the confining zone in the AOR.

THOMAS 1-26
NE NW NW Sec 26 T17N R9W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

UPDATED APRIL 2014 BY JLT

20" CONDUCTOR DRIVEN TO 68'

17-1/2" Hole expected

SURFACE CASING

13 3/8", 48#/ft

SET @ 896' KB

CMT w/700 SX TO SURFACE

12-1/4" Hole expected

INTERMEDIATE CASING

9 5/8", 40#/ft

SET @ 5417' KB

CMT w/1700 SX TO SURFACE

PROD. CASING

NA

PLUGGING

RAN IN OPEN ENDED TO 8085' AND SPOTTED 200 SX CLASS A,
TRIPPED OUT AND RAN BACK IN WITH BAKER BP TO 5365'

SET BRIDGE PLUG, TRIPPED OUT AND WELDED STEEL PLATE
ON TOP. DIRECTIONALLY REDRILLED UNDER MW 020-841-367
ON 4/30/84

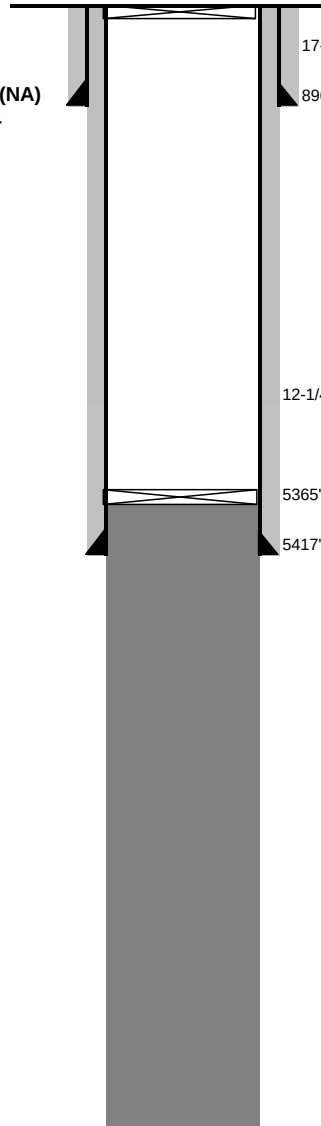
API No. 21-133-336600-0000

GL @ 1121.6'

KB @ 1137.2'

WELL COMPLETION DATE: DRY HOLE (NA)

PLUGGING COMPLETION DATE: 1/8/84



TD @ 8085' KB

THOMAS 1-26 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
3/12/1983	SPUD.
1/6/1984	DRILLING COMPLETED. FORMATION AT TD CABOT HEAD. 20" CONDUCTOR SET AT 68' 13 3/8" SET AT 896'; 700 SX 9 5/8" SET AT 5417'; 1700 SX
1/7/1984	PLUGGING START DATE RAN IN OPEN ENDED TO 8085' AND SPOTTED 200 SX CLASS A, TRIPPED OUT AND RAN BACK IN WITH BAKER BRIDGE PLUT TO 5365' - SET BRIDGE PLUG, TRIPPED OUT AND WELDED STEEL PLATE ON TOP. DIRECTIONALLY REDRILLED UNDER MW 020-841-367 ON 4-30-84.
1/8/1984	PLUGGING COMPLETED.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in DUPLICATE Within 30 Days after Well Completion

FEB 17 1984

PERMIT NUMBER

36600

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT PPG Oil & Gas Co., Inc. 2258 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling Company 2113 Enterprise Drive Mt. Pleasant, MI 48858				
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Thomas #1-26						DIRECTIONALLY DRILLED YES ☐ NO ☒		
SURFACE LOCATION NE NW NW		SECTION 26		TOWNSHIP 17N		RANGE 9W		
FOOTAGES (North/South) 460 Ft. from North		SECTION Line and 864		FOOTAGES (East/West) Ft. from West		TOWNSHIP NAME Hersey		
SUBSURFACE LOCATION		SECTION		TOWNSHIP		RANGE		
FOOTAGES (North/South) Ft. from		SECTION Line and		FOOTAGES (East/West) Ft. from		TOWNSHIP NAME Osceola		
SUBSURFACE LOCATION		SECTION		TOWNSHIP		RANGE		
FOOTAGES (North/South) Ft. from		SECTION Line and		FOOTAGES (East/West) Ft. from		TOWNSHIP NAME		
DATE	DRILLING BEGUN 3-12-83		TOTAL DEPTH OF WELL Driller 8085 Log 8091		TYPE WELL Temp. Abandoned		ELEVATIONS	
	DRILLING COMPLETED 1-06-84		FORMATION AT T.D. Cabot Head		FT. DRLD. - ROTARY TOOLS From 0 To 8091		K.B. 1137.2	R.F. 1135.8
	WELL COMPLETED		PRODUCING FORMATION(S)		FT. DRLD. - CABLE TOOLS From To		R.T.	Grd. 1121.6

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
20"	68	DP					YES	NO
13 3/8	896	700 SX						
9 5/8	5417	1700 SX						

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
None				Antrim	Gas	3050	Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
				Trav. Im	Gas	3596					XX	
				Burnt Bluff	Gas	7982					XX	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	None		None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION

DEVIATION SURVEY

PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	XX	LDT-CNL-CR	100 - 8091			1500	3/4°			
Birdwell		Sonic	897 - 8091			3700	3/4°			
		DLL-MLL	3200 - 5405			5093	1/4°			
			5420 - 8076			7816	2 1/2°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 2/15/84	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William E. Booker</i>
-----------------	--	---------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

Redrill

PERMIT NUMBER

36600

FIELD NAME

Regulatory Control Unit

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

Thomas

WELL NUMBER

1-36

WELL LOCATION

NE ¼

NW ¼

NW ¼ SEC. 26

T. 17N

R. 9W

TOWNSHIP

Hersey

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Temporarily Abandoned

TOTAL DEPTH

8091

FORMATION

Cabot Head

DATE PLUGGING STARTED

1-7-84

DATE PLUGGING COMPLETED

1-8-84

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Moss

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
20"	68	----	----
13 3/8"	898	----	----
9 5/8"	5417	----	----

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVE
Cement	8085	200 sx C1 A
Baker Bridge Plug	5365	----

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Carl Cookingham

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran in open ended to 8085 and spotted 200 sx Class A, tripped out and ran back in with Baker bridge plug to 5365 - set bridge plug, tripped out and welded steel plate on top. Directionally redrilled under MW 020-841-367 on 4-30-84.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

SIGNATURE

William E. Booker

DATE (Month, Day, Year)

2/15/84

COMPANY NAME AND ADDRESS

Strickler Geological Services, Inc.

1425 S. Mission

Mt. Pleasant, MI 48858

7/29/85: Location re-drilled under MW020-841-367.
OK for GS approval. (SNIDER)

John M. Snider

Geology

7/29/85

DNR DISTRIBUTION		STATE OF MICHIGAN DEPARTMENT OF NATURAL RESOURCES GEOLOGICAL SURVEY DIVISION		PERMIT NUMBER 36600	
Permittee -- Orig & 1 copy Division Office -- 2 copies Field Office -- File copy Others -- On request		Regulatory Control		FIELD NAME Hersey	
NAME AND ADDRESS OF PERMITTEE PPG Oil & Gas Co., Inc.					
LEASE NAME AND WELL NO. Thomas #1-26					
LOCATION (1/4 1/2 or other) NE NW NW,		SECTION 26		TOWNSHIP COUNTY 17N R 9W Hersey Osceola	
TYPE OF WELL (Oil, Gas, Dry Hole, etc.) Dry hole		DATE COMPLETED 1/7/84		DATE PLUGGING WILL START 1/7/84	
PLUGGING PERMIT REQUESTED BY & DATE Don Smith 1/7/84				PLUGGING TO BE DONE BY Halliburton	
LAST PRODUCTION BOPD BWPD MCFGPD DATE					
PERMIT MAILED TO		COPIES MAILED TO			
CASING AND CEMENTING RECORD					
HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES		CMT. TOP.
	20"	68'			
	13-3/8"	898'			
	9-5/8"	5417'			
GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:					
CONFIDENTIAL					
PLUGGING REQUIREMENTS*					
Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder.					
RIH. Spot 200 sx C1 A cmt. 8085'; set Baker BP at 5365'; remainder of hole used for directional redrill under MW020-841-367.					
*NOTE. BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.					
AUTHORIZED BY (signature) <i>John M. Smider</i>		OFFICE Cadillac D#6		DATE 7/26/85	

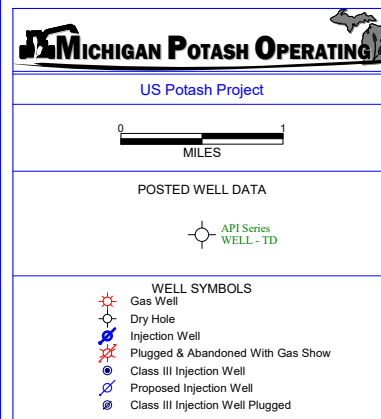
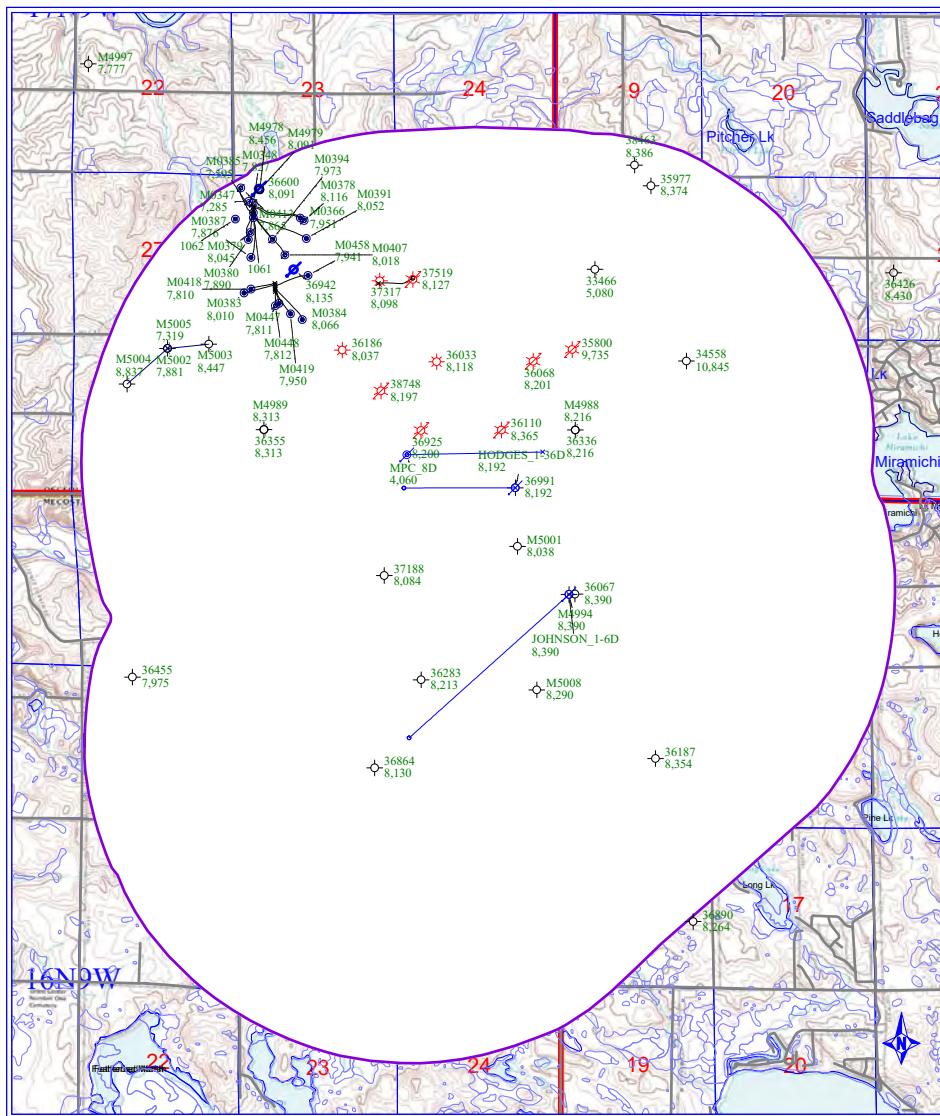
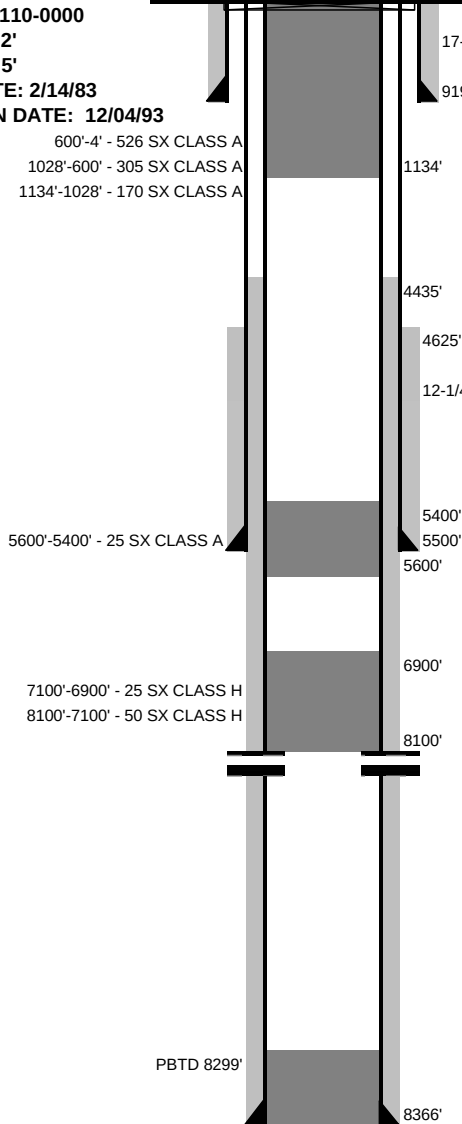


Figure A8. Map showing the wells that penetrate the confining zone in the AOR.

THOMPSON 3-36
NE NW SE Sec 36 T17N R9W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

UPDATED APRIL 2014 BY JLT

API No. 21-133-36110-0000
GL @ 1177.2'
KB @ 1200.5'
WELL COMPLETION DATE: 2/14/83
PLUGGING COMPLETION DATE: 12/04/93



SURFACE CASING

13 3/8", 48#/ft
SET @ 919' KB
CMT w/700 SX POZ MIX + 200 SX CLASS ATO SURFACE

INTERMEDIATE CASING

9 5/8", 43.5#/ft
SET @ 5500' KB
CMT w/300 SX SPECIAL
TOC @ 4625'

BURNT BLUFF PERFORATIONS

8141'-8144' - 13 HOLES
8142'-8152' 2X/ft - SQUEEZED w/25 SX CLASS A
8159'-8162' 2X/ft - SQUEEZED w/25 SX CLASS A

PROD. CASING

5-1/2", 17#/ft
SET @ 8366' KB
CMT w/1050 SX POZ MIX + 150 SX SPECIAL 11
TOC @ 4435'

PLUGGING

8100'-7100' - 50 SX CLASS H
7100'-6900' - 25 SX CLASS H
5600'-5400' - 25 SX CLASS A
1134'-1028' - 170 SX CLASS A
1028'-600' - 305 SX CLASS A
600'-4' - 526 SX CLASS A
PULLED 4' 13-3/8" csg, 3997.45' 9-5/8" csg, 4043' 5-1/2" csg

TD @ 8366' KB
PBDT @ 8299' KB

THOMPSON 3-36 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
9/25/1982	SPUD.
2/14/1983	DRILLING COMPLETED. FORMATION AT TD CINCINNATIAN. PRODUCING FORMATION CLINTON. 13 3/8" SET AT 919'; 900 SX 9 5/8" SET AT 5500'; 300 SX 5-1/2" SET AT 8366'; 1200 SX
4/22/1985	REWORK START DATE MIRU, KILL WELL, ND TREE, NU BOP's
4/23/1985	UNSEAT PACKER AND CIRC. HOLE CLEAN TO 8210'. TRIP OUT, LD PACKER, PU CEMENT RETAINER, TRIP IN TO 4000'
4/24/1985	SET RETAINER AT 8115', RUN INJECTION TEST, SQUEEZE PERS 8142-52' * 8159-62' WITH 25 SX CLASS A. TOO H, WOC.
4/25/1985	DRILL OUT SQUEEZE. CLEAN OUT HOLE TO 8299 (PBT D)
4/27/1985	SPOT ACID. PERF 8141-44' (13 HOLES). TIH TO 8095.
4/28/85 & 4/30/85	SWAB AND FLOW TEST; 3-400 MCF & 25 BBLS WATER;
5/1/1987	DATE LAST PRODUCED (21 MDF/D & 42 BWPD TEMPORARILY ABANDON WELL, SECURE WELLHEAD WITH CHAINS AND LOCK. DEPRESSURIZE SURFACE EQUIPMENT. EXTENSION GRANTED TO JUNE 13, 1989, FOR DECISION AS TO PLUG OR REQUEST TO HOLD AS TA FOR A BD WELL IN PERMISSION GIVEN TO TEMPORARILY ABANDON WELL TILL JUNE 13, 1991 FOR POSSIBLE RECOMPLETION AS A WATER DISPOSAL WELL.
11/8/1993	PLUGGING START DATE 8100'-7100' - 50 SX CLASS H 7100'-6900' - 25 SX CLASS H 5600'-5400' - 25 SX CLASS A 1134'-1028' - 170 SX CLASS A 1028'-600' - 305 SX CLASS A 600'-4' - 526 SX CLASS A; CUT 13-3/8" OFF 5' BELOW GROUND AND WELDED PLATE ON TOP PULLED 4' 13-3/8" csg, 3997.45' 9-5/8" csg, 4043' 5-1/2" csg
12/4/1993	PLUGGING COMPLETION DATE

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

FEB 22 1983

PERMIT NUMBER
36110
DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Willmet, Inc. 2250 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling Co. 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Thompson #3-36						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE NW SE		SECTION 36		TOWNSHIP T17N		RANGE R9W	
FOOTAGES (North/South) 460 Ft. from North		SECTION Line and 850		FOOTAGES (East/West) Ft. from West		TOWNSHIP NAME Hersey	
SUBSURFACE LOCATION		SECTION		TOWNSHIP		RANGE	
FOOTAGES (North/South)		SECTION		FOOTAGES (East/West)		TOWNSHIP NAME	
Ft. from		Line and		Ft. from		Line of quarter section	
DRILLING BEGUN 9-25-82		TOTAL DEPTH OF WELL Driller 8366 Log 8362		TYPE WELL Gas		ELEVATIONS	
DRILLING COMPLETED 10-31-82		FORMATION AT T.D. Cincinnatian		FT. DRD. - ROTARY TOOLS From 0 To 8362		K.B. 1200.5	R.F. 1199.2
WELL COMPLETED 2-14-83		PRODUCING FORMATION(S) Clinton		FT. DRD. - CABLE TOOLS From To		R.T.	Grd. 1177.2

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
							YES	NO
13 3/8	919'	900						
9 5/8	5500'	300		1-5-83	2x/ft	8159 - 8162		XX
5 1/2	8366'	1200		1-6-83	2x/ft	8142 - 8152	XX	

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
							Samples	Odor	Pits	Mud Line	Gas Log	Fill Up
Clinton	Gas			Traverse Lm	Gas	3420					X	
				Reed City	Gas	4150					X	
				Sour Zone	Gas	4700					X	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
1-6-83	8142-8152	Acid 500 Gals.	None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	LDT-CNL-GR	200-8362			2700	1/2°	X		8247
Birdwell		DLL-MLL	3300-8362			5100	3/4°			
		Sonic	200-8362			7461	1°			
						8340	1°			

PRODUCTION TEST DATA

Last Perf.

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH
-----	-----	Nil	3000	2	Nil	4659 8152

(I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 2-15-83	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William Booker</i>
-----------------	--	------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

DEPARTMENT OF NATURAL RESOURCES
Geological Survey Division

REQUEST FOR CHANGE OF OWNERSHIP OF A PERMIT
(Submit all copies)

AUG 1 1983

Please Change:

Permit No. 36110 Type Well Oil & Gas Field Name Hersey-Clinton Pool

Owned by Willmet, Inc.

Address 2258 Enterprise Dr., Mt. Pleasant, MI 48858 (517) 773-3949
(street) (town) (state) (zip) (phone)

for Thompson No. 3-36 located in the NE 1/4 NW 1/4 SE 1/4

section 36, T. 17N, R. 9W, Hersey Township, Osceola County,

to PPG Oil & Gas Co., Inc.
(acquiring owner-complete names please)

All operating rights are discharged by (us) (me).

(Owner)

(Representative)

Willmet, Inc.

(Signature)

(Date)

Donald D. Metzger 7-29-83

THE SUPERVISOR IS PROHIBITED BY STATUTE FROM ISSUING A PERMIT TO ANY PERSON WHO IS NOT IN COMPLIANCE WITH THE PROVISIONS OF THE ACT, THE RULES, OR THE ORDERS OF EITHER THE SUPERVISOR OR THE NATURAL RESOURCES COMMISSION. ELIGIBILITY FOR PERMITS IS CONDITIONED ON COMPLIANCE WITH SUCH RULES AND ORDERS IN A DILIGENT MANNER AND IN ACCORDANCE WITH ACCEPTED OIL FIELD PRACTICE.

(We) (I) have acquired the well under this permit and assume full responsibility for drilling, operation, and abandonment in conformity with the law, regulations and orders issued by the Supervisor of Wells. The bond(s) required is attached or already on file.

PPG Oil & Gas Co., Inc.

(acquiring owner-complete names please)

Address 2258 Enterprise Dr., Mt. Pleasant, MI 48858 (517) 773-3949
(street) (town) (state) (zip) (phone)

All operating rights and responsibilities are assumed by (us) (me).

(Owner)

(Representative)

PPG Oil & Gas Co., Inc.

(Signature)

(Date)

Donald D. Metzger 7-29-83

THE DEPARTMENT OF NATURAL RESOURCES

Approved. Stephan J. Langhans

(Signature)

AUG 9 1983

(Date)

DNR USE ONLY

White, Lansing

Yellow, Acquiring Owner

Pink, Selling Owner

Blue, Field

R-7214 (Rev. 10-79)

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
SUPERVISOR OF WELLS

GEOLOGICAL SURVEY

MAY 06 1985

WELL REWORK RECORD

FILE IN DUPLICATE WITHIN 30 DAYS AFTER COMPLETION OF REWORK OR DEEPENING
(Replaces GS 38)

Regulatory Control Unit

PERMIT NUMBER 36110	DEEPENING PERMIT NUMBER	FIELD NAME Hersey
NAME AND ADDRESS OF WELL OWNER PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, Michigan 48858		
LEASE OR FARM NAME Thompson		WELL NUMBER 3-36
WELL LOCATION NE NW SE	SECTION 36	T. 17N R. 9W Hersey
TOWNSHIP Hersey		COUNTY Osceola
WELL COMPLETED FOR (Oil, Gas, Gas Storage, Brine Disposal, Water Injection, etc.) Gas	TOTAL DEPTH AFTER REWORK 8366'	MECHANICAL LOGS RUN None
WELL COMPLETED IN (Name Rock Formation and Zone of Completion) Clinton/Burnt Bluff	DATE REWORK COMMENCED 4-22-85	DATE REWORK COMPLETED 4-30-85
NAME AND ADDRESS OF CONTRACTOR Lease Management, Mt. Pleasant and Halliburton, Mt. Pleasant		

WELL CASING RECORD - BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture Treatment Record	Perforations If plugged, how?
Size	Depth	Sacks	Type	From	To		
13-3/8	919	900	Poz & A				
9-5/8	5500	300	Hall. Spec				
5-1/2	8366	1200	Poz & H				
2-7/8	7635	Packer		8142	8152	500 Gal. 1-7-83	
				8159	8162		

WELL CASING RECORD - AFTER REWORK (Indicate additions and changes only)

Casing		Cement		Perforations		Acid or Fracture Treatment Record	Perforations If plugged, how?
Size	Depth	Sacks	Type	From	To		
				8142	8152		Squeezed
				8159	8162		Squeezed
				8141	8144	500 Gal. 20% 4-27-85	

DESCRIBE REWORK OPERATIONS IN DETAIL

4/22/85 - MIRU, kill well, ND tree, NU BOP's.

4/23/85 - Unseat packer and circ. hole clean to 8210'. Trip out, LD packer, PU cement retainer, trip in to 4000'.

4/24/85 - Set retainer at 8115', run injection test, squeeze perfs 8142-52' & 8159-62' with 25 sxs Class A. TOOH, WOC.

4/25/85 - Drill out squeeze. Clean out hole to 8299' (PBSD).

4/27/85 - Spot acid. Perf 8141-44' (13 holes). TIH to 8095.

4-28-85
& - Swab and flow test.
4/30/85

IMPORTANT! SEE REVERSE SIDE

GEOLOGICAL FORMATION RECORD OF DEEPENING

FROM	TO	FORMATION (type, color, hardness)	FROM	TO	FORMATION (type, color, hardness)
		SEE ORIGINAL 7210			

DAILY PRODUCTION TEST RECORD

DAILY INJECTION TEST RECORD IF INJECTION WELL (OR BD)

[illegible]

SIGNATURE (Well Owner or Authorized Representative)

ADDRESS (If different than well owner)

DATE (Month, Day, Year)

Donald R. Hall / Donald R. Hall

Same

May 3, 1985

NOTE: IF GAS WELL, RECORD FLOW TEST UNDER "DAILY PRODUCTION TEST RECORD"

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

LEAVE BLANK
DEEPENING PERMIT NUMBER
DATE ISSUED

APPLICATION
TO
CHANGE WELL STATUS
(SUBMIT IN QUADRUPLICATE)

APR 05 1985

PERMIT NUMBER 36110

FIELD NAME Hersey

NAME AND ADDRESS OF WELL OWNER PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, Michigan 48858
--

LEASE OR FARM NAME Thompson	WELL NUMBER 3-36
--------------------------------	---------------------

WELL LOCATION NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$	SECTION 36	T. 17N	R. 9W	TOWNSHIP Hersey	COUNTY Osceola
---	---------------	--------	-------	--------------------	-------------------

(Deepen, Plug Back, Convert to Injection or Disposal Well, Temporarily Abandon, etc.)

APPROVAL REQUESTED TO Set retainer or squeeze to reduce water production

DATE DRILLING COMPLETED 10-31-82	DATE LAST PRODUCED 2-20-85	LAST PRODUCTION (Amt/day) 0 OIL, 25 WTR., 350 M.C.F. GAS
-------------------------------------	-------------------------------	---

WORK TO BE DONE BY Lease Management, Dowell	WILL START (DATE) 4-8-85
--	-----------------------------

CASING AND CEMENTING RECORD			
SIZE CASING	DEPTH SET	NO. SACKS CEMENT	PERFORATIONS
13-5/8	919	900	
9-5/8	5500	300	
5-1/2	8366	1200	8159-62, 8142-52
2-7/8	7635		

FORMATION RECORD
(Formation and depth, Oil, Gas & Wtr. shows, etc.)

See attached sheet

DESCRIBE PROPOSED WORK IN DETAIL:

1. Run production log to determine where water is entering wellbore.
2. If water is coming from 8159-62, set cement retainer at 8155. Swab perfs at 8142-52 to kick off - test and return to production.
3. If water is coming from 8142-52, set retainer at 8100. Squeeze with 75 sxs. WOC.
4. Drill out to 8175'.
5. Reperforate and stimulate with 500 gallons 28%. Perfs will be determined after logging.
6. Swab, test, return to production.

The proposed work as outlined above and approved by the Supervisor or his Authorized Representative will be executed in accordance with the provisions of Act 61, P.A. 1939 and the rules and regulations issued and adopted thereunder.

SIGNATURE (Well Owner or Authorized Representative) <i>Donald R. Hall</i>	DATE 3-28-85
APPROVED BY: <i>Michael J. [Signature]</i>	DATE 4/1/85
FIELD OFFICE CADILLAC	

NOTE: WELL REWORK RECORD, Form R-7212, is to be filled in DUPLICATE within 30 days after completion.

R 7237 3/73

STATE OF MICHIGAN
REQUEST FOR TRANSFER OF A PERMIT

TYPE OR PRINT

SUBMIT 4 COPIES TO: Department of Natural Resources
Geological Survey Division
Box 30028
Lansing, Michigan 48909

Filing for change of ownership of well is required in accordance with ☒ Act 81, P.A. 1939 and ☐ Act 315 P.A. 1969, as amended, and Administrative Rules promulgated thereunder.

PERMIT NO 36110	WELL TYPE Gas
FIELD NAME Hersey-Clinton	
WELL NAME AND NUMBER Thompson 3-36	
WELL LOCATION NE 1/4 NW 1/4 SE 1/4 SECTION 36 T 17N R 9W	
TOWNSHIP Hersey	COUNTY Osceola

TRANSFER OF A PERMIT FROM:

NAME(S) OF SELLING OWNER(S)

PPG Oil & Gas Co., Inc.

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

All operating rights are discharged by

Owner(s)

Representative(s)

Signature(s)

Date(s)

PPG Oil & Gas Co., Inc., Mr. Donald R. Hall

Donald R. Hall 12/14/87

ELIGIBILITY FOR PERMITS IS CONDITIONED UPON COMPLIANCE WITH THE STATUTES, RULES AND ORDERS OF THE DEPARTMENT OF NATURAL RESOURCES. PERMITS WILL NOT BE GRANTED TO PERSONS NOT IN COMPLIANCE.

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

TRANSFER OF A PERMIT TO:

NAME(S) OF ACQUIRING OWNER(S)

Marathon Oil Company

ADDRESS Number and Street -- City or Town -- State -- Zip Code -- Telephone

One Jackson Square, Suite 600, Jackson, MI 49201 (517) 782-8145

(We) (I) have acquired the well under this permit and assume full responsibility for the drilling, operation, and abandonment in conformity with the law, regulations and orders.

SURETY BOND:

☐

SINGLE WELL

☐

ATTACHED

BONDING CO.

SAFECO Insurance Company of America

☒

BLANKET

☒

ON FILE

BOND NUMBER

5194219

All operating rights and responsibilities are assumed by

Owner(s)

Representative(s)

Signature(s)

Date(s)

Marathon Oil Company, Mr. David W. Hoopman

D. W. Hoopman

12/16/87

FOR DEPARTMENT OF NATURAL RESOURCES USE ONLY

APPROVED

L. J. [Signature]
Signature

6/28/88
Date

DISTRIBUTION BY DNR

- ☒ Lansing
- ☐ Acquiring Owner
- ☐ Selling Owner
- ☐ Field

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028
LANSING, MICHIGAN 48909

REQUIRED BY AUTHORITY OF:

☒ ACT 61, P.A. 1939, AS AMENDED ☐ ACT 315, P.A. 1969, AS AMENDED

APPLICATION TO (Submit 4 copies):

☒ CHANGE WELL STATUS

☐ PLUG AND ABANDON

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

CHANGE OF WELL STATUS REQUESTED FOR:

☐ PLUG BACK ☒ EXTEND PLUGGING (T.A.) ☐ PERFORATE
☐ CONVERT TO INJECTION OR DISPOSAL WELL ☐ OTHER

☐ ACIDIZE (315 ONLY) ☐ FRACTURE (315 ONLY)

LAST PRODUCTION/INJECTION AND TYPE OF FLUID
(Amount per day & injection pressure)

21 MCF/D 42 BWPD

WORK TO BE DONE BY: ☐ APPROVAL MAILED

NA

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP	PERFORATIONS
17-1/2	13-3/8 48#	919	700 Poz mix, 200 Class A	C1YC	
12-1/4	9-5/8 43.5	5,500	300 Special	4,625	
8-1/2	5-1/2 17#	8,366	1,050 Poz mix, 150 Special II	4,435	8141-44

FORMATION RECORD (Formation and depth, oil, gas and water shows, etc.):

See Attached.

DETAIL PROPOSED PROCEDURES:

Temporarily abandon well, secure wellhead with chains and lock. Depressurize surface equipment.

DNR ADDITIONAL REQUIREMENTS:

Permission given to temporarily abandon well for reservoir study until 12/31/88.

NAME/SIGNATURE (Authorized Representative)

Donald R. Hall, Production Superintendent

DATE

07/07/88

APPROVED BY DNR

OFFICE

Cadillac

DATE

12/31/88

NOTE: THREE COPIES OF WELL PLUGGING OR REWORK (PR 7200-8) ARE TO BE FILED WITHIN 30 DAYS OF COMPLETION.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028
LANSING, MICHIGAN 48909

RECEIVED BY AUTHORITY OF:

☒ 61. P.A. 1939, AS AMENDED ☐ ACT 315, P.A. 1969, AS AMENDED

A. APPLICATION TO (Submit 4 copies):

☒ CHANGE WELL STATUS ☐ PLUG AND ABANDON

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

CHANGE OF WELL STATUS REQUESTED FOR:

☐ PLUG BACK ☒ EXTEND PLUGGING (T.A.) ☐ PERFORATE
☐ CONVERT TO INJECTION OR DISPOSAL WELL ☐ OTHER

☐ ACIDIZE (315 ONLY) ☐ FRACTURE (315 ONLY)

LAST PRODUCTION/INJECTION AND TYPE OF FLUID
(Amount per day & injection pressure)

21 MCF/D 42 BWPD

PERMIT NO.

36110

TYPE OF WELL

Gas

NAME AND ADDRESS OF WELL OWNER ☐ APPROVAL MAILED

Marathon Oil Company
One Jackson Square, Ste. 600
Jackson, MI 49201

JUL 11 1988

FIELD/FACILITY NAME

Hersey

WELL NAME

Thompson

WELL NO.

3-36

WELL LOCATION

NE 1/4 of NW 1/4 of SE 1/4 Section 36 T 17N R 9W

TOWNSHIP

Hersey

COUNTY

Osceola

DATE DRILLING COMPLETED

10/31/82

DATE LAST PRODUCED/UTILIZED

May 1987

WORK TO BE DONE BY: ☐ APPROVAL MAILED

NA

STARTING DATE

CASING AND CEMENTING RECORD

HOLE DIA	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP	PERFORATIONS
17-1/2	13-3/8 48#	919	700 Poz mix, 200 Class A	CITYC	
12-1/4	9-5/8 43.5	5,500	300 Special	4,625	
8-1/2	5-1/2 17#	8,366	1,050 Poz mix, 150 Special II	4,435	8141-44

FORMATION RECORD (Formation and depth, oil, gas and water shows, etc.):

5 Attached.

DETAIL PROPOSED PROCEDURES:

Temporarily abandon well, secure wellhead with chains and lock. Depressurize surface equipment.

Extension granted to June 13, 1989, for decision as to plug or request to hold as T.A. for a BD well in what may become a unitized gas field that is increasing in formation water.

ADDITIONAL REQUIREMENTS:

mission given to temporarily abandon well for reservoir study until 12/31/88.

SIGNATURE (Authorized Representative)

Donald R. Hall, Production Superintendent

D.R. Hall

DATE

07/07/88

PROVED BY OMR

John McSpader

OFFICE

Cadillac

DATE

12/31/88

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028
LANSING, MICHIGAN 48909

REQUIRED BY AUTHORITY OF:

☒ ACT 61, P.A. 1939, AS AMENDED ☐ ACT 315, P.A. 1969, AS AMENDED

APPLICATION TO (Submit 4 copies):

☒ CHANGE WELL STATUS ☐ PLUG AND ABANDON

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

CHANGE OF WELL STATUS REQUESTED FOR:

☐ PLUG BACK ☒ EXTEND PLUGGING (T.A.) ☐ PERFORATE
☐ CONVERT TO INJECTION OR DISPOSAL WELL ☐ OTHER

☐ ACIDIZE (315 ONLY) ☐ FRACTURE (315 ONLY)

LAST PRODUCTION/INJECTION AND TYPE OF FLUID
(Amount per day & injection pressure)

21 MCF/D 42 BWPD

WORK TO BE DONE BY: ☐ APPROVAL MAILED

NA

PERMIT NO. 36110	TYPE OF WELL Gas
NAME AND ADDRESS OF WELL OWNER ☐ APPROVAL MAILED Marathon Oil Company One Jackson Square, Suite 600 Jackson, MI 49201	
FIELD/FACILITY NAME Hersey	
WELL NAME Thompson	WELL NO. 3-36
WELL LOCATION NE 1/4 of NW 1/4 of SE 1/4 Section 36 T 17N R 9W	
TOWNSHIP Hersey	COUNTY Osceola
DATE DRILLING COMPLETED 10/31/82	DATE LAST PRODUCED/UTILIZED May 1987
STARTING DATE	

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP	PERFORATIONS
17-1/2	13-3/8 48#	919	700 Poz mix, 200 Class A	Circ	
12-1/4	9-5/8 43.5	5,500	300 Special	4,625	
8-1/2	5-1/2 17#	8,366	1,050 Poz mix, 150 Special II	4,435	8141-44

FORMATION RECORD (Formation and depth, oil, gas and water shows, etc.):

See attached

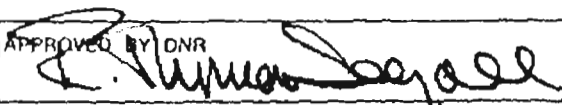
DETAIL PROPOSED PROCEDURES:

Temporarily abandon well, secure wellhead with chains and lock. Depressurize surface equipment.

Extension granted to June 13, 1989 for decision as to plug or request to hold as T.A. for a BD well in what may become a unitized gas field that is increasing in formation water.

ONR ADDITIONAL REQUIREMENTS:

Permission is given to temporarily abandon well till June 13, 1991 for possible recompletion as a water disposal well.

NAME/SIGNATURE (Authorized Representative)	DATE
APPROVED BY DNR 	
OFFICE Lansing	APPROVAL DATE 9/26/89
	TERMINATION DATE 6/13/91

NOTE: THREE COPIES OF WELL PLUGGING OR REWORK (PR 7200-8) ARE TO BE FILED WITHIN 30 DAYS OF COMPLETION.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028
LANSING, MICHIGAN 48909

REQUIRED BY AUTHORITY OF:

☒ ACT 61, P.A. 1939, AS AMENDED ☐ ACT 315, P.A. 1969, AS AMENDED

APPLICATION TO (Submit 4 copies):

☒ CHANGE WELL STATUS ☒ PLUG AND ABANDON

NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

CHANGE OF WELL STATUS REQUESTED FOR:

☐ PLUG BACK ☐ EXTEND PLUGGING (T.A.) ☐ PERFORATE
☐ CONVERT TO INJECTION OR DISPOSAL WELL ☐ OTHER

☐ ACIDIZE (315 ONLY) ☐ FRACTURE (315 ONLY)

LAST PRODUCTION/INJECTION AND TYPE OF FLUID
(Amount per day & injection pressure)

WORK TO BE DONE BY: ☐ APPROVAL MAILED

N/A

STARTING DATE

ASAP

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT TOP	PERFORATIONS
17-1/2"	13 3/8", 48#	919'	700 SX Pozmix, 200 SX Class A	Circ.	
12-1/4"	9-5/8", 43.5#	5500'	300 SX Special	4625'	
8-1/2"	5 1/2", 17#	8366'	1050 SX Pozmix, 150 SX Special C1.H	4200'	8141-44'

FORMATION RECORD (Formation and depth, oil, gas and water shows, etc.):

SEE ATTACHMENT A

GEOLOGICAL SURVEY

NOV 08 1993

Permit & Bonding Unit

DETAIL PROPOSED PROCEDURES:

SEE ATTACHMENT B

DNR ADDITIONAL REQUIREMENTS:

Notify DNR 616-775-9727 24 hours prior to start up.

NAME/SIGNATURE (Authorized Representative)

N.R. Daniels, Jr. Michigan Production Superintendent

N.R. Daniels Jr.

DATE

9/27/93

APPROVED BY DNR

Michael J. Nuss

OFFICE

CTDILLAC

APPROVAL DATE

NOV 05 1993

TERMINATION DATE

NOTE: THREE COPIES OF WELL PLUGGING OR REWORK (PR 7200-8) ARE TO BE FILED WITHIN 30 DAYS OF COMPLETION.



Michigan Department of Natural Resources
Geological Survey Division

RECORD OF WELL PLUGGING OR REWORK

REQUIRED BY AUTHORITY OF: ACT 61, PA 1939, as amended or ACT 315, PA 1969, as amended. Non-submission and / or falsification of this information may result in fines and / or imprisonment.

Permit Number

36110

Well Name & Number

Thompson #3-36

Type of Well

Field Name

Oil Producer

Hersey

1/4 1/4 1/4, Section, Township, Range, County

NE NW SE Sec 36 T17N-R9W

Osceola, County

Date Plugging / Rework Started

11-08-93

Date Plugging / Rework Completed

12-04-93

Name and Address of Well OWNER

Marathon Oil Company
1231 E. Mosherville Road
Jonesville, MI 49250

Name and Address of Contractor/Service Company

(attach additional sheets as needed)

Beckman Services, Inc. 4400 N. Clare Ave. Harrison, MI 48622
Michigan Wireline P O Box 349 Mt. Pleasant, MI 48804
Halliburton Ser. P O Box 374 Mt. Pleasant, MI 48804

Indicate Operation & Type of Well Permit

☒ PLUGGING ☐ REWORK ☒ Act 61 Oil & Gas ☐ Act 315 Mineral Wells

☐ Tools, tubing, etc. left in hole - describe in Daily Chronology.

Name of DNR employee issuing Plugging Permit or Approving Change of Well

Status. Michael J. Moss

Date issued 11-05-93

☐ Well logs run - list types and depths in Daily Chronology.

For WELL PLUGGING Only (HOLE CONDITIONS AFTER PLUGGING)

CASING				PLUGS			
Casing Size	Where Set	Amount Casing Pulled	Depth Casing Cut/Perfed: Windows Milled	Depth Bottom Top	Type of Bridge or Plug	Cement Plugs: Cement type, # sx, and additives	Tagged Top? Y/N
13 3/8"	919'	4'	4'	8100' 7100'	Cement	50 sx Class "H"	N
9 5/8"	5500'	3997.45'	4003'	7100' 6900'	Cement	25 sx Class "H"	N
5 1/2"	8366'	4043'	4150'	5600' 5400'	Cement	25 sx Class "A"	N
				1134' 1028'	Cement	170 sx Class "A"	Y
				1028' 600'	Cement	305 sx Class "A"	N
				600' 4'	Cement	526 sx Class "A"	N

Check ☐ if NORM material was reinserted into wellbore. If so, describe materials fully in the Daily Chronology section on back of this form.

For WELL REWORK Only

REWORK WAS TO: ☐ TEMPORARILY ABANDON
☐ CONVERT TO: ☐ Disposal Well ☐ Production ☐ Storage ☐ Enhanced Recovery ☐ Other

☐ REMEDIAL: ☐ Perf & Test ☐ Repair Casing / Cement ☐ Redrill ☐ Other

☐ PLUGBACK: ☐ New Production Zone ☐ Disposal ☐ Storage ☐ Enhanced Recovery ☐ Other

Well Casing Record - BEFORE Rework

Casing		Cement		Perforations			Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	if plugged, HOW?	

Well Casing Record - AFTER Rework (Indicate additions and changes only: complete Test Record on next page)

Casing		Cement		Perforations			Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	if plugged, HOW?	

BEFORE REWORK

Total Depth Formation / Zone Well Completed For

AFTER REWORK

Total Depth Formation / Zone Well Completed For

[illegible]

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."

Authorized Signature

Date _____

12/9/93

N. R. Daniels, Jr. Michigan Production Superintendent

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

Mail completed original and three copies to the appropriate DNR District Office within 30 days after completion of plugging or rework.

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
November 11, 1993

WORKOVER/RECOMPLETION

Hersey Field
Thompson #3-36
Osceola County, MI
AFE NO: 98832
AFE AMOUNT: \$48,300

OPERATOR: Marathon Oil
RIG: Beckman #4
MOC/WI: 77%3
MIRU: 11-08-93

CSG: 13 3/8" 45# @ 919'
9 5/8" 435# @ 5500'
5 1/2" 17# @ 8366'

ELEV: GL KB
TD: PBTD:

COST TO DATE: \$1,123

DAY: 1

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/08/93: MI and spot 500 bbl Frac tank, mud pump, and open top tank. Hauled in 350 bbls 10.2 SAB. Rig had flat tire on the way to the location. Waiting on tire repair in a.m.

COST TO DATE: \$5,697

DAY: 2

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/09/93: MIRU Beckman Rig #4. Used J&B cat to spot rig. Csg 1100 psi and tbg 0 psi. RU JO well service. Ran 2.33" OD gauge ring range to 7968'. ROH. RIH w/DD Bridge plug and set @ 300'. ROH. ND tree (All bolts very rusty). NU BOP's. RU Double check. Tested BOP's to 500 psi and 5000 psi. Tested ok. RD Double check. RIH and retrieved DD Bridge plug. ROH. RD JO well service. Secured well for night.

COST TO DATE: \$10,137

DAY: 3

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/10/93: Tbg 0 psi and csg 0 psi. Circulated hole w/10.2 SAB. TOH w/260 jts 2 7/8" tbg (8067'). RU Michigan Wireline. RIH w/gauger ring and junk basket to 8150' GLM. ROH. RIH w/Baker K-1 5 1/2" retainer and set @ 8100'. ROH. RD Michigan Wireline. TIH w/Baker stinger tool and 10 stands 2 7/8" tbg. SWIFN.

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
November 15, 1993

WORKOVER/RECOMPLETION

Hersey Field
Thompson #3-36
Osceola County, MI
AFE NO: 98832

AFE AMOUNT: \$48,300
CSG: 13 3/8" 45# @ 919'
9 5/8" 435# @ 5500'
5 1/2" 17# @ 8366'

OPERATOR: Marathon Oil
RIG: Beckman #4
MOC/WI: 77%3
MIRU: 11-08-93

ELEV: GL KB
TD: PBTD:

COST TO DATE: \$17,917

DAY: 4

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/11/93: 0 psi on well. Finished TIH w/2 7/8" tbg. Stung into retainer @ 8100'. RU Halliburton services. Pumped 15 bbls SAB @ 3 bbl/min, 2000 psi. Pulled out of retainer and spotted cement to end of tbg. Stung back into retainer. Pumped 25 sks Class "H" cmt into formation @ 2 bbl/min, 1800 psi. Pulled out of retainer and spotted 25 sks Class "H" cmt. Flushed tbg with 45 bbls SAB. TOH with 2 7/8" tbg to 7100'. Spotted 25 sks of Class "H" cmt (7100-6900'). Flushed w/40 bbls SAB. TOH with 2 7/8" tbg to 5600'. Spotted 25 sks Class "A" cmt (5400-5600'). Flushed w/30 bbls SAB. TOH w/2 7/8" tbg to 4500'. Reverse circulated hole clean. RD Halliburton. TOH w/2 7/8" tbg and stinger. SWIFN.

COST TO DATE: \$24,192

DAY: 5

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/13/93: 0 psi on well. ND BOP's. Ran 5 1/2" spear, pulled 140,000 w/rig. Unable to move slips on 5 1/2". Cut 5 1/2" off 2' below slips with machine cutting. ND 5 1/2" csg spool. NU spacer spool. NU 10,000 psi BOP's. Ran spear in 5 1/2". Pulled stretch on 5 1/2" 70,000 to 95,000, had 11" stretch. Pulled 70,000 to 100,000, had 12" stretch. RU Michigan Wireline. RIH and cut 5 1/2" at 4150'. Worked csg pulling 110,000 lbs csg free. ROH and RD Michigan Wireline. TOH w/5 1/2" csg checking each jt for NORM. 50 jts (2083.99'). SWIFN.

COST TO DATE: \$27,092

DAY: 6

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/14/93: 0 psi on well. TOH w/20 jts 5 1/2" 17# csg. Bearing went out of rig gear box right angle drive. SD for repairs. Loaded hole w/10.2 SAB and secured well. Total 5 1/2" csg pulled 70 jts (2908.47). (About 1240' left to pull). Spotted csg jacks. Spotted 10,000 BOP's for 9 5/8". Secured location until rig repairs complete. Should be done on 11-16-93.

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
November 24, 1993

WORKOVER/RECOMPLETION

Hersey Field
Thompson #3-36
Osceola County, MI
AFE NO: 98832

AFE AMOUNT: \$48,300
CSG: 13 3/8" 45# @ 919'
9 5/8" 435# @ 5500'
5 1/2" 17# @ 8366'

OPERATOR: Marathon Oil
RIG: Beckman #4
MOC/WI: 77.3%
MIRU: 11-08-93

ELEV: GL KB
TD: PBTB:

COST TO DATE: \$32,997

DAY: 7

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/22/93: 0 psi on well. Finished pulling 5 1/2" 17# csg (27 jts). Total 5 1/2" csg pulled 4042.72. Checked for NORM. All okay. ND BOP's and NU csg jacks. RU Michigan Wireline. RIH w/8 1/4" OD cutter. Set down at 2688'. Could not get beyond 2688'. ROH. NU BOP's. Secured well for night. Ordered out 8 1/2" OD csg scraper for a.m.

COST TO DATE: \$38,432

DAY: 8

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/23/93: 0 psi on well. TIH w/8 1/2" bit and 8 1/2" csg scraper to 4149'. Circulated hole. TOH w/2 7/8" tbq, scraper and bit. RU csg jacks and 9 5/8" spear. RU Michigan Wireline. RIH w/8 1/4" OD cutter. Pulled 220,000# w/jacks. Pipe free @ 4000'. Cut csg @ 4003'. Worked csg and it seems to be cut. ROH w/wireline. RD Michigan Wireline. 0 psi on well. NU jacks and pulled 30' 9 5/8" csg @ 115,000# w/jacks. Pulled slips and bowl out of wellhead. Set 9 5/8" csg back down. ND jacks and NU BOP's. Secured well for night.

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
November 30, 1993

WORKOVER/RECOMPLETION

Hersey Field
Thompson #3-36
Osceola County, MI
AFE NO: 98832

AFE AMOUNT: \$48,300
CSG: 13 3/8" 45# @ 919'
9 5/8" 435# @ 5500'
5 1/2" 17# @ 8366'

OPERATOR: Marathon Oil
RIG: Beckman #4
MOC/WI: 77.3%
MIRU: 11-08-93

ELEV: GL KB
TD: PBTD:

COST TO DATE: \$39,692

DAY: 9

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/24/93: 0 psi on well. Rig crew stringing up six lines on rig (7 hrs). Pulled on 9 5/8" csg, pulling 230,000# w/rig. Pipe moved up hole 20'. Worked 9 5/8" pipe pulling @ 220,000#. Trouble with rig air supply to clutch. Rig only able to pull 180,000# to 200,000#. Clutch slipping. Stacked 9 5/8" csg out on bottom. Secured well. Rig crew to work on rig on 11-26-93. No charge for rig today. Will start work again on 11-29-93.

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
December 02, 1993

WORKOVER/RECOMPLETION

Hersey Field
Thompson #3-36
Osceola County, MI
AFE NO: 98832

AFE AMOUNT: \$48,300
CSG: 13 3/8" 45# @ 919'
9 5/8" 435# @ 5500'
5 1/2" 17# @ 8366'

OPERATOR: Marathon Oil
RIG: Beckman #4
MOC/WI: 77.3%
MIRU: 11-08-93

ELEV: GL KB
TD: PBSD:

COST TO DATE: \$43,702

DAY: 10

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/29/93: 0 psi on well. RU casing jacks. Started jacking 9 5/8" @310,000#. Jacks 8 jts out of hole. Pulled 1 jt w/rig @ 200,000#. Unable to break connection on jt #10. Worked 1 1/2 hrs. Called out welder to head collar in am. Secured well for night. Loaded hole w/10.2 brine. Took 32 bbls. Total of 9 jts 9 5/8" csg pulled today.

COST TO DATE: \$48,402

DAY: 11

PRESENT OPERATION: Plug and Abandon

REMARKS: 11/30/93: 0 psi on well. Loaded hole w/10.2 SAB. Took 25 bbls. Attempted to pull 9 5/8" csg w/rig. Pulled 230,000# with no luck. Jacked out 1 jt 9 5/8" csg pulling 300,000#. Pulled 5 jts with rig @ 180,000#. RD csg jacks. Finished pulling 9 5/8" csg. Loaded hole w/10.2 SAB after each jt. Checked all pipe for NORM. All okay. Total pipe pulled today 94 jts. Total pipe pulled 103 jts and 2 stubs (3997.45). Shut well in for night.

COST TO DATE: \$51,962

DAY: 12

PRESENT OPERATION: Plug and Abandon

REMARKS: 12/01/93: 0 psi on well. Loaded hole w/10.2 SAB. Took 22 bbls. TIH with 2 7/8" tbg (open ended). Tbg stopped @1266'. Worked tbg, but could not get through @1266'. RU mud pump and circulated hole w/10.2 bbls brine. Still unable to get through @ 1266'. RU Halliburton. Circulated hole w/50 Vis Gel (wt 10.1). Dropped through @ 1266'. Ran 3 jts tbg and set down again @1357'. Soft tbg drifting down slow. TOH w/2 7/8" tbg. Bottom of tbg @900'. Secured well for night.

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
December 06, 1993

WORKOVER/RECOMPLETION

Hersey Field
Thompson #3-36
Osceola County, MI
AFE NO: 98832
AFE AMOUNT: \$48,300
CSG: 13 3/8" 45# @ 919'
9 5/8" 435# @ 5500'
5 1/2" 17# @ 8366'

OPERATOR: Marathon Oil
RIG: Beckman #4
MOC/WI: 77.3%
MIRU: 11-08-93

ELEV: GL KB
TD: PBTB:

COST TO DATE: \$59,404

DAY: 13

PRESENT OPERATION: Plug and Abandon

Remarks: 12/02/93: Well 0 psi. TIH w/2 7/8" tbg and tagged at 1086' (180' higher than yesterday). RU Halliburton. Reverse circulated hole clean. Getting back chunks of shale. Circulated down 30', pulled up hole, and could not get back down. Tbg plugged. RD Halliburton. TOH w/2 7/8" tbg. RU Kal-Fish drill mobile. Started mixing salt water gel to 45 Vis. TIH w/7 5/8" bit and 2 7/8" tbg and tagged at 1080'. Drilled down to 1115' again (10 min) and circulated hole 30 minutes. Short trip again. Lost 5' of hole. Reamed at 1110' - 1115' for one hour. Short trip again. (No hole loss). Picked up jt w/swivel and drilled from 1115' to 1128' for 10 minutes. Drilled hard from 1128' to 1134'. Drilled down to 1143'. Circulated hole 30 minutes. Added mud and took Vis to 50. Short trip at 1115' - 1143' (lost 10' of hole). Drilled down from 1133' - 1143' in 35 minutes. Circulated hole for 30 minutes. Present conditions: pump rate 4 bbls/min, mud wt 10.3, 48 Vis, and pump pressure 450 psi. Bit RPM 100. RU Halliburton services and kicked pump rate up to 7 bbls/min.

COST TO DATE: \$77,799

DAY: 14

PRESENT OPERATION: Plug and Abandon

Remarks: 12/03/93: Drilled at 1133' to 1143'. Kept losing last 10' of hole. Halliburton pumping at 7 bbls/min. Mud wt 10.2 and 48 Vis. 09:00 hrs called Mike Moss with the DNR. Okay to plug well from 1134' to surface. RD Kalfish and RD Halliburton. TOH w/2 7/8" tbg and 7 7/8" rock tooth bit. Layed down 60 jts tbg from derrick. TIH w/2 7/8" tbg open ended to 1100'. RU Halliburton. Tbg plugged. Pressure up to 1000 psi on tbg. Shook tbg, but could not unplug tbg. TOH w/2 7/8" tbg (last jt plugged). TIH w/2 7/8" tbg to 1091'. Circulated hole. Circulated down to 1122'. Mixed and pumped 170 sks Class "A" cmt. TOH w/2 7/8" tbg to 1028'. Mixed and pumped 305 sks Class "A" cmt 1028' to 600'. Pulled 2 7/8" tbg to 600'. Mixed and pumped 526 sks Class "A" cmt. Cemented to surface. RD Halliburton. ND BOP's and cut 13 3/8" off 5' below ground. Welded plate on top. SDFN.

DAILY REPORT
CENTRAL PRODUCTION REGION
COMPANY OPERATED
December 06, 1993

WORKOVER/RECOMPLETION

Hersey Field

Thompson #3-36

Osceola County, MI

AFE NO: 98832

AFE AMOUNT: \$48,300

CSG: 13 3/8" 45# @ 919'

9 5/8" 435# @ 5500'

5 1/2" 17# @ 8366'

OPERATOR: Marathon Oil

RIG: Beckman #4

MOC/WI: 77.3%

MIRU: 11-08-93

ELEV: GL KB

TD: PBTD:

COST TO DATE: \$81,399

DAY: 15

PRESENT OPERATION: Plug and Abandon

REMARKS: 12/04/93: RD Beckman Rig #4. Dug up seller and filled hole w/sand. Hauled all equipment off location except for 500 bbl Frac tank. Job complete.

NOV 05 1993

THOMPSON 3-36
Section 36-T17N-R9W
Osceola County, Michigan

P & A PROCEDURE

WELL DATA:

13-3/8" 48# csg @ 919'	Cement to surface
9-5/8" 43.5# csg @ 5500'	TOC = 4625'
5-1/2" 17# csg @ 8366'	TOC = 4200'
2-7/8" 6.5# tbg @ 8095'	
Existing perfs @ 8141-44'	

PROCEDURE:

1. Kill well with 10.2 ppg SAB (State Approved Brine). ND tree. NU BOP's.
2. TOH with 2-7/8" tubing.
3. RU wireline company. Run gauge ring and junk basket to 8100'.
Set cement retainer @ 8100'. TIH with tubing and string into cement retainer. Establish injection and pump 50 sx of Class "H" cement. Displace 25 sx into formation, pull out of cement retainer and spot 25 sx above retainer. TOH to 7100' and reverse circulate to clean tubing.
4. With tubing at 7100', spot a 25 sx Class "H" cement plug at 7100-6900' (Across top of A2 Carbonate @ 7041'). TOH to 5600' and reverse circulate to clean tubing.
5. With tubing at 5600', spot a 25 sx Class "A" cement plug at 5600-5400' (Across 9-5/8" csg shoe @ 5500'). TOH to 4500' and reverse circulate to clean tubing. TOH with tubing.
6. RU wireline company. Cut 5-1/2" casing at 4150'. TOH with 5-1/2" casing. (Monitor for NORM and follow casing handling guidelines if NORM is encountered.)
7. Cut 9-5/8" casing at 4125'. TOH with 9-5/8" casing. (Again, monitor for NORM and follow NORM guidelines.)
8. TIH with 2-7/8" tubing to top of 5-1/2" casing stub. Spot a 175 sx Class "A" cement plug at 4150-3900' (Across top of Dundee at 3948'). TOH to 3400' and reverse circulate to clean tubing. TIH to top of cement. Add Bentonite to SAB until funnel viscosity is 28-29. Circulate hole with mud. TOH to 3400'.
9. With tubing at 3400', spot a 150 sx Class "A" cement plug at 3400-3200' (Across top to Traverse at 3303'). TOH to 1650' and reverse circulate to clean tubing.

10. With tubing at 1650', spot a 150 sx Class "A" cement plug at 1650-1450' (Across top os Stray at 1614'). TOH to 1020' and reverse circulate to clean tubing.
11. With tubing at 1020', spot a 150 sx Class "A" cement plug at 1020-820' (Across 13-3/8" csg shoe at 919'). TOH with 2-7/8" tubing.
12. Spot a 25 sx Class "A" cement plug at 30' - surface. Cut casing off 4' below ground level. Weld marker plate over top of casing.

C. A. Paulson

P. E. Legg

NRD 9/27/93

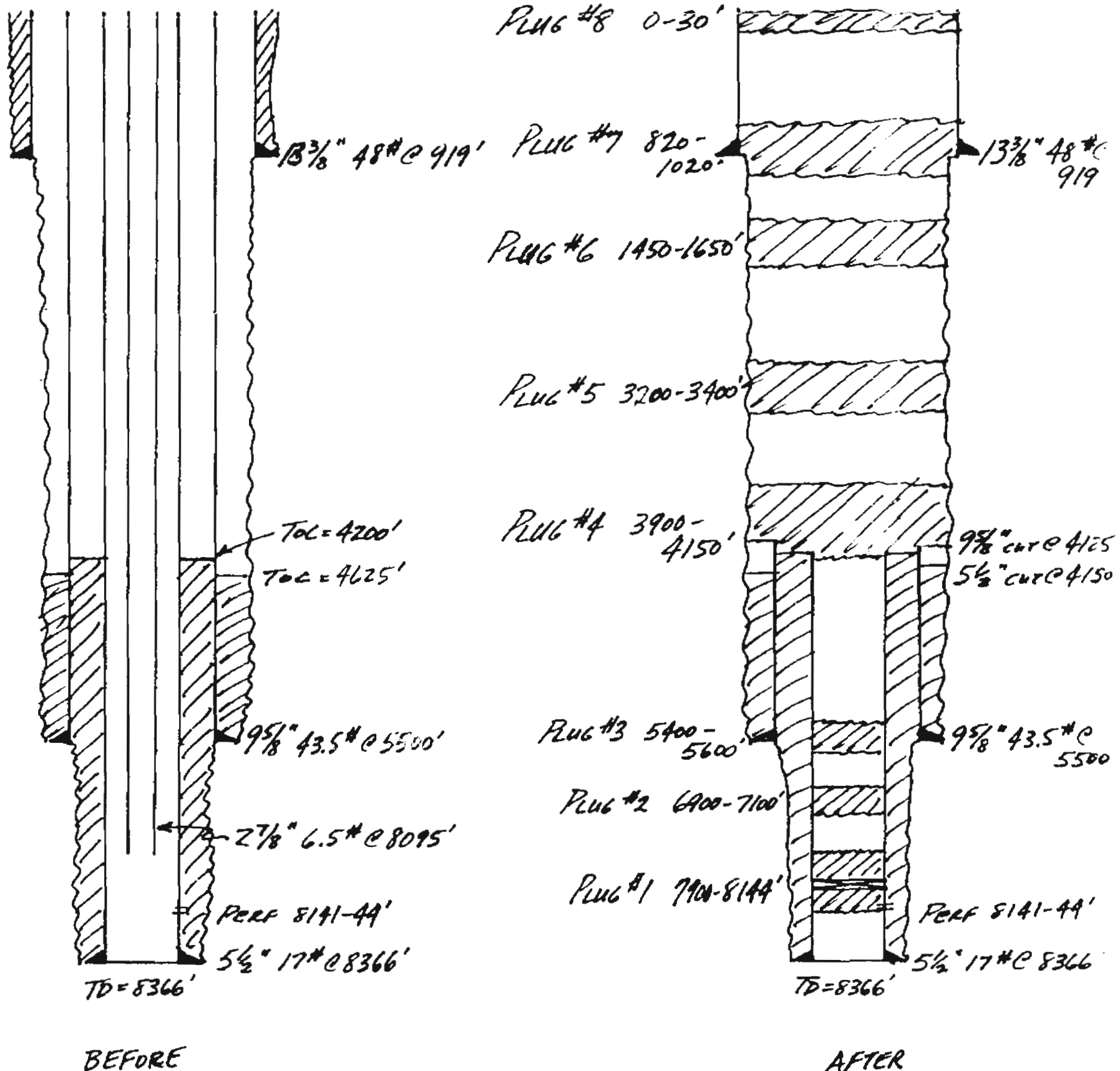
N. R. Daniels, Jr.

MARATHON OIL COMPANY

ENGINEERING CHART

SHEET NO. _____ OF _____
 FILE _____
 APPN _____
 DATE 9-22-93
 BY CA/Hulson

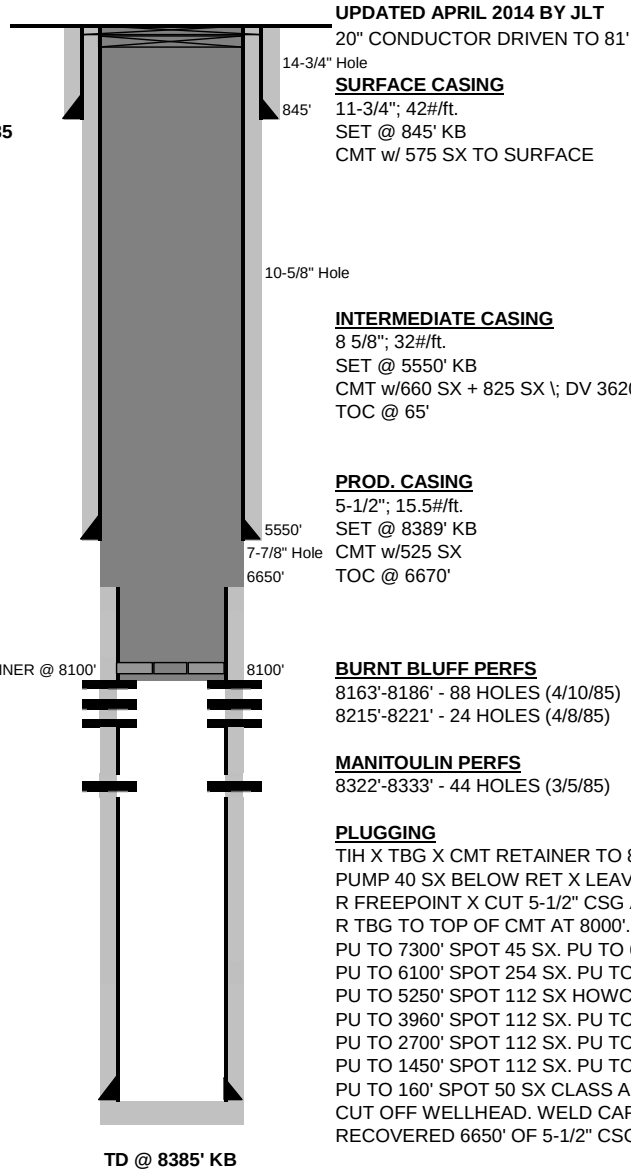
SUBJECT THOMPSON 3-36 (P: A)
36-T17N-R9W OSCOLA Co, MI



CAPACITIES	FT ³ /FT
13 3/8" 48# CSG	.8817
12 1/4" HOLE	.8125
9 5/8" 43.5# CSG	.4180
5 1/2" 17# CSG	.1305
2 7/8" 6.5# TDB	.0325

VUKIN UNIT A 1-19
SW SW SE Sec 19 T17N R8W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

API No. 21-133-38463-0000
 GL @ 1104.4'
 KB @ 1120.4'
 WELL COMPLETION DATE: 2/1/85
 PLUGGING COMPLETION DATE: 4/29/85



VUKIN UNIT A 1-19 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
1/8/1985	SPUD.
3/5/1985	PERFORATED 44 HOLES: 8322'-8333'
4/8/1985	PERFORATED 24 HOLES: 8215'-8221'
4/10/1985	PERFORATED 88 HOLES: 8163'-8186'
2/1/1985	WELL COMPLETED. FORMATION AT TD CINCINNATIAN. 20" CONDUCTOR SET AT 81' 11-3/4" SET AT 845'; 575 SX 8-5/8" SET AT 5550'; 660/825 SX 5-1/2" SET AT 8389'; 525 SX
4/22/1985	PLUGGING STARTED TIH X TBG X CMT RETAINER TO 8100 FT MIX 50 SX CMT X SQUEEZE PERFS. PUMP 40 SX BELOW RET X LEAVE 10 SX ON TOP R FREEPOINT X CUT 5-1/2" CSG AT 6650'. TOH X LD 83 JTS OF 5-1/2" CSG R TBG TO TOP OF CMT AT 8000'. SPOT 45 SX HOWCO LITE PU TO 7300' SPOT 45 SX. PU TO 6600' SPOT 254 SX PU TO 6100' SPOT 254 SX. PU TO 5600' SPOT 100 SX CLASS A PU TO 5250' SPOT 112 SX HOWCO LITE. PU TO 4606' SPOT 112 SX PU TO 3960' SPOT 112 SX. PU TO 3350' SPOT 112 SX PU TO 2700' SPOT 112 SX. PU TO 2060' SPOT 112 SX HOWCO LITE PU TO 1450' SPOT 112 SX. PU TO 810' SPOT 105 SX PU TO 160' SPOT 50 SX CLASS A CUT OFF WELLHEAD. WELD CAP ON 8-5/8" X 11-3/4" RECOVERED 6650' OF 5-1/2" CSG
4/29/1985	PLUGGING COMPLETED

MAY 13 1985

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

PERMIT NUMBER

38463

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Amoco Production Company P. O. Box 1350 Traverse City, MI 49685				NAME & ADDRESS OF DRILLING CONTRACTOR(S) Indril P. O. Box 668 Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Vukin Unit A 1-19						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION SW/4 SW/4 SE/4		SECTION 19		TOWNSHIP 17N		RANGE 8W	
FOOTAGES (North/South) 330 Ft. from South		LINE AND 460		FOOTAGES (East/West) Ft. from West		TOWNSHIP NAME Evart	
SUBSURFACE LOCATION		SECTION		TOWNSHIP		RANGE	
FOOTAGES (North/South)		LINE AND		FOOTAGES (East/West)		TOWNSHIP NAME	
DRILLING BEGUN 1-8-85		TOTAL DEPTH OF WELL Driller 8385 Log 8386		TYPE WELL Dryhole		ELEVATIONS	
DRILLING COMPLETED 2-1-85		FORMATION AT T.D. Cincinnatian		FT. DRLD. - ROTARY TOOLS From 0 To TD		K.B. 1120.4 R.F. 1119.6	
WELL COMPLETED 2-1-85		PRODUCING FORMATION(S) Dryhole		FT. DRLD. - CABLE TOOLS From To		R.T. Grd. 1104.4	

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
20"	81'	Driven					YES	NO
11-3/4"	845'	575 sx		3/5/85	44	8322-8333	X	
8-5/8"	5550'	660/825 sx		4/8/85	24	8215-8221	X	
5-1/2"	8389'	525 sx		4/10/85	88	8163-8186	X	

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
							Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
				SEE ATTACHED								

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
3/8/85	8322-8333	2250 gal 28% NEHCL	Dundee		X	3863	Minimal Amt.
4/10/85	8163-8186	500 gal 28% NEHCL					Est 100 Bbl
4/11/85	8163-8186	2000 gal 28% NEHCL					

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	CNL/LDT	5550-100			SEE ATTACHED				
Birdwell		CNL/LDT	8383-5548							
		DLL/MLL	5550-5540							
		DLL/MLL	8358-5548							

BHC/Sonic 5546-817 Dipmeter 8345-7020
BHC/Sonic 8330-5548 PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH
DryHole						

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE	NAME AND TITLE (PRINT)	SIGNATURE
5/8/85	J. L. Krupka, District Manager	<i>J. L. Krupka</i>

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

MAY 14 1985

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

PERMIT TO PLUG AND ABANDON

38463

FIELD NAME

Hersey Clinton

NAME AND ADDRESS OF PERMITTEE

Amoco Prod. Co.

LEASE NAME AND WELL NO.

Vukin Unit #1-19

SECTION

19

117N 8W

Ewart

TOWNSHIP

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

dry hole

DATE COMPLETED

drlg. 1/31/85

DATE PLUGGING WILL START

4/19/85

PLUGGING PERMIT REQUESTED BY & DATE

Mike Kutas 4/17/85

LAST PRODUCTION

perf 8163-86; only water; "puff" of gas

PLUGGING TO BE DONE BY

Pool / Halliburton

BOD

OWN

MCEGPD

DATE

PERMIT MAILED TO

COPIES MAILED TO

CASING AND CEMENTING RECORD

HOLE DIA	CASING DIA & WT/FT	DEPTH SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT TOP	PERFORATIONS
10-5/8"	20"	80'	DP		
7-7/8"	11-3/4"	845'	650	circled	
	8-5/8"	5550'	660 1st stage; 825 2nd stage DV	3620	65
	5-1/2"	8389'	525	6670	8163-86; 8215-21

WELL FIRST PERFD
3/5/85

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

KB 1120.4

BOD 545

BI 5445

BN 7995

GN 8009

CL 8095

BRT BLF 8165

MAN 8302

TD 8389

Perfs: 8322-33 squeezed w/4 bbls. cmt.
Rtnr. at 8289'.

PLUGGING REQUIREMENTS*

*Plugging requirements outlined are to be executed in accordance with the provisions of Act 81, P.A. 1939, as amended, and rules and orders adopted thereunder.

Set 5-1/2" cmt. retainer at 8100'; squeeze 40 sx Cl H cmt. Spot 10 sx on top rtnr. Cut and pull 5-1/2" csg. at 6670'+. RIH w/tubg. to stub. Spot continuous cmt. plugs using lite poz., stub to just below surf. Spot 50 sx Cl A cmt. at surf. Cut csqs. 3' below grade. Weld on 1/2" steel plate. Fill cellar, rat & mouse holes solidly to surf.

*NOTE: BONDS CANNOT BE
PLUGGED ACCORDING TO R
with in accordance with /SARIED UNTIL A PLUGGING IS COMPLETED. CELLAR RAT HOLE AND PITS FILLED. WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE
188 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public
53, P.A. 1974 G.L. 460 701 to 460 718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

OFFICE

Cadillac D#6

DATE

5/3/85

NOTE: WELL PLUGGING RECORD Form R-7223 to be filed in triplicate within 30 days after completion

R-7223
Rev. 11/77

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

CADILLAC HAS COPY

MAY 16 1985

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER

38463

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

Amoco Production Company, P. O. Box 1350, Traverse City, MI 49685

COMPLETE LEASE OR FARM NAME(S)

Vukin Unit A

WELL NUMBER

1-19

WELL LOCATION

SW 1/4 SW 1/4 SE 1/4 SEC. 19 T. 17N R. 8W

TOWNSHIP

Evart

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dryhole

TOTAL DEPTH

8386

FORMATION

Cincinnatian

DATE PLUGGING STARTED

4/22/85

DATE PLUGGING COMPLETED

4/29/85

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Not Available

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
20"	81'		
11-3/4"	845'		
8-5/8"	5550'		
5-1/2"	8389'	6650'	

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Numerous Cement Plugs		
See details described below		

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton - Kalkaska

Was the well plugged by a Company or Contractor other than Owner or Operator?

☒ YES ☐ NO

If yes, give name and address:

Halliburton - Kalkaska

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

R. A. Abrahamson - Amoco

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

1. TIH X TBG X CMT RETAINER TO 8100 Ft.
2. MIX 50 SX CMT X SQUEEZE PERFS. PUMP 40 SX BELOW RET X LEAVE 10 SX ON TOP.
3. R FREEPOINT X CUT 5-1/2" CSG AT 6650'. TOH X LD 83 JTS OF 5-1/2" CSG.
4. R TBG TO TOP OF CMT AT 8000 FT. SPOT 45 SX HOWCO LITE.
5. PU TO 7300 FT. SPOT 45 SX. PU TO 6600 Ft. SPOT 254 SX.
6. PU TO 6100 FT. SPOT 254 SX. PU TO 5600 FT. SPOT 100 SX CLASS A.
7. PU TO 5250 FT. SPOT 112 SX HOWCO LITE. PU TO 4606 FT. SPOT 112 SX.
8. PU TO 3960 FT. SPOT 112 SX. PU TO 3350 FT. SPOT 112 SX.
9. PU TO 2700 FT. SPOT 112 SX. PU TO 2060 FT. SPOT 112 SX HOWCO LITE.
10. PU TO 1450 FT. SPOT 112 SX. PU TO 810', SPOT 105 SX.
11. PU TO 160 FT. SPOT 50 SX CLASS A.
12. CUT OFF WELLHEAD. WELD CAP ON 8-5/8" X 11-3/4".

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

J. L. Krupka, District Manager

COMPANY NAME AND ADDRESS

Amoco Production Company
P. O. Box 1350
Traverse City, MI 49685

SIGNATURE

DATE (Month, Day, Year)

5/8/85

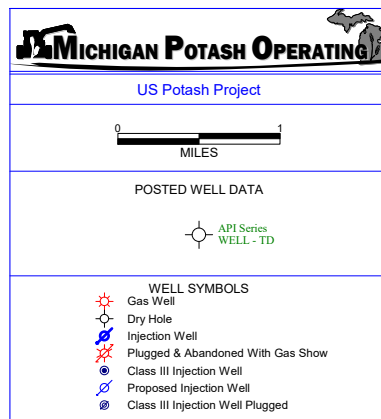
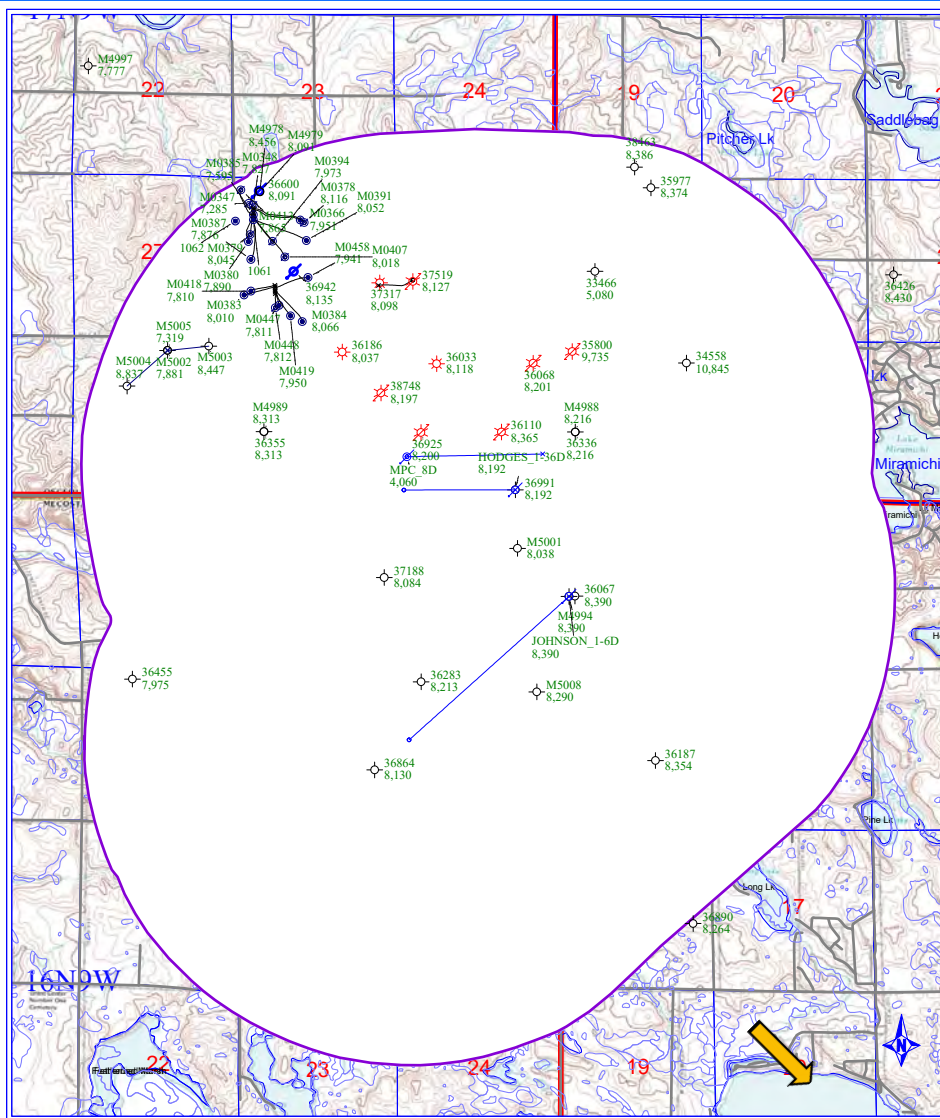
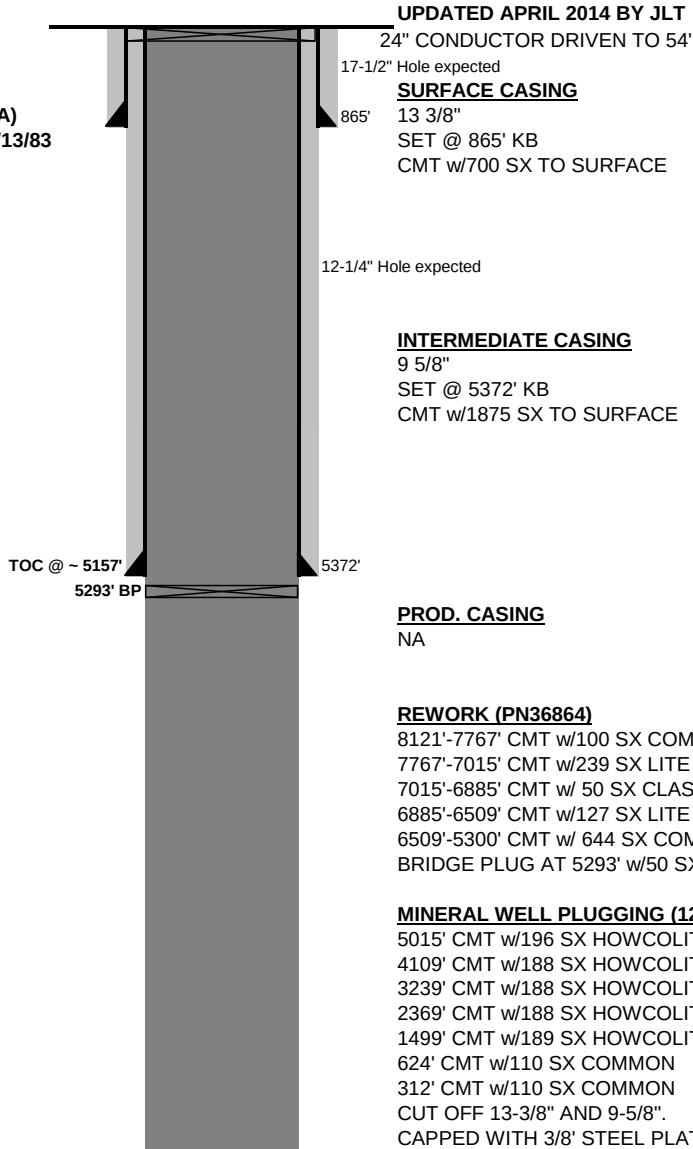


Figure A8. Map showing the wells that penetrate the confining zone in the AOR.

WARD 1-11
C NE NE Sec 11 T16N R9W
MECOSTA COUNTY, MI
CURRENT WELLBORE DIAGRAM

API No. 21-107-36864-0000
GL @ 1140'
KB @ 1154.2'
COMPLETION DATE: DRY HOLE (NA)
PLUGGING COMPLETION DATE: 9/13/83



TD @ 8121' KB

WARD 1-11 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
7/28/1983	SPUD.
9/11/1983	DRILLING COMPLETED. FORMATION COMPLETED IN CINCINNATIAN. 24" CONDUCTOR SET AT 54' 13 3/8" SET AT 865'; 700 SX 9 5/8" SET AT 5372'; 1875 SX
9/12/1983	REWORK START DATE (PN36864) RAN IN AND SET 110 SX FROM 8121' TO 7767'. PULLED UP AND SPOTTED 239 SX FROM 7767'-7015'. SPOTTED 50 SX FROM 7015'-6885'. PULLED UP AND SPOTTED 127 SX FROM 6885'-6509' PULLED UP AND SPOTTED 644 SX FROM 6509'-5300'. SET BRIDGE PLUG AT 5293' AND SPOTTED 50 SX ON TOP (TOC @ ~5157')
9/13/1983	REWORK COMPLETED (PN36864).
9/12/1983	PLUGGING START DATE (1200-821-354) RAN IN WITH 2-7/8" TUBING, TAGGED CEMENT AT 5018'. CIRCULATED OUT MUD, HALLIBURTON SPOTTED HOWCOLITE PLUGS: 5015' CMT w/196 SX HOWCOLITE 4109' CMT w/188 SX HOWCOLITE 3239' CMT w/188 SX HOWCOLITE 2369' CMT w/188 SX HOWCOLITE 1499' CMT w/189 SX HOWCOLITE 624' CMT w/110 SX COMMON 312' CMT w/110 SX COMMON CUT OFF 13-3/8" AND 9-5/8". CAPPED WITH 3/8" STEEL PLATE
9/13/1983	PLUGGING COMPLETED (1200-821-354)

NOV 03 1983

LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)

Submit in DUPLICATE Within 30 Days after Well Completion

PERMIT NUMBER

36864

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT PPG Oil & Gas Co., Inc. 2258 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) Bigard Drilling Company 1315 S. Mission Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Ward #1-11				DIRECTIONALLY DRILLED YES ☐ NO ☒			
SURFACE LOCATION C NE SE		SECTION 11	TOWNSHIP 16N	RANGE 9W	TOWNSHIP NAME Grant		
FOOTAGES (North/South) 630 Ft. from North		Line and 617		Ft. from East		COUNTY NAME Mecosta	
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME		
FOOTAGES (North/South)		Line and		Ft. from		COUNTY NAME	
Line of quarter section							
DATE	DRILLING BEGUN 7-28-83		TOTAL DEPTH OF WELL Driller 8121 Log 8130		TYPE WELL Dry Hole		
	DRILLING COMPLETED 9-11-83		FORMATION AT T.D. Cincinnatian		FT. DRLD. - ROTARY TOOLS From 0 To 8130		
	WELL COMPLETED		PRODUCING FORMATION(S) None		FT. DRLD. - CABLE TOOLS From To		
					ELEVATIONS K.B. 1154.2 R.F. 1152.3 R.T. Grd. 1140.2		

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
24"	54'						YES	NO
13 3/8"	865'	700 Sx				None		
9 5/8"	1875 Sx							

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
None							Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
				Burnt Bluff	Gas	7960					X	
				A2 Carbonate	Gas	6910	X	X			X	
				Antrim	Gas	3150					X	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	None		None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	XX	LDT-CNL-GR	200-8130			1700	1/2°			
Birdwell		DLL-MLL	2900-8130			4500	1 1/2°			
		NGT	200-8130			6060	1/2°			
		BHC-Sonic	200-8130			7320	1°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE	NAME AND TITLE (PRINT)	SIGNATURE
10-17-83	William E. Barker, Geologist	William E. Barker

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R 7210
Rev. 3/77

DEPARTMENT OF NATURAL RESOURCES
Geological Survey Division

REQUEST FOR CHANGE OF OWNERSHIP OF A PERMIT
(Submit all copies)

Please Change:

Permit No. 36864 Type Well Oil & Gas Field Name Exploratory
~~Hersey-Evart~~

Owned by PPG Oil & Gas Co., Inc.

Address 2258 Enterprise Drive, Mt. Pleasant, MI 48858 (517) 773-3949
(street) (town) (state) (zip) (phone)

for Ward No. 1-11 located in the C 1/4 NE 1/4 SE 1/4

section 11, T. 16N, R. 9W, Grant Township, Mecosta County,

to PPG Industries, Inc.

(acquiring owner-complete names please)

All operating rights are discharged by (us) (me).

(Owner)

(Representative)

(Signature)

(Date)

PPG Oil & Gas Co., Inc.-Donald D. Metzger

Donald D. Metzger 4-17-84

THE SUPERVISOR IS PROHIBITED BY STATUTE FROM ISSUING A PERMIT TO ANY PERSON WHO IS NOT IN COMPLIANCE WITH THE PROVISIONS OF THE ACT, THE RULES, OR THE ORDERS OF EITHER THE SUPERVISOR OR THE NATURAL RESOURCES COMMISSION. ELIGIBILITY FOR PERMITS IS CONDITIONED ON COMPLIANCE WITH SUCH RULES AND ORDERS IN A DILIGENT MANNER AND IN ACCORDANCE WITH ACCEPTED OIL FIELD PRACTICE.

(We) (I) have acquired the well under this permit and assume full responsibility for drilling, operation, and abandonment in conformity with the law, regulations and orders issued by the Supervisor of Wells. The bond(s) required is attached or already on file.

PPG Industries, Inc.

(acquiring owner-complete names please)

Address 2258 Enterprise Drive, Mt. Pleasant, MI 48858 (517) 773-3949
(street) (town) (state) (zip) (phone)

All operating rights and responsibilities are assumed by (us) (me).

(Owner)

(Representative)

(Signature)

(Date)

PPG Industries, Inc. - Donald D. Metzger

Donald D. Metzger 4-17-84

THE DEPARTMENT OF NATURAL RESOURCES

Approved.

Stephen J. Szymanski
(Signature)

4/20/84
(Date)

DNR USE ONLY

White, Lansing
Yellow, Acquiring Owner
Pink, Selling Owner
Blue, Field

R-7214 (Rev. 10-79)

JOB LOG

WELL NO. 1-11 LEASE Ward

TICKET NO. 582870

CUSTOMER PPG Oil & Gas

PAGE NO. 1 of 2

JOB TYPE P+A

DATE 9/12/83

FORM 2013 R-2

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	DP	TUBING	CASING	
					DP			Shower on loc.
								Safety meeting & set-up
1			0	1				1st plug @ 8121' to 7748' 110 sho
1			25	1				Start FW ahead
1			0	1				Finish FW ahead
1			23.2	1				Start mixing Cmt (CIA)
1			7.0	1				Finish Mixing Cmt (CIA)
1			0	1				FW Behind
1			103.0	1				Start Disp w/ Mud
1				1				Finish Disp w/ Mud
1			0	1				2nd plug @ 7767' to 7015'
1			10	1				Start FW ahead
1			0	1				Finish FW ahead
1			83.9	1				Start mixing Cmt (lite)
1			2.8	1				Finish mixing Cmt (lite)
1			0	1				FW Behind
1			96.9	1				Start Disp w/ Mud
1				1				Finish Disp w/ Mud
1			0	1				3rd plug @ 7015 to 6885'
1			10	1				Start FW ahead
1			0	1				Finish FW ahead
1			10.5	1				Start mixing Cmt (CIA)
1			2.8	1				Finish mixing Cmt (CIA)
1			0	1				FW Behind
1			95.1	1				Start Disp w/ Mud
1				1				Finish Disp w/ Mud
1			0	1				4th plug @ 6885' to 6509'
1			10	1				FW ahead
1			0	1				Finish FW ahead
1			44.6	1				Mix Cmt - lite
1			2.8	1				Finish Cmt
1				1				FW Behind

Cont. on next page

JOB LOG

WELL NO.

1-11

LEASE

Ward

TICKET NO.

582870

CUSTOMER

PPG Oil & Gas

PAGE NO.

2 of 2

JOB TYPE

P+A

DATE

4/12/83

FORM 2012 R-2

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	DP	TUBING	CASING	
					DP			Cont From 1st page 4th plug
								Start Disp w/ Mud
								Finish Disp w/ Mud
1				1				5th plug @ 6509' to 5300'
1			0	1				Start FW ahead
1			10	1				Finish FW ahead
1			0	1				Start Cmt (CIA)
1			135.3	1				Finish Cmt (CIA)
1			2.8	1				FW Behind
1			0	1				Start Disp w/ Mud
1			72.6	1				Finish Disp w/ Mud
2			25	1				BREAK Circulation
			0					START FW AHEAD
2			15	1				FW F.W. AHEAD
			0					START LAST Plug 5070' Cmt
2			10.5	1				Finish Plug
			0					FW Spacers START
2			3.5	1				FW Spacers Finish
			0					START Disp w/ Mud
2			69	1				Finish Disp w/ Mud
								Release Psi
								Lines Released.

CUSTOMER

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

NOV 07 1983

LANSING HAS COPY

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER

36864

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

Ward

WELL NUMBER

1-11

WELL LOCATION

C ¼ NE ¼ SE ¼ SEC. 11 T. 16N R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

TOTAL DEPTH

8130

FORMATION

Cincinnatian

DATE PLUGGING STARTED

9-12-83

DATE PLUGGING COMPLETED

9-13-83

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Todd

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
24"	54'		
13 3/8"	865'		
9 5/8"	5372'		

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8121-7767	100 Sx Common
Cement	7767-7015	239 Sx Lite
Cement	7015-6885	50 Sx Class A
Cement	6885-6509	127 Sx Lite
Cement	6509-5300	644 Sx Common
Bridge Plug	5293	50 Sx on Top

TX ≈ 5157'

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging: Chet Lowery

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran in and set 110 sx from 8121 to 7767, pulled up and spotted 239 sx from 7767 to 7015, pulled up and spotted 50 sx from 7015-6885, pulled up and spotted 127 sx from 6885 to 6509, pulled up and spotted 644 sx from 6509 to 5300. Set bridge plug at 5293 and spotted 50 sx on top.

GEOLOGICAL SURVEY

OCT 15 1993

Permit & Bonding Unit

GEOLOGICAL SURVEY
NOV 3 1983

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

COMPANY NAME AND ADDRESS

STRICKLER GEOLOGICAL SERVICES, INC.

1425 S. Mission

Mt. Pleasant, MI 48858

SIGNATURE

William E. Booker

DATE (Month, Day, Year)

10-17-83

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE

DIVISION

DATE _____

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

36864 Act 61

PERMIT NUMBER
1200-821-354

DATE
2-1-88

GEOLOGICAL SURVEY
Permits & Bonding

OWNER OR OPERATOR
PPG Industries, Inc.

ADDRESS
One PPG Place, Pittsburgh, PA 15272

WELL NAME
Ward

WELL NUMBER
1-11

WELL LOCATION
C 1/4 NE 1/4 SE 1/4 SEC. 11 T. 16N R. 9W

TOWNSHIP
Grant

COUNTY
Macosta

TYPE OF WELL (Brine, Disposal, Storage, or Test)
Dry Hole

TOTAL DEPTH
8130

FORMATION
Cincinnatian

DATE PLUGGING STARTED
9-12-83

DATE PLUGGING COMPLETED
9-13-83

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN? ☒ YES ☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	54'			Cement (Howcolite)	5015'	196 sx
13 3/8"	865'			Cement (")	4109'	188 sx
9 5/8"	5372'			Cement (")	3239'	188 sx
				Cement (")	2369'	188 sx
				Cement (")	1499'	189 sx
				Cement (common)	624'	110 sx
				Cement (")	312'	110 sx

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran in with 2 7/8" tubing, tagged cement at 5018',
circulated out mud, Halliburton spotted Howcolite plugs: 196 sx at 5015',
188 sx at 4109', 188 sx at 3239', 188 sx at 2369', and 189 sx at 1499'.
Halliburton spotted 110 sx common cement at 624' and 110 sx common cement at
312'. Cut off 13 3/8" and 9 5/8". Capped with 3/8" steel plate.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging? ☐ YES ☒ NO If yes, give details:

Did a Service Company pump mud,
spot cement, or set bridge plugs? ☒ YES ☐ NO If yes, give name and address:
Halliburton, Mt. Pleasant, MI

Was the well plugged by a Company or
Contractor other than Owner or Operator? ☐ YES ☒ NO If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

CERTIFICATE
of Kalium Chemicals (company,
state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction
and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE
Donald D. Metzger

ADDRESS
11126 140th Ave., Hersey, MI

TITLE
Resident Manager

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

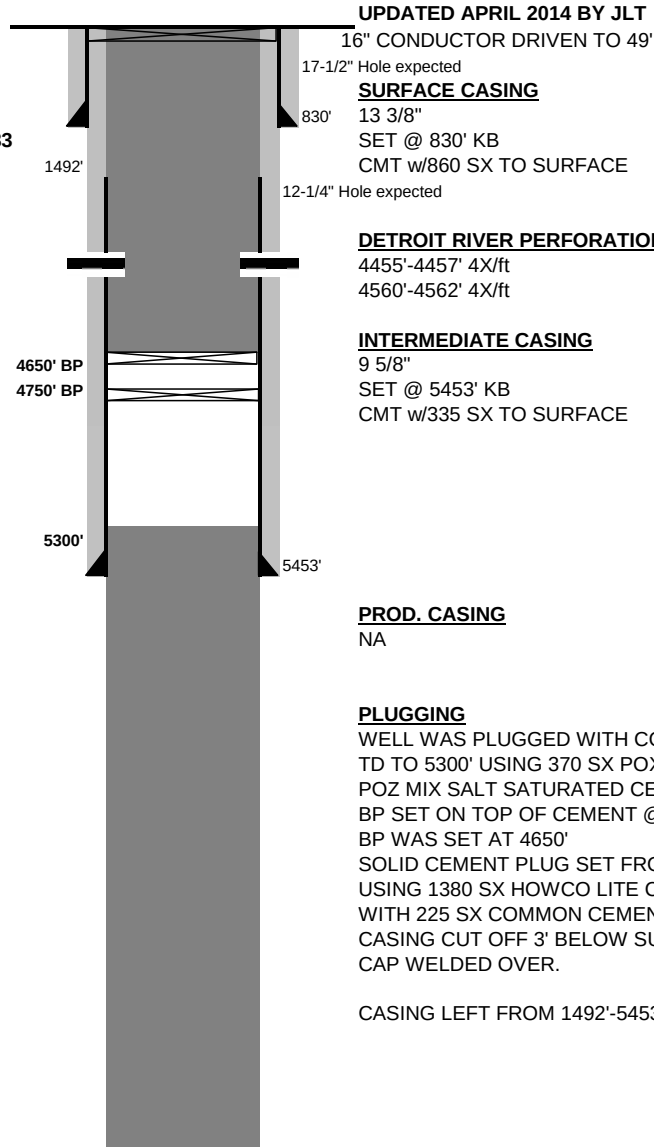
OPERATORS USE

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

WARK 1-30
NE NW NE Sec 30 T17N R8W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

API No. 21-133-35977-0000
GL @ 1100'
KB @ 1116.2'
COMPLETION DATE: DRY HOLE (NA)
PLUGGING COMPLETION DATE: 9/13/83



UPDATED APRIL 2014 BY JLT

16" CONDUCTOR DRIVEN TO 49'

17-1/2" Hole expected

SURFACE CASING

13 3/8"

SET @ 830' KB

CMT w/860 SX TO SURFACE

12-1/4" Hole expected

DETROIT RIVER PERFORATIONS:

4455'-4457' 4X/ft

4560'-4562' 4X/ft

INTERMEDIATE CASING

9 5/8"

SET @ 5453' KB

CMT w/335 SX TO SURFACE

PROD. CASING

NA

PLUGGING

WELL WAS PLUGGED WITH CONTINUOUS CEMENT PLUG FROM TD TO 5300' USING 370 SX POX MIN 16% GEL .78% HK-7 + 265 SX POZ MIX SALT SATURATED CEMENT
BP SET ON TOP OF CEMENT @ 4750'
BP WAS SET AT 4650'
SOLID CEMENT PLUG SET FROM 4650' TO SURFACE
USING 1380 SX HOWCO LITE CEMENT
WITH 225 SX COMMON CEMENT ON TOP.
CASING CUT OFF 3' BELOW SURFACE AND
CAP WELDED OVER.

CASING LEFT FROM 1492'-5453'

TD @ 8371' KB

WARK 1-30 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
8/13/1982	SPUD.
9/13/1982	DRILLING COMPLETED. FORMATION COMPLETED IN CINCINNATIAN. 16" CONDUCTOR SET AT 49' 13 3/8" SET AT 830'; 860 SX 9 5/8" SET AT 5453'; 335 SX
9/16/1982	PERFORATIONS AT 4455'-4457' AND 4560'-4562' (4X/ft) PLUGGING STARTED WELL WAS PLUGGED WITH CONTINUOUS CEMENT PLUG FROM TD TO 5300' USING 370 SX POX MIN 16% GEL .78% HK-7 + 265 SX POZ MIX SALT SATURATED CEMENT BP SET ON TOP OF CEMENT @ 4750' BP WAS SET AT 4650' SOLID CEMENT PLUG SET FROM 4650' TO SURFACE USING 1380 SX HOWCO LITE CEMENT WITH 225 SX COMMON CEMENT ON TOP. CASING CUT OFF 3' BELOW SURFACE AND CAP WELDED OVER. CASING LEFT FROM 1492'-5453' PLUGGING COMPLETED.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in **DUPLICATE** Within 30 Days after Well Completion

OCT 21 1982

PERMIT NUMBER

35977

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Willmet, Inc. 2250 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) T. D. Provins Drilling Company 2113 Enterprise Drive Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Wark #1-30						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NE NW NE		SECTION 30	TOWNSHIP 17N	RANGE 8W	TOWNSHIP NAME Evart		
FOOTAGES (North/South) 330 Ft. from North		LINE AND 983		FOOTAGES (East/West) Ft. from West		COUNTY NAME Osceola	
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME		
FOOTAGES (North/South)		LINE AND		FOOTAGES (East/West)		COUNTY NAME	
Ft. from		Line of quarter section		Ft. from		Line of quarter section	
DATE	DRILLING BEGUN 8-13-82		TOTAL DEPTH OF WELL Driller 8371 Log 8374		TYPE WELL Dry Hole		ELEVATIONS
	DRILLING COMPLETED 9-13-82		FORMATION AT T.D. Cincinnatian		FT. DRLD. - ROTARY TOOLS From 0 To 8374		
	WELL COMPLETED		PRODUCING FORMATION(S) None		FT. DRLD. - CABLE TOOLS From To		
					K.B.	R.F.	
					1116.2	1115	
					R.T.	Grd.	1100

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
16"	49		--				YES	NO
13 3/8"	830	860 Sx	--	9-16-82	4x/ft.	4455 - 57 &	X	
9 5/8"	5453	335 Sx	--			4560 - 62		

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)				
None							Sam- ples	Odor	Pits	Mud Line	Gas Log
				Reed City	Gas	3933					
				Sour Zone	Gas	4523					
				Manitoulin	Gas	8320					XX

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
9-16-82	4455 - 62	500 gal. 20% HCL	None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	LDT-CNL-GR	200-8374			2054	3/4°			
Birdwell		Sonic	200-8374			4348	1°			
		DLL-MLL	200-8374			5882	1/2°			
						7591	1°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE 10-11-82	NAME AND TITLE (PRINT) William E. Booker, Geologist	SIGNATURE <i>William E. Booker</i>
------------------	--	---------------------------------------

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER

35977

FIELD NAME

OCT 04 1982

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

Willmet, Inc., 2250 Enterprise Dr., Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

Wark

WELL NUMBER

1-30

WELL LOCATION

NE ¼ NW ¼ NE ¼ SEC. 30 T. 17N R. 8W

TOWNSHIP

Evart

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry hole

TOTAL DEPTH

8375

FORMATION

Cincinnatian

DATE PLUGGING STARTED

8-12-82

DATE PLUGGING COMPLETED

8-21-82

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Jack Snider

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
24"	49'	nil	---
13 3/8"	832'	nil	nil
9 5/8"	5,453'	1,492'	shot

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	TD-5300	635 sacks
B.P.	4750	Permanent
B.P.	4650	Permanent
Cement	4650-Surface	1380 sacks

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☒ YES ☐ NO

If yes, give details:

Casing left from 1492'-5453'

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton Cementing
Baker Tools

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Chet Lowery

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Well was plugged with continuous cement plug from T. D. to 5,300' using 370 sacks Poz. min. 16% gel .78% HK-7 plus 265 sacks Poz. mix salt saturated cement. A Baker permanent type B. P. was set on top of cement at 4750'. A Baker permanent type B. P. was set at 4650'. Solid cement plug set from 4650' to surface using 1380 sacks HOWCO lite cement with 225 sacks, common cement on top. Casing cut off 3' below surface and cap welded over.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

Donald Smith, Exploration Engineer

COMPANY NAME AND ADDRESS

Willmet, Inc.
2250 Enterprise Dr.
Mt. Pleasant, MI 48858

SIGNATURE

[Signature]

DATE (Month, Day, Year)

Sept 30/82

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

5/9/83 site is clean and recontoured, except for a pile of soil. Landowner came by and said that he asked that the pile of topsoil be left for his use and seemed satisfied with the restoration; can recommend approval. (M. Moss)

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE

DIVISION

DATE _____

Michael J. Russo

5/9/83

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

OCT 2 1 1982

LANSING HAS COPY

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

PERMIT NUMBER

35977

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

Willmet, Inc., 2250 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

Wark

WELL NUMBER

1-30

WELL LOCATION

NE ¼

NW ¼

NE ¼ SEC. 30

T. 17N

R. 8W

TOWNSHIP

Evart

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

TOTAL DEPTH

8327

FORMATION

Cincinnatian

DATE PLUGGING STARTED

9-14-82

DATE PLUGGING COMPLETED

9-17-82

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Michael Moss

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
16"	49		
13 13/8"	830	860 Sx	---
9 5/8"	5453	335 Sx	1492

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8374 to 4750	635 Sx
Baker Perm B.P.	4750	---
Baker Perm B.P.	4650	---
Cement	4650-Surface	1600 Sx

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Hailliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Marvin Woods

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED Circulated cement from total depth to 4750 and went in and set bridge plug in cement at 4750. Used 370 sx poz with 16% gel and 265 sx poz mix, salt saturated, attempted to complete Detroit River Sour - perf 4455 - 4462, negative results. Cut 9 5/8" at 1492. - set bridge plug at 4650 and circulated to surface using 1380 sx Howco Lite and 220 sx Class A casing cut 3' below surface and capped.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

COMPANY NAME AND ADDRESS

Strickler Geological Services, Inc.
1425 S. Mission Street
Mt. Pleasant, MI 48858

SIGNATURE

William E. Booker

DATE (Month, Day, Year)

10-11-82

**STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION**

PERMIT TO PLUG AND ABANDON

PERMIT DISTRIBUTION

Permittee — Orig & 1 copy
Division Office — 2 copies
Field Office — 1 file copy
Others — On request

PERMIT NUMBER

35977

FIELD NAME

NAME AND ADDRESS OF PERMITTEE

Willmet, Inc.

LEASE NAME AND WELL NO

Wark #1-30

LOCATION (T, R, or other)

NE NW NE

SECTION

30

T 17N R 8W

TOWNSHIP

Osceola, Evart

COUNTY

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry hole

DATE COMPLETED

8/12/82

DATE PLUGGING WILL START

8/12/82

PLUGGING PERMIT REQUESTED BY & DATE

Don Smith 8/12/82

LAST PRODUCTION

BWPD

BWPD

MCFGPD

DATE

PLUGGING TO BE DONE BY

Halliburton

PERMIT MAILED TO

Willmet, Inc.
2250 Enterprise
Mt. Pleasant, MI 48858

COPIES MAILED TO

CASING AND CEMENTING RECORD

PIPE DIA	CASING DIA. & WT / FT	DEPTH SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT TOP	PERFORATIONS
24"		49	DP		
	133/8"	832	860	circ	
	95/8"	5453	335	4220	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

CONFIDENTIAL

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder.

Previously plugged back w/continuous cmt. plug from TD to 5300' and BP at 4750' and tested 4655-4662'. Set permanent BP at 4650'. Rip and pull 95/8". Run tubg. to 4650' and spot continuous cmt. plug to surface. Cut 113/4" and 24" 3' below surf. and weld 1/2" steel plate.

*NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965. GROUND WATER QUALITY CONTROL: It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 460 701 to 460 718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

OFFICE

Cadillac D#6

DATE 10/6/82

*NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion.

H-7229
Rev. 11/77

This document paid for with State funds

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
SUPERVISOR OF WELLS

FEB 11 1983
LANSING HAS COPY

WELL REWORK RECORD

FILE IN DUPLICATE WITHIN 30 DAYS AFTER COMPLETION OF REWORK OR DEEPENING
(Replaces GS 38)

PERMIT NUMBER 35977	DEEPENING PERMIT NUMBER	FIELD NAME Wildcat
NAME AND ADDRESS OF WELL OWNER Willmet, Inc., 2250 Enterprise Drive, Mt. Pleasant, MI 48858		
LEASE OR FARM NAME Wark		WELL NUMBER 1-30
WELL LOCATION NE NW NE	SECTION 30	T. 17N R. 8W TOWNSHIP Evart
		COUNTY Osceola
WELL COMPLETED FOR (Oil, Gas, Gas Storage, Brine Disposal, Water Injection, etc.) Dry Hole	TOTAL DEPTH AFTER REWORK 4750	MECHANICAL LOGS RUN NO ADDITIONAL LOGS
WELL COMPLETED IN (Name Rock Formation and Zone of Completion) Dry Hole in Sour Zone	DATE REWORK COMMENCED 9-17-82	DATE REWORK COMPLETED 9-19-82
NAME AND ADDRESS OF CONTRACTOR T. D. Provins, 2113 Enterprise Drive, Mt. Pleasant, MI 48858		

WELL CASING RECORD - BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture Treatment Record	Perforations If plugged, how?
Size	Depth	Sacks	Type	From	To		
16"	49'						
13 3/8"	830'	860	200 C1 A	660	POZ		
9 5/8"	5453'	335	C1 A				

WELL CASING RECORD - AFTER REWORK (Indicate additions and changes only)

Casing		Cement		Perforations		Acid or Fracture Treatment Record	Perforations If plugged, how?
Size	Depth	Sacks	Type	From	To		
9 5/8"	5453	335	4x/ft	4455	4457	500 gal. 20% HCL	
			"	4560	4562		

DESCRIBE REWORK OPERATIONS IN DETAIL

Run in and circulated cement from TD to 4750, Set bridge plug at approximately 4750. Perforated from 4455-57 and 4560-62, swabbed back 50 bbls load water and 30 bbls. formation water. Ran in and set bridge plug at 4650 and circulated cement to surface (1380 sx).

IMPORTANT! SEE REVERSE SIDE

GEOLOGICAL FORMATION RECORD OF DEEPENING

FROM	TO	FORMATION (type, color, hardness)	FROM	TO	FORMATION (type, color, hardness)

DAILY PRODUCTION TEST RECORD

DAILY INJECTION TEST RECORD IF INJECTION WELL (OR BDW)

[illegible]

SIGNATURE (Well Owner or Authorized Representative)

ADDRESS (If different than well owner)

DATE (Month, Day, Year)

1425 S. Mission
Mt. Pleasant, MI 48858

1-20-83

NOTE: IF GAS WELL, RECORD FLOW TEST UNDER "DAILY PRODUCTION TEST RECORD"

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

LAWS 1746
OCT 04 1982
lfc

OCT 07 1982

LEAVE BLANK
DEEPENING PERMIT NUMBER
DATE ISSUED

APPLICATION
TO

CHANGE WELL STATUS
(SUBMIT IN QUADRUPLICATE)

PERMIT NUMBER 35977

FIELD NAME

NAME AND ADDRESS OF WELL OWNER Willmet, Inc., 2250 Enterprise Dr., Mt. Pleasant, MI 48858			
LEASE OR FARM NAME Wark		WELL NUMBER 1-30	
WELL LOCATION NE 1/4 of NW 1/4 of NE 1/4	SECTION 30	TOWNSHIP T. 17N R. 8W	COUNTY Osceola
(Deepen, Plug Back, Convert to Injection or Disposal Well, Temporarily Abandon, etc.)			
APPROVAL REQUESTED TO Plug back			
DATE DRILLING COMPLETED 8-12-82	DATE LAST PRODUCED	LAST PRODUCTION (Amt/day) OIL, WTR., M.C.F. GAS	
WORK TO BE DONE BY			WILL START (DATE) 8-16-82

CASING AND CEMENTING RECORD			
SIZE CASING	DEPTH SET	NO. SACKS CEMENT	PERFORATIONS
24"	49'	driven	
13 3/8"	832'	cement to surface	
9 5/8"	5,453'	cement top, 4220'	

FORMATION RECORD
(Formation and depth, Oil, Gas & Wtr. shows, etc.)

DESCRIBE PROPOSED WORK IN DETAIL:

Continuous cement plug from T. D. 8375' to 5300'. Plug consists of 370 sacks Poz. min. 16% gel .78% HK-7 plus 265 sacks Poz. mix salt saturated cement. A Baker permanent type B. P. was set on top of cement at 4750'. A Baker permanent type B. P. was set at 4650'. Solid cement plug set from 4650' to surface using 1380 sacks HOWCO lite cement with 225 sacks, common cement on top. Casing cut off 3' below surface and cap welded over.

*Perf. 4655-57 and 4660-62 at 4 spf and test these zones before completing plugging.

The proposed work as outlined above and approved by the Supervisor or his Authorized Representative will be executed in accordance with the provisions of Act 61, P.A. 1939 and the rules and regulations issued and adopted thereunder.

SIGNATURE (Well Owner or Authorized Representative)

DATE

APPROVED BY

FIELD OFFICE

DATE

NOTE: WELL WORK RECORD, Form R-7212, is to be filled in DUPLICATE within 30 days after completion.

R 7237 3/73

**APPLICATION FOR PERMIT TO DRILL OR DEEPEN
A WELL FOR OIL, GAS, BRINE DISPOSAL,
HYDROCARBON STORAGE OR SECONDARY RECOVERY**

Under Authority of Act 61, P.A. of 1939, As Amended

MAIL TO:
STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
30028, Lansing, Michigan 48909

R 7207
Rev. 9/79

AUG 3 1982

1. SEE INSTRUCTIONS ON REVERSE SIDE

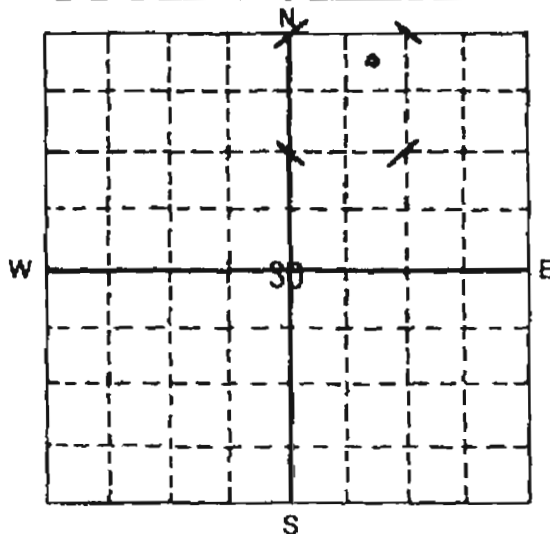
3. Application for permit to drill for:
☒ Oil and Gas ☐ Brine Disposal ☐ Hydrocarbon Storage ☐ Secondary Recovery
4. Application to: (no fee required)
☐ Deepen ☐ Revise Application ☐ Cancel and Transfer
5. Fee enclosed:
☐ No ☒ Yes \$100.00

6. Do prior permits exist for this well?
☐ No ☒ Yes ☐ Drilled ☐ Termin'd

7. List each permit number

Mineral Well Act #10029

LOCATE WELL AND OUTLINE UNIT
ON SECTION PLAT — 640 ACRES



8. Applicant: (name each "owner" as they are bonded)

WILLMET, INC.

9. Address: (operator only if more than one "owner")

Phone:

2250 Enterprise Dr., Mt. Pleasant, MI 48858 (517) 773-3949

10. Lease or well name: (be brief as possible)

Well number:

Wark

1-30

11. Surface owner:

John A. & Linda Wark

12. Address:

Phone:

115th Avenue, Ewart, MI 49631

(616) 734-5766

13. Surface location description

NE 1/4 of NW 1/4 of NE 1/4 Section 30 T. 17N R. 8W

14. Township

County

Ewart

Osceola

15. Bottom hole location description if directional drill

1/4 of 1/4 of 1/4 Section T. R.

16. Township

County

17. LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT.

a. Surface Location: 330 ft. from (N/S) N Line of quarter section. AND 983 ft. from (E/W) W Line of quarter section.

b. Bot. Hole Location: ft. from (N/S) Line of quarter section AND ft. from (E/W) Line of quarter section.

c. Drilling Unit: 330 ft. from (N/S) N Line of drilling unit AND 330 ft. from (E/W) E Line of drilling unit.

18. Drilling contractor:

Address:

Telephone:

T. D. Provins Drilling Co., Inc., 2111 Enterprise Dr., Mt. Pleasant, MI (517) 773-6946

19. Kind of tools (Rotary, cable, combination)

20. Intended depth

21. Intended formation

22. Is sour oil or gas expected?

Rotary

8,600

Cincinnati

☒ No ☐ Yes (See Instructions, Item 6)

23. Blowout control (Detail equipment type, size, trim, rating, testing, choke manifold, etc. See instructions, Item 7)

See Exhibits "A" and "B" attached hereto

24. PROPOSED DRILLING, CASING, CEMENTING AND SEALING PROGRAM

HOLE			CASING			CEMENT		MUD		
Depth	Geol. Form	Bit Dia.	O.D. Size	Wt./Ft. — Grade — Condition	Depth	Sacks	W.O.C.(hrs.)	Wt.	Vis.	W.L.
60-80		Drive	20	94.0# Conductor-New	60-80	--	--	--	--	--
80-900		17 1/2	13 3/8	48.0# H-40 -New	900	Cir.	18	9.5	55	25
900-5500		12 1/4	9 5/8	47.0# L-80 -New	5500	200	18	10.5	33	10
				and Tuboscoped						
5500-8600		8 1/2	5 1/2	17.0# N-80 -New	0-8600	As nec.	72	10.5	33	10

25. Send correspondence and permit to:

Address

Willmet, Inc. 2250 Enterprise Dr., Mt. Pleasant, MI 48858

LEAVE BLANK

Date Issued	Permit	Number
	☐ TO DRILL	35922
	☐ TO DEEPEN	

26. Name of applicant's agent: (Print)

Phone:

James T. Junker

(517) 773-3949

27. Signature of agent:

Date:

James T. Junker

8-2-82

FOR CASHIER'S USE ONLY. DO NOT WRITE IN THIS SPACE

For Geological Survey Use Only

- 1. White — Lansing file
- 2. Canary — Cashier copy
- 3. Blue — District review

- 4. Pink — Region review
- 5. Goldenrod — District file (w/permit)
- 6. Green — Applicant file (w/permit)

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
SUPERVISOR OF WELLS

WELL REWORK RECORD

FILE IN DUPLICATE WITHIN 30 DAYS AFTER COMPLETION OF REWORK OR DEEPENING
(Replaces GS 38)

LANSING
JAN 24 1983

CADILLAC HAS COPY
JAN 26 1983

PERMIT NUMBER 35977	DEEPENING PERMIT NUMBER	FIELD NAME Wildcat
NAME AND ADDRESS OF WELL OWNER Willmet, Inc., 2250 Enterprise Drive, Mt. Pleasant, MI 48858		
LEASE OR FARM NAME Wark		WELL NUMBER 1-30
WELL LOCATION NE NW NE	SECTION 30 T. 17N R. 8W	TOWNSHIP Evart COUNTY Osceola
WELL COMPLETED FOR (Oil, Gas, Gas Storage, Brine Disposal, Water Injection, etc.) Dry Hole	TOTAL DEPTH AFTER REWORK 4750	MECHANICAL LOGS RUN NO ADDITIONAL LOGS
WELL COMPLETED IN (Name Rock Formation and Zone of Completion) Dry Hole in Sour Zone	DATE REWORK COMMENCED 9-17-82	DATE REWORK COMPLETED 9-19-82
NAME AND ADDRESS OF CONTRACTOR T. D. Provins, 2113 Enterprise Drive, Mt. Pleasant, MI 48858		

WELL CASING RECORD - BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture Treatment Record	Perforations If plugged, how?
Size	Depth	Sacks	Type	From	To		
16"	49'						
13 3/8"	830'	860	200 CI A-660 POZ				
9 5/8"	5453'	335	CI A				

WELL CASING RECORD - AFTER REWORK (Indicate additions and changes only)

Casing		Cement		Perforations		Acid or Fracture Treatment Record	Perforations If plugged, how?
Size	Depth	Sacks	Type	From	To		
9 5/8"	5453	335	4x/ft	4455	4457	500 gal. 20% HCL	
			"	4560	4562		

DESCRIBE REWORK OPERATIONS IN DETAIL

Run in and circulated cement from TD to 4750, Set bridge plug at approximately 4750. Perforated from 4455-57 and 4560-62, swabbed back 50 bbls load water and 30 bbls. formation water. Ran in and set bridge plug at 4650 and circulated cement to surface (1380 sx).

GEOLOGICAL FORMATION RECORD OF DEEPENING

FROM	TO	FORMATION (type, color, hardness)	FROM	TO	FORMATION (type, color, hardness)

DAILY PRODUCTION TEST RECORD

[illegible]

DAILY INJECTION TEST RECORD IF INJECTION WELL (OR BDW)

[illegible]

SIGNATURE (Well Owner or Authorized Representative)

William Book

ADDRESS (if different than well owner)

1425 S. Mission
Mt. Pleasant, MI 48858

DATE (Month, Day, Year)

1-20-83

NOTE: IF GAS WELL, RECORD FLOW TEST UNDER "DAILY PRODUCTION TEST RECORD"

Woodward 1-26,
Converted to Active
Injector

WOODWARD 1-26
NW NE SW Sec 26 T17N R9W
OSCEOLA COUNTY, MI
CURRENT WELLBORE DIAGRAM

UPDATED APRIL 2014 BY JLT

20" CONDUCTOR DRIVEN TO 77'

14-3/4" Hole expected

SURFACE CASING

11 3/4"; 42#/ft.

SET @ 931' KB

CMT w/ 575 SX TO SURFACE

10-5/8" Hole expected

INTERMEDIATE CASING

8 5/8"; 32#/ft.

SET @ 5456' KB

CMT w/1600 SX

TOC @ 700'

PROD. CASING

NA

PLUGGING

RAN OPEN EDED DRILL PIPE TO 8140' AND

SPOTTED 100 SX TO 7800'

PULLED DRILL PIPE TO 7800' AND SPOTTED 195 SX TO 7000'

PULLED DRILL PIPE TO 7000' AND SPOTTED 75 SX TO 6800'

PULLED DRILL PIPE TO 6800' AND SPOTTED 400 SX TO 5460'

PULLED DRILL PIPE TO 5460' AND SPOTTED 100 SX TO 5060'

PULLED DRILL PIPE TO 5060' AND SPOTTED 900 SX TO 500'

PULLED DRILL PIPE TO 500' AND SPOTTED 150 SX TO SURFACE

WELL RE-ENTERED AND CONVERTED TO ACT 315 DISPL WELL
MW PERMIT #349-855-867 (9/11/87)

TD @ 8135' KB

API No. 21-133-36942-0000
GL @ 1175.2'
KB @ 1191.7'
WELL COMPLETION DATE: NA
PLUGGING COMPLETION DATE: 11/1/83

WOODWARD 1-26 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
10/11/1983	SPUD.
10/31/1983	DRILLING COMPLETED. FORMATION AT TD CABOT HEAD. 20" CONDUCTOR SET AT 77' 11 3/4" SET AT 931'; 575 SX 8 5/8" SET AT 5456'; 1600 SX
10/31/1983	PLUGGING START DATE RAN OPEN EDED DRILL PIPE TO 8140' AND SPOTTED 100 SX TO 7800' PULLED DRILL PIPE TO 7800' AND SPOTTED 195 SX TO 7000' PULLED DRILL PIPE TO 7000' AND SPOTTED 75 SX TO 6800' PULLED DRILL PIPE TO 6800' AND SPOTTED 400 SX TO 5460' PULLED DRILL PIPE TO 5460' AND SPOTTED 100 SX TO 5060' PULLED DRILL PIPE TO 5060' AND SPOTTED 900 SX TO 500' PULLED DRILL PIPE TO 500' AND SPOTTED 150 SX TO SURFACE
11/1/1983	PLUGGING COMPLETED
9/11/1987	WELL WAS RE-ENTERED AND CONVERTED TO AN ACT 315 DISPL. WELL MW PERMIT #349-855-867

APPLICATION FOR PERMIT TO DRILL OR DEEPEN
A WELL FOR OIL, GAS, BRINE DISPOSAL,
HYDROCARBON STORAGE OR SECONDARY RECOVERY

Under Authority of Act 61, P.A. of 1939, As Amended

MAIL TO:
STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
Box 30028, Lansing, Michigan 48909

R 7207
Rev. 2/81

1. SEE INSTRUCTIONS ON REVERSE SIDE

2. ☒ Fed. Employer Ident. No. ☐ Soc. Security No.
25-1391931

3. Application for permit to drill for:
☒ Oil and Gas ☐ Brine Disposal ☐ Hydrocarbon Storage ☐ Secondary Recovery ☐ Deepen ☒ Revise Application ☐ Cancel and Transfer

5. Fee enclosed:
☐ No ☒ Yes \$ 100.00

6. Do prior permits exist for this well?
☒ No ☐ Yes ☐ Drilled ☐ Termin'd

8. Applicant: (name each "owner" as they are bonded)

PPG Oil & Gas Co., Inc. & Miller Bros.

9. Address: (operator only if more than one "owner")

Phone:

2258 Enterprise Drive, Mt. Pleasant, MI 48858 (517) 773-3949

10. Lease or well name: (be brief as possible)

Well number:

Woodward et al

1-26

11. Surface owner:

Jerry and Brigid Woodward

12. Address:

Phone:

1661 W. Vance Rd.

(616) 832-4970

13. Surface location description (See instructions, item 4)

NW 1/4 of NE 1/4 of SW 1/4 Section 26 T. 17N R. 9W

14. Township

County

Hersey

Osceola

15. Bottom hole location description if directional drill (See instructions, item 5)

1/4 of 1/4 of 1/4 Section T. R.

16. Township

County

17. LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT. (See instructions, items 4 & 5)

a. Surface Location: 460 ft. from (N/S) N Line of quarter section. AND 667 ft. from (E/W) E Line of quarter section.
b. Bot. Hole Location: ft. from (N/S) Line of quarter section AND ft. from (E/W) Line of quarter section.
c. Drilling Unit: 842 ft. from (N/S) S Line of drilling unit AND 667 ft. from (E/W) E Line of drilling unit.

18. Drilling contractor: T. D. Provins, P. O. Box 642, Mt. Pleasant, MI 48858 Address: Telephone: (517) 773-6946

19. Kind of tools (Rotary, cable, combination) Rotary 20. Intended depth 8,600' 21. Intended formation Cincinnati 22. Is sour oil or gas expected? ☒ No ☐ Yes (See instructions, item 6)

23. Blowout control (Detail equipment type, size, trim, rating, testing, choke manifold, etc. See instructions, item 7)

See Exhibits "A" and "B" attached hereto.

24. PROPOSED DRILLING, CASING, CEMENTING AND SEALING PROGRAM

HOLE			CASING			CEMENT		MUD		
Depth	Geol. Form	Bit Dia.	O.D. Size	Wt./Ft. — Grade — Condition	Depth	Sacks	W.O.C.(hrs.)	Wt.	Vis.	W.L.
84'		20"	16"	New	84'					
857'	Drift	14 3/4"	11 3/4"	42# New	857'	500	to surface			
5500'	Bass Islands	10 5/8"	8 5/8"	32# N-80 New, Insp.	5500'		to surface			
8600'	Cincinnati	7 7/8"	5 1/2"	17# N-80 New, Insp.	8600'	350	to approx. 8 5/8" inter.	600'	inside	

25. Send correspondence and permit to: Address

PPG Oil & Gas Company, Inc., 2258 Enterprise Drive, Mt. Pleasant, MI 48858

LEAVE BLANK
Date Issued 8-15-83 Permit ☒ TO DRILL ☐ TO DEEPEN Number 36942

26. Name of applicant's agent: (Print) Donald P. Smith Exploration Engineer Phone: (517) 773-3949

27. Signature of agent: Donald P. Smith Date: 7-29-83

FOR CASHIER'S USE ONLY. DO NOT WRITE IN THIS SPACE

For Geological Survey Use Only

- 1. White — Lansing file
- 2. Canary — Cashier copy
- 3. Blue — District review
- 4. Pink — Region review
- 5. Goldenrod — District file (w/permit)
- 6. Green — Applicant file (w/permit)

**STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION**

PERMIT TO PLUG AND ABANDON

DNR DISTRIBUTION
 Permittee — Orig & 1 copy
 Division Office — 2 copies
 Field Office — File copy
 Others — On request

PERMIT NUMBER 36942
FIELD NAME Hersey

NAME AND ADDRESS OF PERMITTEE
 PPG AND MILLER BROS.

LEASE NAME AND WELL NO.
 Woodward 1-26

LOCATION (¼ ¼ ¼ or other) **SECTION** **T** **R** **W** **TOWNSHIP** **COUNTY**
 NW NE SW 26 17N 9W Hersey Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.) **DATE COMPLETED** **DATE PLUGGING WILL START** **PLUGGING PERMIT REQUESTED BY & DATE**
 Dry 10/30/83 10/31/83 W. Masterson 10/30/83

LAST PRODUCTION **PLUGGING TO BE DONE BY**
 BOPD BWPD MCFGPD DATE Bigard 14

PERMIT MAILED TO **COPIES MAILED TO**

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP.	PERFORATIONS
	20"	??			
	11 3/4"	931'	575 SX	surf	
	8 5/8"	5456'	1600 SX	700'	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

CONFIDENTIAL

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder.

PI AS PER MINERAL WELLS: 100 sx cmt. at 8140; 195 sx cmt at 7800';
 75 sx at 7000'; 400 sx at 6800'; 100 sx cmt 5460'; 900 sx at 5060';
 150 sx at 500'.

*NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature) **OFFICE** **DATE**
Michael J. Ross Cadillac D#6 12/9/83

NOTE WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion

R-7229
Rev. 11/77

This document paid for with State funds.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
Submit in DUPLICATE Within 30 Days after Well Completion

NOV 29 1983

PERMIT NUMBER

36942

DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT PPG Oil & Gas Co., Inc. 2258 Enterprise Drive Mt. Pleasant, MI 48858				NAME & ADDRESS OF DRILLING CONTRACTOR(S) Bigard Drilling Company 1315 S. Mission Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Woodward #1-26						DIRECTIONALLY DRILLED YES ☐ NO ☒	
SURFACE LOCATION NW NE SW		SECTION 26	TOWNSHIP 17N	RANGE 9W	TOWNSHIP NAME Hersey		
FOOTAGES (North/South) 460 Ft. from North		Line and 667		(East/West) Ft. from East		COUNTY NAME Osceola	
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME		
FOOTAGES (North/South)		(East/West)		Line of quarter section		COUNTY NAME	
DATE	DRILLING BEGUN 10-11-83		TOTAL DEPTH OF WELL Driller 8135 Log 8140		TYPE WELL Dry Hole		ELEVATIONS
	DRILLING COMPLETED 10-31-83		FORMATION AT T.D. Cabot Head		FT. DRLD. - ROTARY TOOLS From 0 To 8140		
	WELL COMPLETED		PRODUCING FORMATION(S) None		FT. DRLD. - CABLE TOOLS From To		
					K.B. 1191.7	R.F. 1190.3	
					R.T.	Grd. 1175.2	

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
20"	77	D.P.	---				YES	NO
11 3/4	931	575 Sx	---			None		
8 5/8	5456	1600 Sx	---					

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)					
None							Sam- ples	Odor	Pits	Mud Line	Gas Log	Fill Up
				Reed City Dol	Gas	4100					X	
				Sour	Gas	4650					X	
				A2 Carbonate	Gas	6995			X		X	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT
	None		None				

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger	X	LDT-CNL-GR	200-8135			2450	1°			
Birdwell		Dual Micro	3100-8135			4400	3/4°			
		Sonic	200-8135			6493	3/4°			
						7100	1 3/4°			

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH

I AM RESPONSIBLE FOR THIS REPORT. THE INFORMATION IS COMPLETE AND CORRECT.

DATE	NAME AND TITLE (PRINT)	SIGNATURE
11-18-83	William E. Booker, Geologist	<i>William E. Booker</i>

NOTICE REPORT COMPLETE SAMPLE AND FORMATION RECORD AND DRILL STEM TEST INFORMATION ON REVERSE SIDE

R - 7210
Rev. 3/77

NOV 29 1983

LANSING HAS COPY

SEP 15 1983 **WELL PLUGGING RECORD**

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

Permits & Bonding Unit

PERMIT NUMBER

36942

DEC 02 1983

FIELD NAME

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, MI 48858

COMPLETE LEASE OR FARM NAME(S)

Woodward

WELL NUMBER

1-26

WELL LOCATION

NW ¼

NE ¼

SW ¼ SEC. 26

T. 17N

R. 9W

TOWNSHIP

Hersey

COUNTY

Osceola

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

TOTAL DEPTH

8135

FORMATION

Cabot Head

DATE PLUGGING STARTED

10-31-83

DATE PLUGGING COMPLETED

11-1-83

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Jack Snider

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
20"	77	---	
11 3/4"	931	---	
8 5/8"	5456	---	

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	7800-8140	100 Sx
Cement	7000-7800	195 Sx
Cement	6800-7000	75 Sx
Cement	5460-6800	400 Sx
Cement	5060-5460	100 Sx
Cement	500-5060	900 Sx
Cement	0-500	150 Sx

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

Willie Masterson

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran open ended drill pipe to 8140' and spotted 100 sx to 7800'. Pulled drill pipe to 7800' and spotted 195 sx to 7000', pulled drill pipe to 7000' and spotted 75 sx to 6800', pulled drill pipe to 6800' and spotted 400 sx to 5410', pulled drill pipe to 5460' and spotted 100 sx to 5060' pulled drill pipe to 5060' and spotted 900 sx to 500, pulled drill pipe to 500' and spotted 150 sx to surface.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

William E. Booker, Geologist

COMPANY NAME AND ADDRESS

STRICKLER GEOLOGICAL SERVICES, INC.

SIGNATURE

William E. Booker

DATE (Month, Day, Year)

11-18-83

1425 S. Mission
Mt. Pleasant, MI 48853

OPERATORS USE

Description of Detail (cont.) or Other Supplemental Data:

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

Well was re-entered and converted to an Act 315 displ. well, MW Permit #349-855-867. M Moss

FINAL INSPECTIONS BY DEPARTMENT REPRESENTATIVES

SIGNATURE

DIVISION

DATE _____

Michael J. Moss

GEOLOGICAL SURVEY

9/11/87

a. Jensen 1-2, Permit # 37188

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

WELL PLUGGING RECORD

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

AMENDED 1-27-88

PERMIT NUMBER

37188

FIELD NAME

Hersey

COMPLETE NAME(S) AND ADDRESS OF WELL OWNER

PPG Oil & Gas Co.,

COMPLETE LEASE OR FARM NAME(S)

Jensen

WELL NUMBER

1-2

WELL LOCATION

SE 1/4 SE 1/4 NE 1/4 SEC. 2

T. 16N

R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Oil, Gas, Dry Hole, etc.)

Dry Hole

TOTAL DEPTH

8085

FORMATION

Cabot Head

DATE PLUGGING STARTED

11-30-83

DATE PLUGGING COMPLETED

11-30-83

DEPT. REPRESENTATIVE(S) WHO ISSUED PERMIT OR WITNESSED PLUGGING

Ben Gunning

CASING RECORD

SIZE CASING	DEPTH SET	AMOUNT RECOVERED	SHOT OR RIPPED
24"	132	None	
13 3/8"	848	None	
9 5/8"	5408	None	

BRIDGES OR PLUGS

TYPE (Brush, Stone, Cement, Mechanical, etc.)	DEPTH PLACED	SACKS OF CEMENT AND ADDITIVES
Cement	8085-5885	450 Sx
Cement	5885-5300	290 Sx

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Marvin Woods

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging:

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

- Ran drill pipe in and set 3 150 sx plugs from TD to 5885, set 290 sx from 5885 to 5300 and bolted temperature plat on wellhead. Temporarily abandoned. On 8-23-84 tagged cement at 5195' On 8-24-84, Halliburton spotted 180 sack plugs of Howcolite cement at each depth of 5195', 4358', 3521', 2684', and 1847'. a 165 sack Howcolite plug at 1010' and a 75 sack plug of Class A cement at 210'.
13 3/8" and 9 5/8" casings capped with 1/2" plate 3' below grade.

(USE REVERSE SIDE IF NEEDED)

CERTIFICATION

"I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge."

NAME AND TITLE (Typed or Printed)

Donald D. Metzger, Resident Manager

COMPANY NAME AND ADDRESS

Kalium Chemicals
11126 140th Ave.
Hersey, MI 49639

SIGNATURE

Donald D. Metzger

DATE (Month, Day, Year)

1-28-88

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

AMENDED 1-27-88

PERMIT NUMBER

1245-831-354

DATE

1-22-88

OWNER OR OPERATOR

PPG Oil & Gas Co., Inc.

ADDRESS

One PPG Place, Pittsburgh, PA 15272

WELL NAME

Jensen

WELL NUMBER

1-2

WELL LOCATION

SE 1/4 SE 1/4 NE 1/4 SEC. 2 T. 16N R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Brine, Disposal, Storage, or Test)

Test

TOTAL DEPTH

8085

FORMATION

Cabot Head

DATE PLUGGING STARTED

8-24-84

DATE PLUGGING COMPLETED

8-24-84

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☐ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	132	None		Cement	8085-5885	5 450
13 3/8"	848	None		Cement	5885-5300	0 290
9 5/8"	5408	None		Cement (howcolite) 5195', 4358', 3521', 2684', 1847'		180 at each depth
				Cement (Howcolite)		165
				Cement (Class A)	210'	75

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Hole was plugged to above 5300' on 11-30-83 and temporarily abandoned. On 8-23-84 tagged cement at 5195'. On 8-24-84, Halliburton spotted 180 sack plugs of Howcolite cement at each depth of 5195', 4358', 3521', 2684', and 1847', a 165 sack Howcolite plug at 1010' and a 75 sack plug of Class A cement at 210'.

13 3/8" and 9 5/8" casings capped with 1/2" plate 3' below grade.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

GEOLOGICAL SURVEY

Did a Service Company pump mud,
or cement or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Halliburton, 500 Mt. Pleasant

Was the well plugged by a Company or
contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Permits & Bonding Unit

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

C. Cookingham

CERTIFICATE

Donald D. Metzger

of Kalium Chemicals

(company)

I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

ADDRESS

TITLE

11126 140th Ave., Hersey, MI Resident Manager

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

MINERAL WELL COMPLETION REPORT
TO BE FILED WITH THE SUPERVISOR WITHIN 60 DAYS
AFTER COMPLETION OF WELL (ACT 315, P.A. 1969)

SUBMIT IN
TRIPLICATE

AMENDED 12-9-87

NAME OF OWNER OR OPERATOR PPG Oil & Gas., Inc.		ADDRESS OF OWNER OR OPERATOR 2258 Enterprise Drive Mt. Pleasant, MI 48858	
NAME OF DRILLING CONTRACTOR James Bigard Drilling Company		ADDRESS OF DRILLING CONTRACTOR 1315 S. Mission Mt. Pleasant, MI 48858	
WELL NAME Jensen	WELL NUMBER 1-2	PERMIT NUMBER 1245-831-354	
LOCATION SE SE NE	SECTION 2	TWP 16N	RANGE 9W
TOWNSHIP Grant	COUNTY Mecosta		
FOOTAGE 330 Ft. from South Line and N or S		330 Ft. from East Line of quarter section	
DATE DRILLING COMMENCED 11-3-83	DATE DRILLING COMPLETED 11-28-83	DATE WELL COMPLETED -----	
FORMATION COMPLETED IN Cabot Head	TOTAL DEPTH 8085	ELEVATION KB 1114	TYPE OF WELL Hole
ROTARY TOOLS From 0 Feet to 8085 Feet	CABLE TOOLS From 0 Feet to 8085 Feet		

WELL CASING RECORD

TUBING AND CASING DATA				CEMENTING DATA			PERFORATIONS OR OPEN HOLE		
SIZE	LB./FT.	GRADE	DEPTH	SACKS	TYPE	STAGING DEPTH(S)	NO. HOLES	FROM	TO
24"			132	DP					
13 3/8"			848	900					
9 5/8"			5408	1600					

WATER ZONES

WIRE LINE LOGS RUN

FORMATION	FROM	TO	AMOUNT	SERVICE COMPANY	TYPE LOG	INTERVAL LOGGED	COPY TO SURVEY
(Fresh)				Schlumberger	LDT-CNL-GR	200 - 8084	Yes
					DLL-MLL	3250 - 8084	Yes
					Sonic	200 - 8084	Yes

FRACTURE OR ACID TREATMENT

SOLUTION MINING

DATE	FROM	TO	QUANTITY	NAME AND NUMBER OF INJECTION AND TARGET WELL - DISTANCE APART

The information in and attached to this report is complete and correct

SIGNATURE Donald D. Metzger	TITLE Kalium Chemicals Resident Manager	DATE 12-9-87
--------------------------------	---	-----------------

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE

FORMATION RECORD

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

ELEVATION USED: ☐ KB ☐ RT ☐ RF ☐ GR	GEOLOGIST NAME:	TOPS TAKEN FROM: ☐ SAMPLE LOG ☐ ELECTRIC LOG
--	-----------------	---

FROM	TO	FORMATION (TYPE, COLOR, ETC.)	FROM	TO	FORMATION (TYPE, COLOR, ETC.)

IF WELL WAS CORED, ATTACH CORE DESCRIPTION AND ANALYSIS

LIST ATTACHMENTS:

GEOLOGICAL SURVEY USE ONLY

REVIEWED BY

DATE OF COMPLETION

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

FEB 3 1984

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

PERMIT NUMBER

37188

DATE

1/12/84

OWNER OR OPERATOR

PPG Oil & Gas Company, Inc.

ADDRESS

2258 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME

Jensen

WELL NUMBER

1-2

WELL LOCATION

SE 1/4 SE 1/4 NE 1/4 SEC. 2 T. 16N R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Brine Disposal Storage or Test)

Dry Hole

TOTAL DEPTH

8085

FORMATION

Cabot Head

DATE PLUGGING STARTED

11-30-83

DATE PLUGGING COMPLETED

11-30-83

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

Ben Gunning

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	132	None		Cement	8085-5885	450
13 3/8"	848	None		Cement	5885-5300	290
9 5/8"	5408	None				

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran drill pipe and set 3 150 sx plugs from total depth to 5885. Set 290 sx from 5885 to 5300 and bolted temperature plate on wellhead. Temperature abandoned.

GEOLOGICAL SURVEY

FEB - 6 1984

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud
spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or
Contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

Marvin Woods

CERTIFICATE

William E. Booker of Strickler Geological Services, Inc. (company)

I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

William E. Booker

ADDRESS

1425 S. Mission, Mt. Pleasant,

TITLE

Geologist

FINAL INSPECTIONS

MI

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

MINERAL WELL COMPLETION REPORT
TO BE FILED WITH THE SUPERVISOR WITHIN 60 DAYS
AFTER COMPLETION OF WELL (ACT 315, P.A. 1969)

FEB 3

SUBMIT IN
TRIPLICATE

NAME OF OWNER OR OPERATOR PPG Oil & Gas Co., Inc.		ADDRESS OF OWNER OR OPERATOR 2258 Enterprise Drive Mt. Pleasant, MI 48858	
NAME OF DRILLING CONTRACTOR James Bigard Drilling Company		ADDRESS OF DRILLING CONTRACTOR 1315 S. Mission Mt. Pleasant, MI 48858	
WELL NAME Jensen		WELL NUMBER 1-2	PERMIT NUMBER 37188
LOCATION SE SE NE		SECTION 2	TWP. 16N RANGE 9W
TOWNSHIP Grant		COUNTY Mecosta	
FOOTAGE 330 Ft from South Line and 330 Ft from East Line of quarter section N or S E or W			
DATE DRILLING COMMENCED 11-3-83	DATE DRILLING COMPLETED 11-28-83	DATE WELL COMPLETED -----	TYPE OF WELL Dry Hole
FORMATION COMPLETED IN Cabot Head	TOTAL DEPTH 8085	ELEVATION KB 1114	RB RT RF GN 1113 1098
ROTARY TOOLS From 0 Feet to 8085 Feet		CABLE TOOLS From Feet to Feet	

WELL CASING RECORD

TUBING AND CASING DATA				CEMENTING DATA			PERFORATIONS OR OPEN HOLE		
SIZE	LB./FT.	GRADE	DEPTH	SACKS	TYPE	STAGING DEPTH(S)	NO. HOLES	FROM	TO
24"			132	DP					
13 3/8"			848	900					
9 5/8"			5408	1600					

WATER ZONES

WIRE LINE LOGS RUN

FORMATION	FROM	TO	AMOUNT	SERVICE COMPANY	TYPE LOG	INTERVAL LOGGED	COPY TO SURVEY
(Fresh)				Schlumberger	LDT-CNL-GR	200 - 8084	Yes
					DLL-MLL	3250 - 8084	Yes
					Sonic	200 - 8084	Yes

FRACTURE OR ACID TREATMENT

GEOLOGICAL SURVEY SOLUTION MINING

DATE	FROM	TO	QUANTITY	NAME AND NUMBER OF INJECTION AND TARGET WELL - DISTANCE APART
				FFB - 6 1984

The information in and attached to this report is complete and correct.

SIGNATURE <i>William E Book</i>	TITLE Geologist	DATE 1/12/84
------------------------------------	--------------------	-----------------

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE

STATE OF MICHIGAN



JAMES J. BLANCHARD, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING
BOX 30028
LANSING, MI 48909

RONALD O. SKOOG, Director

NATURAL RESOURCES COMMISSION
THOMAS J. ANDERSON
R. CAROLLO
DB A. HOEFER
EPHEN F. MONSMA
HILARY F. SNELL
PAUL H. WENDLER
HARRY H. WHITELEY

October 26, 1983

Mr. Donald P. Smith
PPG Oil & Gas Co., Inc.
2258 Enterprise Drive
Mt. Pleasant, MI 48858

Dear Mr. Smith:

Enclosed is Mineral Well Permit #1245-831-354 to drill and abandon a mineral exploration well in the SE $\frac{1}{4}$, SE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 2, T16N-R9W, Grant Twp., Mecosta County. This permit was issued under the provisions of the "Mineral Well Act", Act 315 PA 1969, as amended.

It is my understanding that this well is also being permitted under Act 61, Oil and Gas Act. This was not indicated in your covering letter. In the future please alert us to the fact that simultaneous permitting is being requested.

Records of the well drilled under this permit are due within 60 days of completion. For information on contents of these records, please refer to Rule 72(a). These records and supporting information will be held confidential as per Section 17(5) and Rule 73 of the Act.

Whenever possible, please indicate county, township and range on each record sent into our office.

Thank you for your cooperation with us on these matters.

Sincerely,

A.J. Rarick, Acting Chief
Mineral Well Unit
Geological Survey Division

AJR:bb
Enclosures

MINERAL WELL PERMIT
For a Test Well(s)

Permit No. 1245-831-354	
Date Issued 10-26-83	Date Expires 04-26-83

Permission is hereby granted to PPG Oil & Gas Co., Inc. (name)
2258 Enterprise Drive, Mt. Pleasant, MI 48858 (address)

to drill and abandon (type of operation) mineral exploration (type of test well(s))
to be located in SE $\frac{1}{4}$, SE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 2, T16N-R9W, Grant Twp., Mecosta County

<u>Jensen</u> (well name)	<u>1-2</u> (well number)	<u>Niacaran</u> (formation)	<u>8000</u> (intended depth)	<u>RB</u> <u>RT</u>	<u>RF</u> <u>GN</u>
				(elevation)	

SPECIAL INSTRUCTIONS:

HOLE TO BE PLUGGED FROM TOP TO BOTTOM WITH NEAT CEMENT.

Permit is subject to the provisions and requirements of Act 315 PA 1969, As Amended, and rules, requirements, or orders issued by the Supervisor of Mineral Wells and the Department of Natural Resources.

SUPERVISOR OF MINERAL WELLS

By: *A.J. Harick*

Title: A.J. Harick, Acting Chief

Address: Mineral Well Unit
Geological Survey Division
Dept. of Natural Resources
Box 30028, Lansing, MI 48909

Please address all notifications, correspondence,
and records to:

Telephone: 517/373-9289

— NOTICE —

1. This permit is issued on the basis of the approved program outlined in the application. No changes or alterations are to be made without the permission and approval of the Supervisor of Mineral Wells or his authorized representative.
2. This permit, or a copy thereof, shall be posted at a conspicuous place at the well location or be in the possession of the driller.
3. It is further made a requirement of this permit that the applicant (or contractor) give notice to the public utilities in accordance with Act 53, Public Acts of 1974, Compiled Laws 460.701 to 460.718 and comply with each of the requirements of the act.
4. An unusual, unexpected, or difficultly controllable large volume of oil, gas, brine or flowing fresh water or a condition hazardous to public health, safety, or waters of the state shall be reported immediately to the Supervisor.

Distribution: Linen-applicant—2-Lansing—3-field—4-applicant.

20. continued

c. How are salt cuttings to be handled? Cuttings will be dissolved, and brine circulated to the reserve pit.

d. Are all fluids in the lined pit to be removed and disposed of in approved method?
☒ Yes ☐ No If no, explain: _____

e. Are drilling muds and cuttings to be removed or totally encapsulated within the folded over liner and/or an additional impermeable cover as needed, for burial at four feet below grade or deeper? ☒ Yes ☐ No If no, explain: _____

f. Is approval of the encapsulation to be received from the District Geologist?
☒ Yes ☐ No If no, explain: _____

g. During well completion and test procedures, all fluids must be contained in steel tanks and transported to approved facilities for disposal. Comments: _____

Other Department personnel contacted? ☒ Yes ☐ No Comments:
See item #16

21. Site Restoration will be addressed upon well completion or site abandonment. At that time the District Geologist will develop specifications in keeping with the State Land Manager's or Surface Owner's objectives. _____

ON THE BASIS OF THE REVIEW FINDINGS:

I ☒ DO ☐ DO NOT RECOMMEND ISSUANCE OF A PERMIT TO DRILL THIS SITE.

DISTRICT GEOLOGIST'S COMMENTS: _____

GEOLOGICAL SURVEY DIVISION:

BY:

(signature)

10-21-83

(date)

LAND MANAGER'S COMMENTS: _____

LAND MANAGER (If State Surface):

(signature)

(date)

REGIONAL DIRECTOR'S COMMENTS: _____

REGIONAL DIRECTOR:

BY:

(signature)

(date)

This document paid for with State funds

PPG Oil & Gas Co., Inc.

A Subsidiary of PPG Industries, Inc.

2258 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949



October 19, 1983

Mr. Wayne T. Todd
Regional Mineral Wells Geologist
Michigan Department of Natural Resources
Clare Avenue
Clare, MI 48617

Mr. Ty Black
Assistant to the Regional Geologist
Michigan Department of Natural Resources
P.O. Box 128
Roscommon, MI 48653

Gentlemen:

Attached is a copy of an application for a permit to drill a Mineral Test Well in Grant Township, Mecosta County. This application was submitted in Lansing on October 19, 1983. I would appreciate your early handling of the field review in order to expedite the issuance of the permit.

Please note that the Mineral Well Act provides confidential treatment of information related to the permit and all data obtained from the well.

Please call me at (517) 773-3949 if we can be of assistance.

Sincerely,

Donald D. Metzger

Donald D. Metzger
Director, Exploration
& Michigan Operations

DDM/blb
Attachments

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

APPLICATION FOR A MINERAL WELL PERMIT

To Drill, Operate, Convert, or Rework
a Brine, Storage, Disposal, or Test Well.

By Authority of Act 315, P. A. 1969

1 DATE OF APPLICATION 10-18-83	2 FEE ENCLOSED \$1.00
3 APPLICATION TO Drill	
4. TYPE MINERAL WELL D-5 (Test Well)	5. WELL DESIGNATION Jensen 1-2
6. LOCATION: SE/4 of the SE/4 of the NE 1/4 SEC 2 T 16N R 9W	
7. TOWNSHIP Grant	8 COUNTY Mecosta

9 APPLICANT PPG Oil & Gas Co., Inc.		10 TELEPHONE (517) 773-3949	
11 ADDRESS (Street City, State) 2258 Enterprise Drive, Mt. Pleasant, MI		12 ZIP CODE 48858	
13 SURETY OR SECURITY COMPANY Hartford Accident & Indemnity Co.	14 TYPE ☐ SINGLE ☒ BLANKET	15 AMOUNT \$25,000.00	16 BOND NO 4506230
17 OWNER OR SURFACE RIGHTS Philip C. Jensen		18 OWNER OR MINERAL RIGHTS Philip C. Jensen	
19 DRILLING CONTRACTOR T. D. Provins	20 ADDRESS P.O. Box 642, Mt. Pleasant, MI 48858		21 TELEPHONE (517) 773-6946
22 TYPE DRILLING TOOLS ☐ CABLE ☒ ROTARY ☐ COMBINATION	23 FORMATION Niagaran		24 INTENDED DEPTH 8,000'
25 PROJECT ENGINEER OR GEOLOGIST D. D. Metzger	26 ADDRESS 2258 Enterprise Drive, Mt. Pleasant, MI 48858		27 TELEPHONE (517) 773-3949

28 PROGRAM OF DRILLING, CONVERTING, REWORKING, CASING, CEMENTING, COMPLETING, OPERATING, AND MONITORING.
(See appropriate instruction sheet Attach 3 copies of proposed program - including but not necessarily limited to information requested in the instruction sheet.)

CASING PROGRAM:
Size Depth Cement

GEOLOGICAL SURVEY

OCT 20 1983

Exhibits 1, 2, 3 enclosed

MINERAL WELL SECTION

INSTRUCTION SHEET NO.		
Type of Well	Drill-New	Rework*
Brine	D-1	R-1
Storage	D-2	R-1
Disposal	D-3	R-1
Solution Mining	D-4	R-2
Test Well	D-5 X	R-1
* Rework, Deepen, or Convert to New Use		

THERE WILL BE NO CHANGES IN THE PROGRAM OUTLINED IN THIS APPLICATION WITHOUT APPROVAL OF THE SUPERVISOR OF MINERAL WELLS OR HIS AUTHORIZED REPRESENTATIVE.

29 ADDRESS CORRESPONDENCE AND PERMIT TO: PPG Oil & Gas Co., Inc., 2258 Enterprise Drive, Mt. Pleasant, MI 48858	30 TELEPHONE (517) 773-3949
--	--------------------------------

MINERAL WELL SECTION USE ONLY		The Applicant agrees to comply with provisions and requirements of Act 315, P.A. 1969, and asserts that the information on this application and attached report is true and correct.	
STATUS OF BOND		SIGNATURE (APPLICANT/AUTHORIZED REP) <i>Donald P. Smith</i>	
APPLICATION APPROVED BY <i>[Signature]</i>		DATE 10-18-83	
PERMIT NUMBER 1245-831-354		NAME (TYPED) Donald P. Smith	
DATE ISSUED 10-26-83		TITLE Exploration Engineer	
ISSUED BY <i>[Signature]</i>		FOR CASHIER'S USE ONLY	
DISTRIBUTION: White - Lansing Canary - Field Pink - Applicant		R 7500 2/73	

7019 10

PPG Oil & Gas Co., Inc.

A Subsidiary of PPG Industries, Inc

2258 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949



October 19, 1983

Mr. Al Rarick
Department of Natural Resources
Geological Survey Division
P. O. Box 30028
Lansing, MI 48909

Dear Mr. Rarick:

Re: PPG Oil & Gas Co., Inc. Standard Casing and Cementing
Procedures

Listed below are PPG Oil & Gas Co., Inc. standard casing and cementing procedures:

1. Drive 24 pipe as deep as possible. This allows us to set 20" conductor inside and lower if trouble occurs with washout under conductor pipe while drilling surface hole.
2. Drill 17 1/2" hole to base of drift or to a firm footing as determined by geologist from samples.
3. Run 13 3/8" S.T.C. 48# Seamless H-40 casing equipped with Texas pattern weld on shoe. A float collar is set 30', or one joint, off bottom. The lower 5 joints of casing are strapped across collar in either two or three sectors. Top and bottom cement plugs with no centralizer as recommended by cementing company (see attached).
4. We also run a cement basket approximately 50' below surface, making sure cement is circulated back to surface.
5. We then drill 12 1/4" hole into Bass Islands formation or the Amherstburg if local drilling shows no lost circulation zones in the Bois Blanc and set 9 5/8" L.T.C. 40# N-80 grade pipe with a guide shoe on bottom with float collar first joint up and all bottom 6 joints secured with Weld-A or Baker Lok or some similar material.
6. Centralizers are run per cementer's recommendation attached.
7. For both the surface and intermediate casings, the lower joints of casing are roughened unless they appear rusty as this provides a much better bond for cement.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. Smith', written over a horizontal line.

Donald P. Smith
Exploration Engineer

DPS/blb
Attachment

Exhibit #1

Surface Casing (13 3/8" in 17 1/2" hole @ 750')

- A. Use insert float and Texas Pattern Shoe and lock to shoe joint with thread lock.
- B. No centralizers
- C. Circulate hole a minimum of one complete circulation
- D. Do not reciprocate casing
- E. Run bottom (red) wiper plug. Do not use if carrying LCM in cement.
- F. Pump 70 bbls. fresh water ahead of cement
- G. Cement with:
 - 1. 475 sx 50/50 Poz., 6% total gel, 3% CaCl_2
1.54 ft³/sk, 13.3#/gal, 7.66 gals/sk
 - 2. 200 sx Class "A", 3% CaCl_2
1.18 ft³/sk, 15.6#/gal, 7.66 gals/sk

Intermediate Casing (9 5/8" in 12 1/4" hole @ 5100')

Recommended Procedure:

- A. Use float collar and guide shoe and lock to shoe joint with Halliburton Weld-A
- B. Run one centralizer 10' above guide shoe and four more at every other collar spacing.
- C. Circulate hole a minimum of one complete circulation and until the drag stabilizes.
- D. Reciprocate casing while circulating and cementing. Stop reciprocation just prior to bumping top plug.
- E. Run bottom (red) wiper plug. Do not use if carrying LCM in cement.
- F. Pump 30 bbls. fresh water ahead of cement.
- G. Cement with enough cement from caliper log to bring cement to surface on all intermediate casing strings.
- H. Run top (black) wiper plug.
- I. Displace with fresh water.

Casing Equipment: (9 5/8")

Regular guide shoe, float collar with auto fill, Halliburton weld-A (2), Centralizers (5)

PPG Oil & Gas Co., Inc.

A Subsidiary of PPG Industries, Inc

2258 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949



October 19, 1983

Mr. Al Rarick
Department of Natural Resources
Geological Survey Division
4th Floor, Mason Building
P. O. Box 30028
Lansing, MI 48909

Dear Mr. Rarick:

Subject: PPG Oil & Gas Co., Inc. Testing Program

The test well covered by this application is being drilled into the top of the Niagaran formation to approximately 8,000'. The primary objective is evaluation of the potash mineralization of the A-1 Evaporite, which occurred in the interval -7,579' to -7,931' in the Freudenburg 1-31 well located in the SE/4 NE/4 NE/4 of Section 31, T17N, R8W, Osceola County, Michigan.

The testing program will consist of cutting 4" cores through the anticipated potash mineralized section. Then gamma ray, neutron and other geophysical logs will be run at total depth.

Geophysical logs will also be run from the base of the surface casing to total depth. Sample cuttings will be retained and sample descriptions will be submitted with the plugging record. Potential disposal horizons will be drill stem tested.

Sincerely,

Donald D. Metzger jr

Donald D. Metzger
Director, Exploration
& Michigan Operations

DDM/blb

Exhibit #2

PPG Oil & Gas Co., Inc.

A Subsidiary of PPG Industries, Inc

2258 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949



October 19, 1983

Mr. Al Rarick
Department of Natural Resources
Geological Survey Division
4th Floor, Mason Building
P.O. Box 30028
Lansing, MI 48909

Re: Casing Removal and Plugging

Dear Mr. Rarick:

Upon completion of the coring and logging of the test well covered by attached permit application the well may be abandoned and plugged. If not abandoned, change of status will be requested at a later date.

Plugging will consist of running open end drill pipe to T.D. and setting continuous cement plugs to surface. The casing will be cut off at least 3 feet below surface and a 1/2" steel plate welded over the top of surface casing stub.

The cellar will be removed and backfilled according to D.N.R. specifications.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. Smith', written over a horizontal line.

Donald P. Smith
Exploration Engineer

DPS/blb

Exhibit #3

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

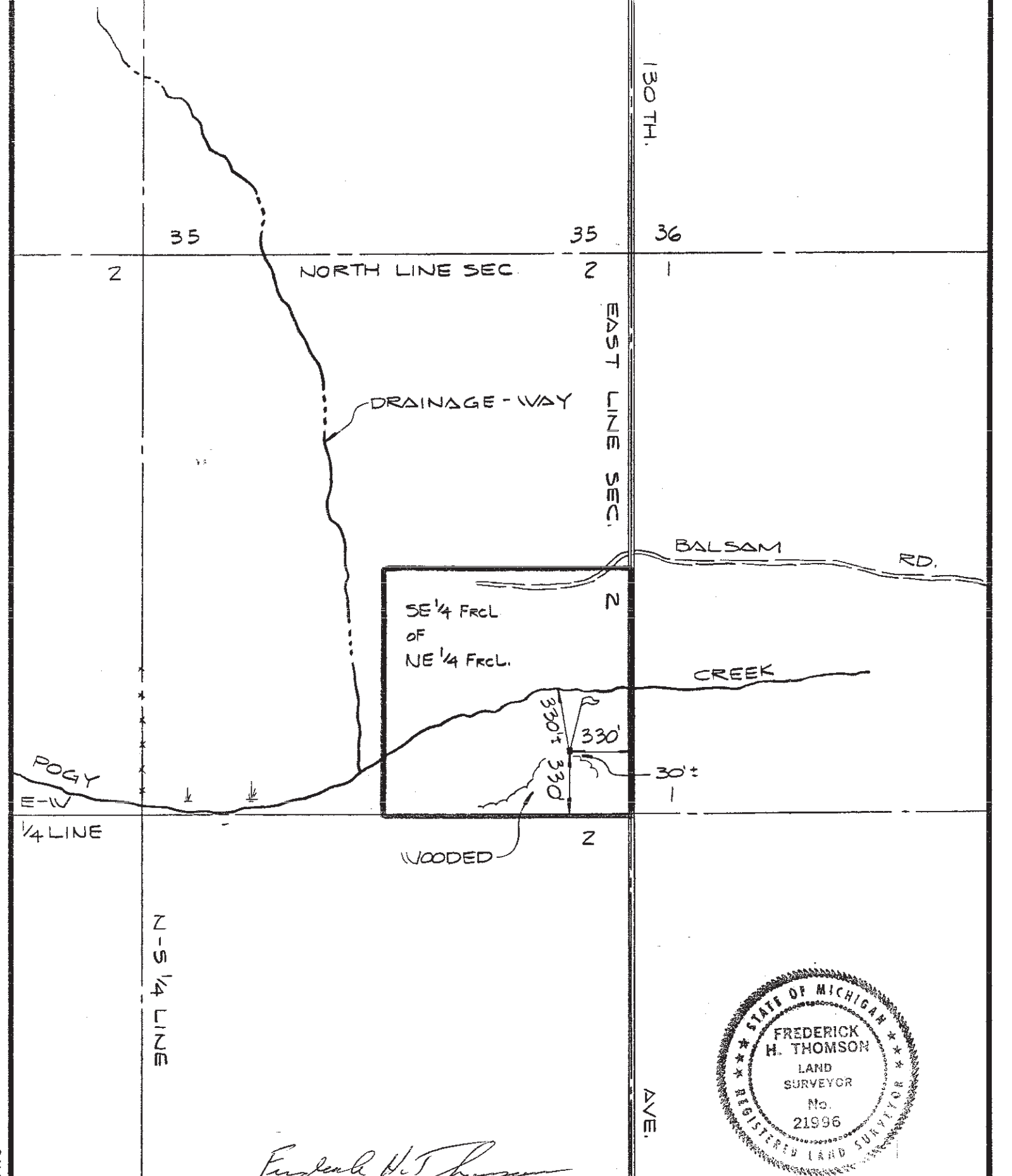
SURVEY RECORD OF WELL LOCATION

(Submit five copies with Application for Permit to Drill a Well for Oil or Gas,
Brine Disposal, Hydrocarbon Storage or Secondary Recovery)

83368

LESSEE (OWNER OF LEASE RIGHTS) P.P.G. Oil & Gas Company, Inc.			
LESSOR (OWNER OF MINERAL RIGHTS) Phillip Jensen			WELL NO. 1-2
LOCATION SE ¼ OF SE ¼ OF NE ¼ SECTION 2 T. 16 N R. 9 W			
TOWNSHIP Grant		COUNTY Mecosta	
PLAT BELOW REPRESENTS ONE FULL SECTION (1 Mile Square)		- Outline drilling unit and spot well location on plat at left. Where drilling unit crosses section lines, divide the plat into an east half and a west half OR a north half and a south half (which ever applies). Outline the unit and locate the well in two directions from NEAREST quarter section and unit lines. - Location of well in two directions from NEAREST quarter section and unit lines is: <u>330</u> ft. from <u>South</u> line of Quarter Section (north-south) <u>330</u> ft. from <u>East</u> line of Quarter Section (east-west) <u>330</u> ft. from <u>South</u> line of unit (north-south) <u>330</u> ft. from <u>East</u> line of unit (east-west) - Describe wellsite marker. Show or describe access route if it is not readily accessible. <u>Wellsite is marked with a painted wood stake. Site can be reached from East off of 130th Ave. See supplemental plat.</u>	
SECTION 2			
(Scale of Plat — 1 inch equals 1320 ft.)			
4. ON SEPARATE PLAT OR PLOT PLAN: A. Locate, identify, and show distances to all roads, power lines, residences, farm buildings and other structures within 300 feet of the stake; B. Locate, identify, and show distances to all lakes, streams, swamps, drainage ways or any other surface water features within 1320 feet of the stake. 5 In an ENVIRONMENTAL IMPACT ASSESSMENT describe all structures and surface features shown detailing plans for hazards prevention and erosion control (See instructions and guidelines for preparation of an environmental impact assessment).			
NAME OF INDIVIDUAL WHO SURVEYED WELL SITE <i>Frederick H. Thomson</i> Frederick H. Thomson, LS# 21996		DATE 10-18-83	TITLE Surveyor
ADDRESS J. L. WILCOX & ASSOCIATES, INC. 7230 North US 131 Manton, MI 49663			
I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF			
SIGNATURE (LESSEE OR AUTHORIZED REPRESENTATIVE) <i>D. Smith</i>		ADDRESS (IF DIFFERENT THAN LESSEE)	DATE (MONTH, DAY, YEAR)





Frederick H. Thomson



SUPPLEMENTAL PLAT: JENSEN
1-2, SECTION 2, T16N-R9W,
GRANT TOWNSHIP, MECOSTA
COUNTY MICHIGAN

CLIENT: P.P.G. OIL & GAS CO. INC.

DATE 10-13-83	J.L. WILCOX & ASSOCIATES, INC. Engineers and Surveyors 7230 N. U.S. - 131 • Manton, Michigan 49653		
DRN R.M.			
CHD ACF			
SCALE V: 1" = 660'	NOTES F.B. 180 PG. 13	SHEET 1 OF 1	JOB NO. 83368

BRUNING 44-142 48470

b. Pilarski 1-12, Permit #00340

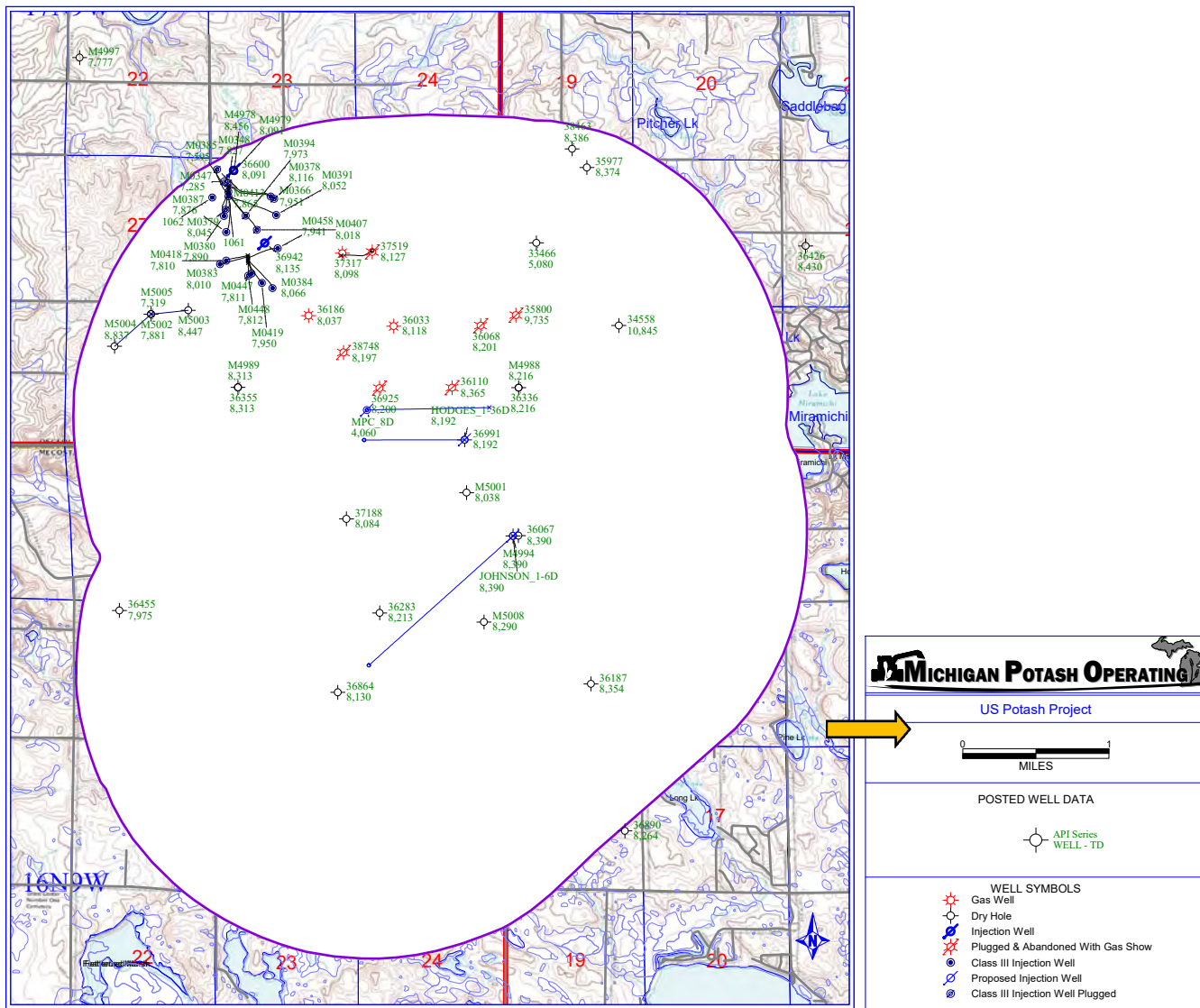


Figure A8. Map showing the wells that penetrate the confining zone in the AOR.

DEPARTMENT OF NATURAL RESOURCES
Geological Survey Division

REQUEST FOR CHANGE OF OWNERSHIP OF A PERMIT
(Submit all copies)

Please Change:

Permit No. 1242-831-354 Type Well Mineral Test Field Name Hersey-Evart

Owned by PPG Oil & Gas Co., Inc.

Address 2258 Enterprise Drive, Mt. Pleasant, MI 48858 (517) 773-3949
(street) (town) (state) (zip) (phone)

for Pilarski PN 1242-831-354 No. 1-12 located in the C 1/4 NE 1/4 NE 1/4
section 12, T. 16N, R. 9W, Grant Township, Mecosta County,
to PPG Industries, Inc.
(acquiring owner-complete names please)

All operating rights are discharged by (us) (me).

(Owner)

(Representative)

(Signature)

(Date)

PPG Oil & Gas Co., Inc.-Donald D. Metzger

Donald D. Metzger 4-17-84

THE SUPERVISOR IS PROHIBITED BY STATUTE FROM ISSUING A PERMIT TO ANY PERSON WHO IS NOT IN COMPLIANCE WITH THE PROVISIONS OF THE ACT, THE RULES, OR THE ORDERS OF EITHER THE SUPERVISOR OR THE NATURAL RESOURCES COMMISSION. ELIGIBILITY FOR PERMITS IS CONDITIONED ON COMPLIANCE WITH SUCH RULES AND ORDERS IN A DILIGENT MANNER AND IN ACCORDANCE WITH ACCEPTED OIL FIELD PRACTICE.

(We) (I) have acquired the well under this permit and assume full responsibility for drilling, operation, and abandonment in conformity with the law, regulations and orders issued by the Supervisor of Wells. The bond(s) required is attached or already on file.

PPG Industries, Inc.

(acquiring owner-complete names please)

Address 2258 Enterprise Drive, Mt. Pleasant, MI 48858 (517) 773-3949
(street) (town) (state) (zip) (phone)

All operating rights and responsibilities are assumed by (us) (me).

(Owner)

(Representative)

(Signature)

(Date)

PPG Industries, Inc. - Donald D. Metzger

Donald D. Metzger 4-17-84

THE DEPARTMENT OF NATURAL RESOURCES

Approved. J. Raich

(Signature)

5/3/84
(Date)

DNR USE ONLY

White, Lansing

Yellow, Acquiring Owner

Pink, Selling Owner

Blue, Field

R-7214 (Rev. 10-79)

R 299.1105. Transfer of permits

Rule 105.

(b) Change of ownership of a well

Should the person who has obtained a permit to drill dispose of his interest in the well to a new owner before drilling is commenced, while the well is being drilled, or after the well has been completed, a notice of the change of ownership and a request for the transfer of the permit to the new owner shall be submitted to the supervisor on forms prescribed by him. The transfer of the permit may be approved on receipt of a properly-prepared request, including the signatures of the operator of record and the acquiring operator, and the required surety bond of the acquiring operator.

Should the owner of record or the acquiring operator fail, neglect, or refuse to file a notice of change of ownership and request the transfer of a permit for a producible well, the supervisor may require suspension of production from the well until the request for transfer has been filed and approved.

Should the owner of record be under notice because of unsatisfactory conditions on the lease involved with the transfer of a permit, the supervisor may require suspension of production from the well on said lease until:

- (1) The owner of record has corrected said unsatisfactory conditions and the permit has been transferred to the new owner; or until
- (2) The acquiring operator by written agreement with the supervisor has corrected said unsatisfactory conditions and the permit has been transferred as provided herein.

A permit for a well which has not been drilled, or for a well which is being drilled, may not be transferred to a person who is not in compliance with the statutes, rules, regulations and orders as provided in rule 104.

R 299.1105a. Suspension of production on default

Rule 105a. Should the owner of record sell or dispose of a well without filing a notice of change of ownership and a request for transfer of the permit, the supervisor may require suspension of production from the well, including removal or sale of oil from the lease, until correction has been made of all unsatisfactory lease conditions and transfer of the permit has been completed as provided in rule 105 (b).

R 299.1106. Surety bond; required

Rule 106. A person who drills a well as provided in rule 101, or who acquires a well or wells as provided in rule 105, shall file a surety bond with the supervisor, on a form provided by the supervisor, which has been executed by a responsible surety company authorized to do business in the state of Michigan.

NOTE: Cash may be deposited in lieu of a surety bond.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

PERMIT NUMBER

1242-831-354

DATE

2/2/84

OWNER OR OPERATOR

PPG Oil & Gas Co., Inc.

ADDRESS

2258 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME

Pilarski

WELL NUMBER

1-12

WELL LOCATION

C ¼ NE ¼ NE ¼ SEC. 12 T. 16N R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Brine Disposal Storage or Test)

Test Well

TOTAL DEPTH

7937

FORMATION

Niagaran

DATE PLUGGING STARTED

11-18-83

DATE PLUGGING COMPLETED

11-18-83

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

Ben Gunning

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	45	----		Cement	7937-6015	530
13 3/8"	946	----		Cement	6015-5590	290
9 5/8"	5480	----				

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran drill pipe open ended to 7937 and spotted 530 sx, pulled drill pipe to 6015 and spotted 290 sx, pulled drill pipe and waited on cement.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud,
spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or
Contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

GEOLOGICAL SURVEY

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

Marvin Woods

FEB 2 8 1984

CERTIFICATE

I, William E. Booker of Strickler Geological Services, Inc. (company)
state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction,
and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

William E. Booker

ADDRESS

1425 S. Mission
Mt. Pleasant, MI 48858

TITLE

Geologist

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

OPERATORS USE

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

NAME OF OWNER OR OPERATOR PPG Oil & Gas Co., Inc.		ADDRESS OF OWNER OR OPERATOR 2258 Enterprise Drive Mt. Pleasant, MI 48858	
NAME OF DRILLING CONTRACTOR T. D. Provins Drilling Co.		ADDRESS OF DRILLING CONTRACTOR 2113 Enterprise Drive Mt. Pleasant, MI 48858	
WELL NAME Pilarski	WELL NUMBER 1-12	PERMIT NUMBER 1242-831-354	
LOCATION C NE NE	SECTION 12	TWP. 16N	RANGE 9W
TOWNSHIP Grant	COUNTY Mecosta		
FOOTAGE 844 Ft. from North Line and 666 Ft. from East Line of quarter section N or S E or W			
DATE DRILLING COMMENCED 10-22-83	DATE DRILLING COMPLETED 1-1-84	DATE WELL COMPLETED 1-3-84	TYPE OF WELL Test Hole
FORMATION COMPLETED IN -----	TOTAL DEPTH 8290, 8109, 8318, 7937	ELEVATION KB 1215.4	RB RT RF 1213.9 GN 1199.0
ROTARY TOOLS From 0 Feet to 8318 Feet		CABLE TOOLS From Feet to Feet	

WELL CASING RECORD

TUBING AND CASING DATA				CEMENTING DATA			PERFORATIONS OR OPEN HOLE		
SIZE	LB./FT.	GRADE	DEPTH	SACKS	TYPE	STAGING DEPTH(S)	NO. HOLES	FROM	TO
24"	64#		45'	DP					
13 3/8"	54.5#		946'	900 sx	700 Lt-200 Cl A				
9 5/8"	40#		5480'	1585 sx	1265 Lt-350 Cl A	0-3650			
						3650-5980			

WATER ZONES

WIRE LINE LOGS RUN

FORMATION	FROM	TO	AMOUNT	SERVICE COMPANY	TYPE LOG	INTERVAL LOGGED	COPY TO SURVEY
(Fresh)				Schlumberger	LDT-CNL-GR	100-7937	Yes
-----					DLL-MLL	3450-5498	Yes
					Sonic	940-5490	

FRACTURE OR ACID TREATMENT

SOLUTION MINING

DATE	FROM	TO	QUANTITY	NAME AND NUMBER OF INJECTION AND TARGET WELL - DISTANCE APART
-----				-----

The information in and attached to this report is complete and correct.

SIGNATURE William E Booker	TITLE William E. Booker, Geologist	DATE 2/2/84
-------------------------------	---------------------------------------	----------------

GEOLOGICAL SURVEY FIELD REPORT
Mt. Pleasant

File

11-29-83 - Skipper/Todd

Mineral Well - CONFIDENTIAL

Mecosta, Grant, Hersey
1242-831-354 PPG Oil & Gas

Pularski 1-12

DRILLING

Provins Rig 7 RIH @ 8048. A-1 Ev. 7915 MD. Dev. Surveys

MD	Dev.	TVD	Obs. Dir.	Rect. Co-Ord.	
6112	15½	6108	N33W	49S	74W
6237	25½	6224	N33W		
6330	30½	6307	N30W		
6390	34-3/4	6357	N31W		
6497	37½	6444	N30W		
6672	36½	6584	N30W		
6884	34-3/4	6760	N31W		
6983	35	6837	N29W	352N	315W
7107	35-3/4	6938	N31W		
7263	36	7065	N29W		
7419	34-3/4	7192	N29W		
7576	34-3/4	7320	N29W		
7733	36-3/4	7447	N29W		
7889	37	7571	N29W	814N	565W
7960	37½	7628	N29W	852N	595W

Coring A-1 Ev., wouldn't disclose interval.

+ + + + +

GEOLOGICAL SURVEY

11-29-83

CONFIDENTIAL

File

Mineral Well

Mecosta, Grant, Hersey (Clinton)
PPG Oil & Gas

DRILLING

MD	Dev.	TVD	Dir.	Rect. Co-ordinates	
5800	7/8	5799		76S	52W
5988	7½	5986		70S	63W
6112	15½	6108	N33W	49S	74W

✦ ✦ ✦ ✦ ✦

GEOLOGICAL SURVEY

070 - 2 1983

1. 凡在本行开立存款账户的客户，均可向本行申请开立支票。
 2. 支票的有效期为自签发之日起 10 个工作日内。
 3. 支票的金额不得超过账户余额。
 4. 支票的签发人必须是账户持有人或其授权代理人。
 5. 支票的收款人必须是合法的收款单位或个人。
 6. 支票的签发必须使用蓝色或黑色墨水。
 7. 支票的签发必须填写完整，包括日期、金额、收款人等。
 8. 支票的签发必须加盖预留印鉴。
 9. 支票的签发必须使用本行规定的支票格式。
 10. 支票的签发必须符合相关法律法规的要求。

J. L. WILCOX & ASSOCIATES, INC.
7230 North U.S. 131
MANTON MICHIGAN 49663

(616) 824-6415

TO Geological Survey Division
Dept. of Natural Resources
P. O. Box 30028
Lansing, MI 48909

LETTER OF TRANSMITTAL

DATE	Oct. 25, 1983	JOB NO.	83366
ATTENTION	Supervisor of Wells - Mineral Well		
RE:	WELL ELEVATIONS - PPG cost 4348		
	Pilarski #1-12		
	Permit #1242-831-354		
	Section 12, T16N, R9W		
	Grant Twp., Mecosta Co., Michigan		

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

- ☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☒ Well Elevations

COPIES	DATE	NO.	DESCRIPTION
			GEOLOGICAL SURVEY
			NOV - 4 1983
			MINERAL WELL SECTION

THESE ARE TRANSMITTED as checked below:

- ☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Elevations for subject well are as follows:

Ground = 1199.0

Platform = 1213.9

T KDB = 1215.4

NOTE: above elevations are U.S.G.S. datum.

COPY TO PPG Oil & Gas Co., Inc.

SIGNED: Paul Thomas

STATE OF MICHIGAN



NATURAL RESOURCES COMMISSION

THOMAS J. ANDERSON
T. CAROLLO
JOE A. HOEFER
STEPHEN F. MONSMA
HILARY F. SNELL
PAUL H. WENDLER
HARRY H. WHITELEY

JAMES J. BLANCHARD Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING
BOX 30028
LANSING MI 48909

RONALD O. SKOOG Director

October 10, 1983

Handwritten signature/initials

Mr. Donald P. Smith
PPG Oil & Gas Co., Inc.
2258 Enterprise Drive
Mt. Pleasant, MI 48858

Dear Mr. Smith:

Enclosed is Mineral Well Permit #1242-831-354 to drill and abandon mineral exploration well in C, NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 12, T16N-R9W, Grant Twp., Mecosta County, Michigan. This permit was issued under the provisions of the "Mineral Well Act", Act 315 PA 1969, as amended.

Records of wells drilled under this permit are due within 60 days of completion. For information on contents of these records, please refer to Rule 72(a). These records and supporting information will be held confidential as per Section 17(5) and Rule 73 of the Act.

Whenever possible, please indicate County, Township & Range on each record sent into our office.

Thank you for your cooperation with us on these matters.

Sincerely,

A.J. Rarick

A.J. Rarick, Acting Chief
Mineral Well Unit
Geological Survey Division

AJR:bb
Enclosures

MINERAL WELL PERMIT
For a Test Well(s)

Permit No. 1242-331-354	
Date Issued 10-10-83	Date Expires 04-10-83

Permission is hereby granted to PPG Oil & Gas Co., Inc. (name)
2258 Enterprise Drive, Mt. Pleasant, MI 48858 (address)

to drill and abandon (type of operation) mineral exploration (type of test well(s))
to be located in C, NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 12, T16N-R9W, Grant Twp., Mecosta County, Michigan

<u>Pilarski</u> (well name)	<u>1-12</u> (well number)	<u>Niagaran</u> (formation)	<u>8,000'</u> (intended depth)	<u>RB</u> <u>RF</u> <u>RT</u> <u>GN</u> (elevation)
--------------------------------	------------------------------	--------------------------------	-----------------------------------	---

SPECIAL INSTRUCTIONS:

HOLES TO BE PLUGGED WITH NEAT CEMENT FROM BOTTOM TO TOP.

Permit is subject to the provisions and requirements of Act 315 PA 1969, As Amended, and rules, requirements, or orders issued by the Supervisor of Mineral Wells and the Department of Natural Resources.

SUPERVISOR OF MINERAL WELLS

By: A.J. Larick
Title: A.J. Larick, Acting Chief
Address: Mineral Well Unit
Geological Survey Division
Dept. of Natural Resources
Box 30028, Lansing, MI 48909

Please address all notifications, correspondence, and records to:

Telephone: 517/373-9289

— NOTICE —

1. This permit is issued on the basis of the approved program outlined in the application. No changes or alterations are to be made without the permission and approval of the Supervisor of Mineral Wells or his authorized representative.
2. This permit, or a copy thereof, shall be posted at a conspicuous place at the well location or be in the possession of the driller.
3. It is further made a requirement of this permit that the applicant (or contractor) give notice to the public utilities in accordance with Act 53, Public Acts of 1974, Compiled Laws 460.701 to 460.718 and comply with each of the requirements of the act.
4. An unusual, unexpected, or difficultly controllable large volume of oil, gas, brine or flowing fresh water or a condition hazardous to public health, safety, or waters of the state shall be reported immediately to the Supervisor.

Distribution: Linen-applicant—2-Lansing—3-field—4-applicant.

GEOLOGICAL SURVEY

State of Michigan
Department of Natural Resources
FIELD REVIEW OF PROPOSED WELL SITE

DOT-61-4

MINERAL WELL

1. Date of Inspection: 10-3-83
2. Name of Applicant: PPG Oil & Gas Co. Inc.
3. Well Name & Number: Pilarski 1-12
4. Legal Description: SE NE NE, Sec.12, T16N-QW, Grant Twp., Mecosta Co.
5. ☐ PR or ☐ DJ - Surface Owner: Daniel A. & Sandra A. Pilarski
6. Ownership Pattern: N/A
7. Land Use of the Area: Recreational
8. Cover Type/Density: Open Grass Field
9. Topography: Gently rolling
10. Soil Type & Drainage: Sand- Sandy-loam, Drainage- Good
11. Type, Direction & Distance to Surface Waters: None within 1/4 mi.
12. Well Site Dimensions: (3.7 Acres)
13. Access Road Length, Width, Location, Special Requirements: 600' of new trail will be constructed.
14. Were soil erosion and sedimentation control measures adequately considered?
☒ Yes ☐ No If not, specify additional requirements: _____
15. Wildlife concerns: Minimal
16. Fisheries concerns: Minimal
17. Timber Damage Appraisal (State Surface): N/A
18. Nearby Scenic, Historical or Recreational Areas: None
19. Is it reasonable to expect to encounter H₂S during drilling? Yes
Are proposed drilling practices adequate for H₂S safety? ☒ Yes ☐ No If not, recommend additional requirements: _____
20. Is the Environmental Impact Assessment accurate and acceptable? ☒ Yes ☐ No If not, specify additional site construction requirements and/or restrictions. Comments if any: _____
 - a. Is an unlined earthen pit to receive fresh water muds prior to setting surface casing? ☒ Yes ☐ No If yes, explain: Pit utilized for fluids from the surface to setting point of the surface casing.
 - b. Is a 20 mil PVC liner to be used for pits receiving drilling fluids from below the surface pipe? ☒ Yes ☐ No If no, explain: _____

This document paid for with State funds

20. continued

c. How are salt cuttings to be handled? Cuttings will be dissolved, and brine circulated to the reserve pit.

d. Are all fluids in the lined pit to be removed and disposed of in approved method? ☒ Yes ☐ No If no, explain: _____

e. Are drilling muds and cuttings to be removed or totally encapsulated within the folded over liner and/or an additional impermeable cover as needed, for burial at four feet below grade or deeper? ☒ Yes ☐ No If no, explain: _____

f. Is approval of the encapsulation to be received from the District Geologist? ☒ Yes ☐ No If no, explain: _____

g. During well completion and test procedures, all fluids must be contained in steel tanks and transported to approved facilities for disposal. Comments: _____

Other Department personnel contacted? ☒ Yes ☐ No Comments: Ben Gunning

21. Site Restoration will be addressed upon well completion or site abandonment. At that time the District Geologist will develop specifications in keeping with the State Land Manager's or Surface Owner's objectives. _____

ON THE BASIS OF THE REVIEW FINDINGS:

I ~~XXX~~ DO ☐ DO NOT RECOMMEND ISSUANCE OF A PERMIT TO DRILL THIS SITE.

DISTRICT GEOLOGIST'S COMMENTS: See Addendum to Field Review.

GEOLOGICAL SURVEY DIVISION:

BY:

(signature)

10-3-83

(date)

LAND MANAGER'S COMMENTS: _____

LAND MANAGER (If State Surface):

(signature)

(date)

REGIONAL DIRECTOR'S COMMENTS: _____

REGIONAL DIRECTOR:

BY:

(signature)

(date)

This document paid for with State funds.

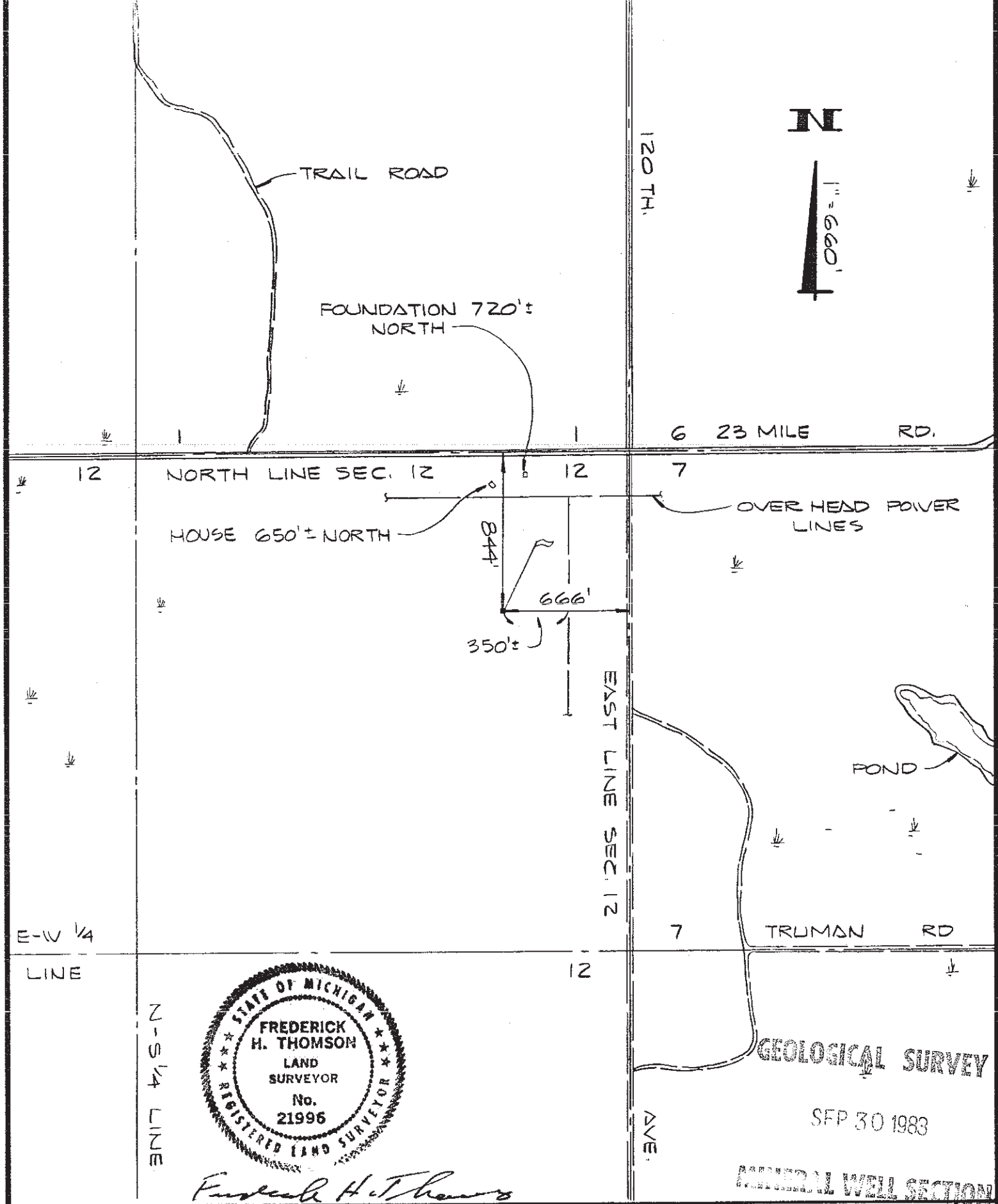
STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

SURVEY RECORD OF WELL LOCATION

(Submit five copies with Application for Permit to Drill a Well for Oil or Gas,
Brine Disposal, Hydrocarbon Storage or Secondary Recovery)

83366

LESSEE (OWNER OF LEASE RIGHTS) PPG OIL & GAS COMPANY, INC.		WELL NO 1-12
LESSOR (OWNER OF MINERAL RIGHTS) (Pilarski 1-12)		
LOCATION SE ¼ OF NE ¼ OF NE ¼ SECTION 12 T. 16 N R. 9 W		
TOWNSHIP Grant	COUNTY Mecosta	
PLAT BELOW REPRESENTS ONE FULL SECTION (1 Mile Square)		
SECTION 12		
(Scale of Plat - 1 inch equals 1320 ft.)		1. Outline drilling unit and spot well location on plat at left. Where drilling unit crosses section lines, divide the plat into an east half and a west half OR a north half and a south half (which ever applies). Outline the unit and locate the well in two directions from NEAREST quarter section and unit lines.
		2. Location of well in two directions from NEAREST quarter section and unit lines is: 844 ft. from North line of Quarter Section (north-south) 666 ft. from East line of Quarter Section (east-west) ft. from line of unit (north-south) ft. from line of unit (east-west)
		3. Describe wellsite marker. Show or describe access route if it is not readily accessible. Wellsite is marked with a painted wood stake. Site can be reached from North off of 23 Mile Road. See supplemental plat. Ground Elevation = 1198.2 feet, U.S.G.S. datum.
4. ON SEPARATE PLAT OR PLOT PLAN: A. Locate, identify, and show distances to all roads, power lines, residences, farm buildings, and other structures within 300 feet of the stake; B. Locate, identify, and show distances to all lakes, streams, swamps, drainage ways or any other surface water features within 1320 feet of the stake		
5. In an ENVIRONMENTAL IMPACT ASSESSMENT describe all structures and surface features shown detailing plans for hazards prevention and erosion control (See instructions and guidelines for preparation of an environmental impact assessment).		
NAME OF INDIVIDUAL WHO SURVEYED WELL SITE Frederick H. Thomson		DATE 9-30-83
ADDRESS J. L. WILCOX & ASSOCIATES, INC. 7230 North U.S.-131		TITLE Surveyor
I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF		
SIGNATURE (LESSEE OR AUTHORIZED REPRESENTATIVE) [Signature]	ADDRESS (IF DIFFERENT THAN LESSEE)	DATE (MONTH DAY YEAR)



Frederick H. Thomson

SUPPLEMENTAL PLAT: PILARSKI
1-12, SECTION 12 T12N-R20W,
GRANT TOWNSHIP, MECOSTA
COUNTY, MICHIGAN

CLIENT: PPG OIL & GAS COMPANY, INC.

DATE
2-29-83
DRN
R.M.
CHD
FHT
SCALE
V: 1"=660'
H: 1"=660'

J.L. WILCOX & ASSOCIATES, INC.
Engineers and Surveyors
7230 N. U.S. - 131 • Manton, Michigan 49663

NOTES
F.B. 81
PG. 73, 74
SHEET
1 OF 1
JOB NO.
83366

SEP 30 1983
GEOLOGICAL SURVEY
PILARSKI WELL SECTION

PPG Oil & Gas Co., Inc.

A Subsidiary of PPG Industries Inc

2258 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949



September 30, 1983

Mr. Al Rarick
Department of Natural Resources
Geological Survey Division
P. O. Box 30028
Lansing, MI 48909

Dear Mr. Rarick:

Re: PPG Oil & Gas Co., Inc. Standard Casing and Cementing
Procedures

Listed below are PPG Oil & Gas Co., Inc. standard casing and cementing procedures:

1. Drive 24 pipe as deep as possible. This allows us to set 20" conductor inside and lower if trouble occurs with washout under conductor pipe while drilling surface hole.
2. Drill 17 1/2" hole to base of drift or to a firm footing as determined by geologist from samples.
3. Run 13 3/8" S.T.C. 48# Seamless H-40 casing equipped with Texas pattern weld on shoe. A float collar is set 30', or one joint, off bottom. The lower 5 joints of casing are strapped across collar in either two or three sectors. Top and bottom cement plugs with no centralizer as recommended by cementing company (see attached).
4. We also run a cement basket approximately 50' below surface, making sure cement is circulated back to surface.
5. We then drill 12 1/4" hole into Bass Islands formation or the Amherstburg if local drilling shows no lost circulation zones in the Bois Blanc and set 9 5/8" L.T.C. 40# N-80 grade pipe with a guide shoe on bottom with float collar first joint up and all bottom 6 joints secured with Weld-A or Baker Lok or some similar material.
6. Centralizers are run per cementer's recommendation attached.
7. For both the surface and intermediate casings, the lower joints of casing are roughened unless they appear rusty as this provides a much better bond for cement.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. Smith'.

Donald P. Smith
Exploration Engineer

GEOLOGICAL SURVEY

SEP 30 1983

DPS/blb
Attachment

Exhibit #1

MINERAL WELL SECTION

Surface Casing (13 3/8" in 17 1/2" hole @ 750')

- A. Use insert float and Texas Pattern Shoe and lock to shoe joint with thread lock.
- B. No centralizers
- C. Circulate hole a minimum of one complete circulation
- D. Do not reciprocate casing
- E. Run bottom (red) wiper plug. Do not use if carrying LCM in cement.
- F. Pump 70 bbls. fresh water ahead of cement
- G. Cement with:
 - 1. 475 sx 50/50 Poz., 6% total gel, 3% CaCl_2
1.54ft³/sk, 13.3#/gal, 7.66 gals/sk
 - 2. 200 sx Class "A", 3% CaCl_2
1.18 ft³/sk, 15.6#/gal, 7.66 gals/sk

Intermediate Casing (9 5/8" in 12 1/4" hole @ 5100')

Recommended Procedure:

- A. Use float collar and guide shoe and lock to shoe joint with Halliburton Weld-A
- B. Run one centralizer 10' above guide shoe and four more at every other collar spacing.
- C. Circulate hole a minimum of one complete circulation and until the drag stabilizes.
- D. Reciprocate casing while circulating and cementing. Stop reciprocation just prior to bumping top plug.
- E. Run bottom (red) wiper plug. Do not use if carrying LCM in cement.
- F. Pump 30 bbls. fresh water ahead of cement.
- G. Cement with enough cement from caliper log to bring cement to surface on all intermediate casing strings.
- H. Run top (black) wiper plug.
- I. Displace with fresh water.

Casing Equipment: (9 5/8")

Regular guide shoe, float collar with auto fill, Halliburton weld-A (2),
Centralizers (5)

PPG Oil & Gas Co., Inc.

A Subsidiary of PPG Industries, Inc

2258 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949



September 30, 1983

Mr. Al Rarick
Department of Natural Resources
Geological Survey Division
4th Floor, Mason Building
P. O. Box 30028
Lansing, MI 48909

Dear Mr. Rarick:

Subject: PPG Oil & Gas Co., Inc. Testing Program

The test well covered by this application is being drilled into the top of the Niagaran formation to approximately 8,000'. The primary objective is evaluation of the potash mineralization of the A-1 Evaporite, which occurred in the interval -7,579' to -7,931' in the Freudenburg 1-31 well located in the SE/4 NE/4 NE/4 of Section 31, T17N, R8W, Osceola County, Michigan.

The testing program will consist of cutting 4" cores through the anticipated potash mineralized section. Then gamma ray, neutron and other geophysical logs will be run at total depth.

Geophysical logs will also be run from the base of the surface casing to total depth. Sample cuttings will be retained and sample descriptions will be submitted with the plugging record. Potential disposal horizons will be drill stem tested.

Sincerely,

A handwritten signature in cursive script that reads 'Donald D. Metzger'.

Donald D. Metzger
Director, Exploration
& Michigan Operations

DDM/blb

GEOLOGICAL SURVEY

SEP 30 1983

Exhibit #2

RECEIVED SECTION



PPG Industries, Inc. 2250 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949

September 30, 1983

Mr. Al Rarick
Department of Natural Resources
Geological Survey Division
4th Floor, Mason Building
P.O. Box 30028
Lansing, MI 48909

Re: Casing Removal and Plugging

Dear Mr. Rarick:

Upon completion of the coring and logging of the test well covered by attached permit application the well may be abandoned and plugged. If not abandoned, change of status will be requested at a later date.

Plugging will consist of running open end drill pipe to T.D. and setting continuous cement plugs to surface. The casing will be cut off at least 3 feet below surface and a 1/2" steel plate welded over the top of surface casing stub.

The cellar will be removed and backfilled according to D.N.R. specifications.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. Smith', written over a horizontal line.

Donald P. Smith
Exploration Engineer

DPS/blb

Exhibit #3

GEOLOGICAL SURVEY

SEP 30 1983

MINERAL WELL SECTION



PPG Industries, Inc 2250 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949

September 30, 1983

Mr. Al Rarick
Department of Natural Resources
Geological Survey Division
4th Floor, Mason Building
P.O. Box 30028
Lansing, MI 48909

Re: Casing Removal and Plugging

Dear Mr. Rarick:

Upon completion of the coring and logging of the test well covered by attached permit application the well may be abandoned and plugged. If not abandoned, change of status will be requested at a later date.

Plugging will consist of running open end drill pipe to T.D. and setting continuous cement plugs to surface. The casing will be cut off at least 3 feet below surface and a 1/2" steel plate welded over the top of surface casing stub.

The cellar will be removed and backfilled according to D.N.R. specifications.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. Smith', written over a horizontal line.

Donald P. Smith
Exploration Engineer

DPS/blb

Exhibit #3

GEOLOGICAL SURVEY

SEP 30 1983

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

c. Johnson 1-6, Permit #36067

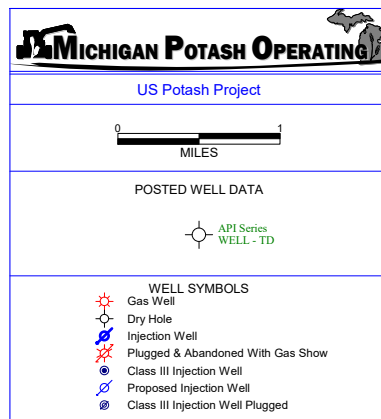
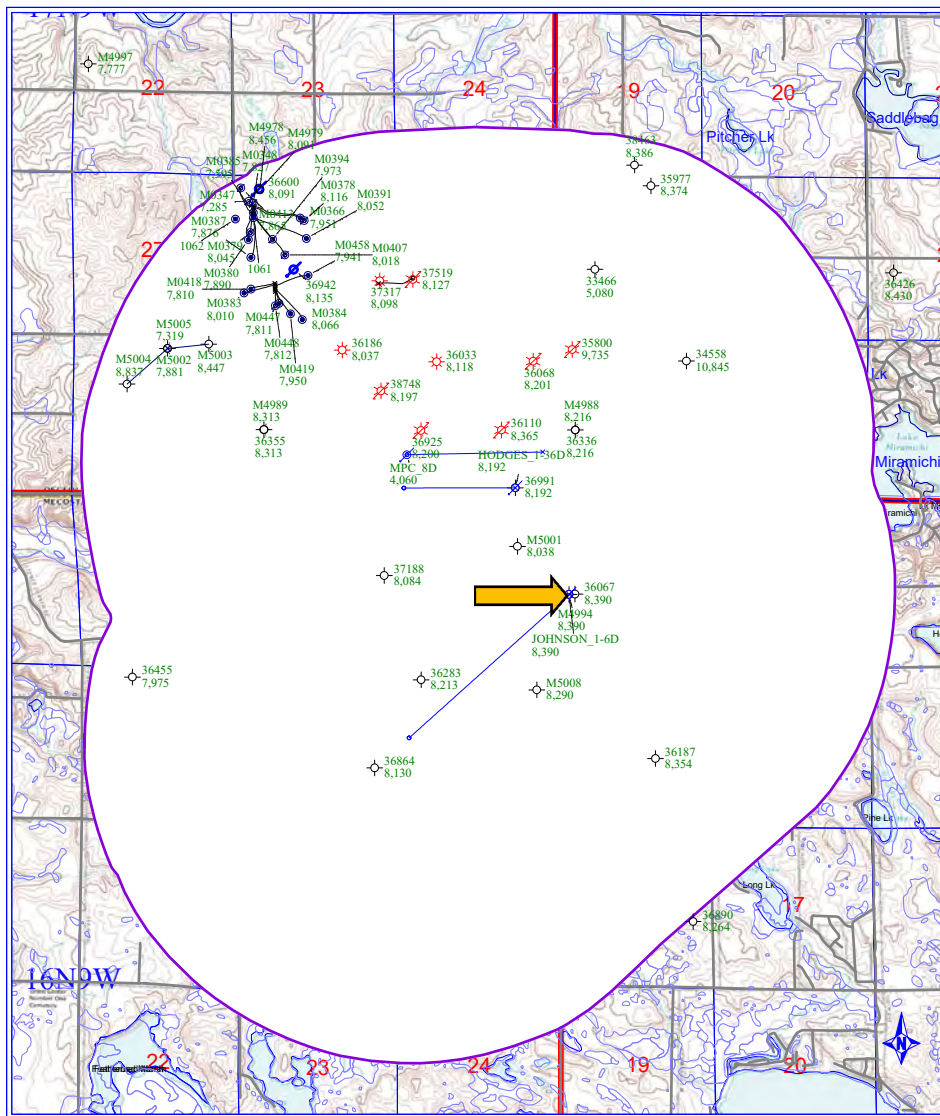


Figure A8. Map showing the wells that penetrate the confining zone in the AOR.

JOHNSON ET AL 1-6
NE NW SW Sec 6 T16N R8W
MECOSTA COUNTY, MI
PROPOSED WELLBORE DIAGRAM

Wellhead

UPDATED December 2021

API No. 21-107-36067-0000

GL @ 1175'

KB @ 1191.5'

WELL COMPLETION DATE: DRY HOLE (NA)

PLUGGING COMPLETION DATE:

11/1/1982

REMEDICATION DATE:

8/12/2021

SURFACE CASING

13 3/8" 48# H-40

SET @ 904' KB

CMT w/950 SX TO SURFACE

Squeeze cement at base of Dundee 4041

6 holes over 2'

Squeezed with 450 sks 65/35 3% CaCl₂

133 sks Class A 3aCl₂

TOC after squeeze is 2148'

Squeeze Hole and cement at 4041.

CIBP at 4180'.

TOC @ 4550'; CIBP @ 5464'

30' Cement over CIBP

INTERMEDIATE CASING

9 5/8" 47# L 80

SET @ 5550' KB

CMT w/250 SX

ID 8.681 Drift 8.525

PLUGGING

380 SX in 1st Open Hole from 7854-6640. Kickoff at 6640.

457 SX POZ in 2nd Open Hole from 8386 to 6640.

Cement Retainer at 5500'.

Reporting 1175 Sx Class A from Retainer up

422 Below Retainer based on Original P&A Report.

(Corrected P&A Report Submitted 12-21-82. Original 12-9-82).

Dundee Top at 3970

Fish 4184 - 4221

AS1-X 95/8" packer 7.9'

X-O 0.30'

X-O 0.70'

1 jt 3.5" drillpipe 31.98'

Kick-off at 6640

7854'

TD @ 8386' KB

JOHNSON 1-6 WELL HISTORY

<u>DATE</u>	<u>DESCRIPTION</u>
9/23/1982	SPUD.
10/17/1982	24" CONDUCTOR SET AT 60' 13 3/8" SET AT 950'; 904 SX 9 5/8" SET AT 5550'; 250 SX DRILL TO 7852.
10/29/1982	SPOT 380 SX CEMENT FROM 7852 TO 6640. Kick-off from 6640 to TD at 8386 REACH TD AT 8390. SPOT 457 SX POZ LITE FROM 8390 UP. SET RETAINER AT 5500. COME OFF RETAINER. SPOT 1175 SX CEMENT FROM RETAINER UP.
8/12/2021	MIRUSU FOR CEMENT REMEDIATION TO COVER DUNDEE DRILL THROUGH CEMENT TO 5437. SQUEEZE HOLES AT 4041, PUMP 450 SX 65/35, 133 SX Class A ESTABLISH CIRCULATION AND PUMP 588 SX 65/35 REMEDIAL CEMENT TO COVER DUNDEE TOC BY BOND LOG AT 2148. CIBP SET AT 4180.

PPG Industries, Inc. 1385-821-354, Johnson 16
NE MW SW 56, T16N, R8W, CHIPPEWA T, MECOSTA Co.
M4994

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

AMENDED 2-1-88

PERMIT NUMBER

1385-821-354

DATE

12-21-82

OWNER OR OPERATOR

PPG Industries, Inc.

ADDRESS

One PPG Place, Pittsburgh, PA 15272

WELL NAME

Johnson

WELL NUMBER

1-6

WELL LOCATION

NE 1/4 NW 1/4 SW 1/4 SEC. 6 T. 16N R. 8W

TOWNSHIP

Chippewa

COUNTY

Mecosta

TYPE OF WELL (Brine, Disposal, Storage, or Test)

Dry Hole

TOTAL DEPTH

8390

FORMATION

Cincinnatian

DATE PLUGGING STARTED

10-29-82

DATE PLUGGING COMPLETED

11-1-82

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

Michael Moss

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	60	----	----	Cement	TD	457 POZ
13 3/8"	904	----	----	Cement Retainer	5550	
9 5/8"	5550	----	----	Cement	5550	Cl A

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

On 10-17-82, well was plugged back from 7852' to 6640' with 270 sacks Regular POZ 4% gel cement and 110 sacks Class A cement, and redrilled. On 10-29-82 ran in spotted 457 sx POZ, pulled up to 5500' and set cement retainer, came off and spotted 1175 sx of Class A.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

GEOLOGICAL SURVEY

Did a Service Company pump mud,
spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Dowell

FEB 5 1983

Was the well plugged by a Company or
contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Permits & Bonding Unit

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

Donald D. Metzger

CERTIFICATE

of Kalium Chemicals

(company):

I state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

ADDRESS

TITLE

11126 140th Ave., Hersey, MI Resident Manager

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

MINERAL WELL COMPLETION REPORT
TO BE FILED WITH THE SUPERVISOR WITHIN 60 DAYS
AFTER COMPLETION OF WELL (ACT 316, P.A. 1969)

SUBMIT IN
TRIPLICATE

AMENDED 12-9-87

NAME OF OWNER OR OPERATOR PPG Industries, Inc.		ADDRESS OF OWNER OR OPERATOR 2258 Enterprise Drive Mt. Pleasant, MI 48858	
NAME OF DRILLING CONTRACTOR T. D. Provins Drilling Company		ADDRESS OF DRILLING CONTRACTOR 2113 Enterprise Drive Mt. Pleasant, MI 48858	
WELL NAME <u>Johnson</u>		WELL NUMBER <u>1-6</u>	PERMIT NUMBER <u>1385-82-3354</u>
LOCATION NE NW SW		SECTION 6	RANGE 8W
TOWNSHIP Chippewa		COUNTY Mecosta	
FOOTAGE <u>460</u> Ft. from <u>North</u> Line and <u>585</u> Ft. from <u>West</u> Line of quarter section N or S or W			
DATE DRILLING COMMENCED 9-23-82	DATE DRILLING COMPLETED 10-29-82	DATE WELL COMPLETED ----	
FORMATION COMPLETED IN Cincinnatian	TOTAL DEPTH 8390	ELEVATION 1191.5	TYPE OF WELL Dry Hole
ROTARY TOOLS From 0 Feet to 8390 Feet		CABLE TOOLS From Feet to Feet	

WELL CASING RECORD

TUBING AND CASING DATA				CEMENTING DATA			PERFORATIONS OR OPEN HOLE		
SIZE	LB./FT.	GRADE	DEPTH	SACKS	TYPE	STAGING DEPTH(S)	NO. HOLES	FROM	TO
24"			60	0		60	NONE		
13 3/8"			904	950		904			
9 5/8"			5550	250		5550			

WATER ZONES

WIRE LINE LOGS RUN

FORMATION	FROM	TO	AMOUNT	SERVICE COMPANY	TYPE LOG	INTERVAL LOGGED	COPY TO SURVEY
(Fresh)				Schlumberger	LDT-CNL-GR	200-8390	
NONE					Sonic	200-8390	
					DLL-MLL	3300-8390	

FRACTURE OR ACID TREATMENT

SOLUTION MINING

DATE	FROM	TO	QUANTITY	NAME AND NUMBER OF INJECTION AND TARGET WELL - DISTANCE APART
NONE				NONE

The information in and attached to this report is complete and correct.

SIGNATURE <i>Donald D. Metzger</i> Donald D. Metzger	TITLE Kalium Chemicals Resident Manager	DATE 12-9-87
--	---	-----------------

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE

Strickler Geological Services, Inc.

1425 SOUTH MISSION ROAD • MT. PLEASANT, MICHIGAN 48858 • (517) 772-2107

December 21, 1982

Department of Natural Resources
Geological Survey Division
P. O. Box 30028
Lansing, MI 48909

Dear Sirs:

Please find enclosed two (2) copies of the Mineral Well Plugging Record and two (2) copies of the Well Plugging Record which have been corrected, on the Johnson #1-6 located in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 6, Chippewa Township, Mecosta County.

If you have any questions, please feel free to contact me.

Sincerely,

William E Booker

William E. Booker

/ljb
Enclosures

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
MINERAL WELL PLUGGING RECORD
File in DUPLICATE Within 30 Days After Plugging is Completed

PERMIT NUMBER

~~36867~~ (1385-821-354)

DATE

12-21-82

OWNER OR OPERATOR

Willmet, Inc.

ADDRESS

2250 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME

Johnson

WELL NUMBER

1-6

WELL LOCATION

NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ SEC. 6 T. 16N R. 8W

TOWNSHIP
Chippewa

COUNTY
Mecosta

TYPE OF WELL (Brine, Disposal, Storage, or Test)

Dry Hole

TOTAL DEPTH
8390

FORMATION
Cincinnatian

DATE PLUGGING STARTED

10-29-82

DATE PLUGGING COMPLETED

11-1-82

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

Michael Moss

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	60	---	---	Cement	TD	457 POZ
13 3/8"	904	---	---	Cement Retainer	5550	
9 5/8"	5550	---	---	Cement	5550	1175
						Cl A

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran in spotted 457 sx POZ, pulled up to 5500' and set cement retainer,
came off and spotted 1175 sx of Class A.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud,
spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:
Dowell

Was the well plugged by a Company or
Contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

Marvin Woods

CERTIFICATE

I, William E. Booker of Stricker Geological Services, Inc. (company),
state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction,
and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

William E. Booker

ADDRESS

1425 S. Mission, Mt. Pleasant, MI

TITLE

Geologist

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

OPERATORS USE

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

Strickler Geological Services, Inc.

1425 SOUTH MISSION ROAD • MT. PLEASANT, MICHIGAN 48858 • (517) 772-2107

December 9, 1982

Mr. Bob Ives
Mineral Wells
Department of Natural Resources
Geological Survey Division
P. O. Box 30028
Lansing, MI 48909

RE: WILLMET, INC.
Johnson #1-6
NE NW SW, Section 6, T16N R8W
Chippewa Township, Mecosta County

Dear Mr. Ives:

Enclosed please find the following on the above referenced dry hole.

1. Mineral Well Plugging Record - 2 copies.
2. Mineral Well Completion Report - 2 copies.
3. Sample Description - 2 copies.

If you have any questions, please feel free to contact me.

Sincerely,

William E. Booker

William E. Booker *W*

/ljb
Enclosures

GEOLOGICAL SURVEY

DEC 11 1982

MINERAL WELLS SECTION

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
MINERAL WELL PLUGGING RECORD
File in DUPLICATE Within 30 Days After Plugging is Completed

PERMIT NUMBER

~~36042~~ (1385-821-354)

DATE

12-9-82

OWNER OR OPERATOR

Willmet, Inc.

ADDRESS

2250 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME

Johnson

WELL NUMBER

1-6

WELL LOCATION

NE ¼ NW ¼ SW ¼ SEC. 6 T. 16N R. 8W

TOWNSHIP

Chippewa

COUNTY

Mecosta

TYPE OF WELL (Brine, Disposal, Storage, or Test)

Dry Hole

TOTAL DEPTH

8390

FORMATION

Cincinnatian

DATE PLUGGING STARTED

10-29-82

DATE PLUGGING COMPLETED

11-1-82

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

Michael Moss

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	60'	---	---	Cement	TD	457 POZ
13 3/8"	904	---	---	Cement Retainer	5550	
9 5/8"	5550	1500	Shot	Cement	5550	1597 C1 A

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Cut and pulled casing - 1500', ran in spotted 457 sx POZ, pulled up to 5500'
and set cement retainer, came off and spotted 1597 sx of Class A.

DEC 2 1982

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud,
spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Dowell

Was the well plugged by a Company or
Contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

Marvin Woods

CERTIFICATE

I, William E. Booker of Strickler Geological Services, Inc. (company),
state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction,
and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

ADDRESS

TITLE

1425 S. Mission, Mt. Pleasant MI

Geologist

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

[illegible]

Supplemental Plugging Data and Site Conditions:

Supplemental Plugging Data and Site Conditions:

MINERAL WELL COMPLETION REPORT
TO BE FILED WITH THE SUPERVISOR WITHIN 60 DAYS
AFTER COMPLETION OF WELL (ACT 315, P.A. 1969)

SUBMIT IN
TRIPLICATE

PN 1385-821-35

NAME OF OWNER OR OPERATOR Willmet, Inc.		ADDRESS OF OWNER OR OPERATOR 2250 Enterprise Drive Mt. Pleasant, MI 48858	
NAME OF DRILLING CONTRACTOR T. D. Provins Drilling Company		ADDRESS OF DRILLING CONTRACTOR 2113 Enterprise Drive Mt. Pleasant, MI 48858	
WELL NAME Johnson	WELL NUMBER 1-6	PERMIT NUMBER 36067	
LOCATION NE NW SW	SECTION 6	TWP. 16N	RANGE 8W
TOWNSHIP Chippewa	COUNTY Mecosta		
FOOTAGE 460 Ft. from North Line and 585 Ft. from West Line of quarter section N or S E or W			
DATE DRILLING COMMENCED 9-23-82	DATE DRILLING COMPLETED 10-29-82	DATE WELL COMPLETED ---	TYPE OF WELL Dry Hole
FORMATION COMPLETED IN Cincinnatian	TOTAL DEPTH 8390	ELEVATION 1191.5	KB RB RT RF GN 1175
ROTARY TOOLS From 0 Feet to 8390 Feet		CABLE TOOLS From Feet to Feet	

WELL CASING RECORD

TUBING AND CASING DATA				CEMENTING DATA			PERFORATIONS OR OPEN HOLE		
SIZE	LB./FT.	GRADE	DEPTH	SACKS	TYPE	STAGING DEPTH(S)	NO. HOLES	FROM	TO
24"			60	0		60	NONE		
13 3/8"			904	950		904			
9 5/8"			5550	250	class 'A'	5550			

WATER ZONES

WIRE LINE LOGS RUN

FORMATION	FROM	TO	AMOUNT	SERVICE COMPANY	TYPE LOG	INTERVAL LOGGED	COPY TO SURVEY
(Fresh)				Schlumberger	LDT-CNL-GR	200-8390	
					Sonic	200-8390	
NONE					DLL-MLL	3300-8390	

FRACTURE OR ACID TREATMENT

SOLUTION MINING

DATE	FROM	TO	QUANTITY	NAME AND NUMBER OF INJECTION AND TARGET WELL - DISTANCE APART
NONE				NONE

The information in and attached to this report is complete and correct.

SIGNATURE William Booker	TITLE William E. Booker, Geologist	DATE 12/6/82
-----------------------------	---------------------------------------	-----------------

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE

FORMATION RECORD

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

EVALUATION USED: ☐ KB ☐ RT ☐ RF ☐ GR			GEOLOGIST NAME:			TOPS TAKEN FROM: ☐ SAMPLE LOG ☐ ELECTRIC LOG		
FROM	TO	FORMATION (TYPE, COLOR, ETC.)	FROM	TO	FORMATION (TYPE, COLOR, ETC.)			
IF WELL WAS CORED, ATTACH CORE DESCRIPTION AND ANALYSIS								
LIST ATTACHMENTS:								
GEOLOGICAL SURVEY USE ONLY								
REVIEWED BY								



WILLMET, INC.

2250 ENTERPRISE DRIVE • MOUNT PLEASANT, MICHIGAN 48858
517 • 773 • 3949

October 29, 1982

Mr. Robert E. Ives, Supervisor
Mineral Wells
State of Michigan
Department of Natural Resources
Geological Survey Division
P. O. Box 30028
Lansing, MI 48909

Re: Sidetrack of the Johnson 1-6

Dear Mr. Ives:

As discussed with your personnel prior to taking the action, Willmet plugged back and sidetracked the Johnson 1-6 located in the NW/4 of SW/4, Section 6, T16N, R8W, Mecosta County, Michigan. This operation was made necessary due to a mechanical problem which occurred during a coring operation which resulted in loss of the core. A cement plug was set with the top of the cement being at 6,640 feet, and the well was sidetracked to the east approximately 40'.

We were informed prior to conducting this sidetracking operation that no permit was required. This letter is for your information and for file purposes.

Sincerely,

Donald D. Metzger
Director, Exploration
& Michigan Operations

DDM/jlc

cc: Al Rarick

GEOLOGICAL SURVEY

NOV 1 - 1982

MINERAL WELL SECTION

TO: Innarah Kothacamury

FROM: Wayne T. Todd

SUBJECT: T.O.C.

OUR JOB NO.

DATE OF MEMO

1-6-83

MESSAGE

Innarah here are the T.O.C. you requested on the following wells:
Johnson 1-6 - 4550', Park 1-12 - 4040', Stien 1-7 - 4630',
Thompson 3-36 - 4000', Wark 1-30 - 4700', Paine 1-35 -
Cement 5525' to 4400' then 3349' to surface, DV tool at 3349'

SENDER - DO NOT WRITE BELOW THIS LINE

SIGNED

Wayne T. Todd

REPLY

FILED IN

WILLIAMS

JOHNSON 1-6

SIGNED

DATE

ORIGINAL

SENDER - Retain part 2 for your follow-up, send parts 1 and 3 to addressee
RECIPIENT - Retain part 1 and return part 3

MINERAL WELL PERMIT
For a Test Well(s)

Permit No. 1385-821-354	
Date Issued 9/2/82	Date Expires 3/2/83

Permission is hereby granted to WILLMET, INC.
(name)
2250 Enterprise Dr., Mt. Pleasant, Michigan 48858
(address)

to drill & abandon mineral exploration
(type of operation) (type of test well(s))
to be located in NE/4 NW/4 SW/4 Section 6, T16N-R8W, Chippewa Twp., Mecosta County

<u>Johnson 1-6</u> (well name)	<u> </u> (well number)	<u>Nlagaran</u> (formation)	<u>8,000' ±</u> (intended depth)	<u>RB</u> RF <u>GN</u> (elevation)
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SPECIAL INSTRUCTIONS:

24 HOUR NOTIFICATION PRIOR TO STARTING DATE, CASING, CEMENTING AND PRESSURE TESTS
AND LOGGING ACTIVITIES IS REQUIRED.

Permit is subject to the provisions and requirements of Act 315 PA 1969, As Amended, and rules, requirements, or orders issued by the Supervisor of Mineral Wells and the Department of Natural Resources.

SUPERVISOR OF MINERAL WELLS

By: Innaiah Pothacamary
Title: Supervisor of Test Wells
Address: Mineral Well Unit
Geological Survey Division
DNR
Box 30028
Lansing, MI 48909
Telephone: (517) 373-9289

Please address all notifications, correspondence, and records to:

— NOTICE —

1. This permit is issued on the basis of the approved program outlined in the application. No changes or alterations are to be made without the permission and approval of the Supervisor of Mineral Wells or his authorized representative.
2. This permit, or a copy thereof, shall be posted at a conspicuous place at the well location or be in the possession of the driller.
3. It is further made a requirement of this permit that the applicant (or contractor) give notice to the public utilities in accordance with Act 53, Public Acts of 1974, Compiled Laws 460.701 to 460.718 and comply with each of the requirements of the act.
4. An unusual, unexpected, or difficultly controllable large volume of oil, gas, brine or flowing fresh water or a condition hazardous to public health, safety, or waters of the state shall be reported immediately to the Supervisor.

Distribution: Linen-applicant—2-Lansing—3-field—4-applicant.



WILLMET, INC.

2250 ENTERPRISE DRIVE • MOUNT PLEASANT, MICHIGAN 48858
517 • 773 • 3949

August 30, 1982

State of Michigan
Department of Natural Resources
P. O. Box 30028
Lansing, Michigan 48909

Attention: Mr. Bob Ives

Re: Request for Test Well Permit
under Mineral Well Act,
NE/4 NW/4 SW/4 of Sec. 6,
T16N, R8W, Mecosta County,
Michigan

Dear Mr. Ives:

An application for a Mineral Test Well for the Johnson 1-6, at the referenced location, was submitted on August 13, 1982. This application provided for directional drilling so that the bottom-hole location would be 95' east of the surface location. In view of the current interpretation that directional drilling is prohibited under the Mineral Well Act, please consider this letter as a revision to that application, with a revised bottom-hole location corresponding to the surface location.

Your cooperation is appreciated.

Sincerely,

Donald P. Smith
Exploration Engineer

DPS/jlc

cc: Ty Black
Wayne Todd
Sam Alguire

GEOLOGICAL SURVEY

SEP 1 1982

MINERAL WELL SECTION

State of Michigan
Department of Natural Resources
Geological Survey Division

FIELD REVIEW OF PROPOSED WELL SITE
(RETURN to Geological Survey)

Date of Inspection: 8-17-82

1. Name of Applicant: Willmet, Inc.
2. Well Name & Number: Johnson 1-6
3. Legal Description: NE NW SW Sec 6 T16N-R8W Chippewa Township Mecosta County
4. Surface Owner: Donald W. and E. Caroline Johnson
(If other than mineral owner)
5. Topography: Gently Sloping
6. Cover Type/Density: Mostly open with scattered Pine, Cherry, Maple and Elm.
7. Land Utilization: Agricultural and Recreational uses
8. Is there any type of surface water nearer than one-quarter (1/4) mile? No
(Specify direction and distance)
9. Is the Environmental Impact Assessment accurate and acceptable? Yes
10. Have necessary soil erosion and sedimentation control measures been adequately considered? Yes
11. Are there any special drill site construction requirements and restrictions? No
(Specify)

Inspected by: W. J. Toal 8-19-82
(signature) (date)

By the signature below of the agent of applicant, the applicant agrees to implement specifications stated in Item #11 above.

(signature) (date)

(title) (date)

GEOLOGICAL SURVEY

SEP 1 1982

R 7518 - 1
4/75

PROPOSED WELL SECTION



WILLMET INCORPORATED

2250 ENTERPRISE DRIVE • MOUNT PLEASANT, MICHIGAN 48858
517 • 773 • 3949

August 13, 1982

State of Michigan
Department of Natural Resources
P. O. Box 30028
Lansing, Michigan 48909

Attn.: Mr. Robert Ives

Re: Request for Test Well Permit under
Mineral Well Act, NE/4 NW/4 of SW/4,
Section 6, T16N-R8W, Mecosta County, MI

Dear Mr. Ives:

Enclosed herewith please find our check in the amount of \$1.00 for the fee for a Mineral Test Well Application for the above noted location. This Mineral Test Well Application is submitted as a replacement for the Test Well Permit, No. 10036, for the Johnson 1-6 located in the SE/4 SE/4 NW/4, Section 6, T16N-R8W, Mecosta County, Michigan. Please cancel this latter permit, as it is now inappropriate to drill at that location in view of this newly proposed location.

We will arrange to have J. L. Wilcox & Associates do an elevation survey within ten (10) days after spud date of the above well.

Please note that an application for an Oil & Gas Drilling Permit for this location is being submitted simultaneously with this application. It is our understanding that this drilling activity will be conducted jointly under Acts 315 and 61 as per the letter from R. Thomas Segall, Assistant Supervisor of Wells, to Mr. Donald D. Metzger, dated August 4, 1982.

While sour oil and gas zones are not expected, good drilling practices and proper fluid density will be employed and should readily control such occurrences. Procedures regarding the use of hydrogen sulfide signs, flags and wind indicators will be employed. Fresh air breathing apparatus will be available at the well site. Part 2 of the Oil & Gas Sour Gas Contingency Plan, although not required for this well, is attached for reference purposes.

It is requested that all information be kept confidential as the regulations allow.

Sincerely,

Donald D. Metzger
Director, Exploration and
Michigan Operations

DDM:pka

GEOLOGICAL SURVEY

AUG 16 1982

MINERAL WELL SECTION

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

APPLICATION FOR A MINERAL WELL PERMIT

To Drill, Operate, Convert, or Rework
a Brine, Storage, Disposal, or Test Well.

By Authority of Act 315, P. A. 1969

1. DATE OF APPLICATION August 13, 1982		2. FEE ENCLOSED \$1.00	
3. APPLICATION TO Drill			
4. TYPE MINERAL WELL D-5 (Test Well)		5. WELL DESIGNATION Johnson 1-6	
6. LOCATION: NE/4 of the NW/4 of the SW 1/4 SEC. 6 T 16N R 8W			
7. TOWNSHIP Chippewa		8. COUNTY Mecosta	

9. APPLICANT Willmet, Inc.		10. TELEPHONE (517)773-3949	
11. ADDRESS (Street, City, State) 2250 Enterprise Drive, Mt. Pleasant, MI 48858		12. ZIP CODE 48858	
13. SURETY OR SECURITY COMPANY Hartford Accident & Indemnity Co.		14. TYPE ☐ SINGLE ☒ BLANKET	
15. AMOUNT \$5,000		16. BOND NO. 4486243	
17. OWNER OR SURFACE RIGHTS Donald W. & E. Caroline Johnson		18. OWNER OR MINERAL RIGHTS Donald W. Johnson, et ux.; Carrie M. Pangborn	
19. DRILLING CONTRACTOR T. D. Provins Drilling		20. ADDRESS P. O. Box 642, Mt. Pleasant, MI 48858	
21. TELEPHONE (517)773-6946		22. TYPE DRILLING TOOLS ☐ CABLE ☒ ROTARY ☐ COMBINATION	
23. FORMATION Niagaran		24. INTENDED DEPTH 8,000'	
25. PROJECT ENGINEER OR GEOLOGIST W. J. Strickler (to A-1 Carbonate) D. Metzger, C. Jones (from A-1 to TD)		26. ADDRESS 2250 Enterprise Dr., Mt. Pleasant, MI 48858	
27. TELEPHONE (517)773-3949		28. PROGRAM OF DRILLING, CONVERTING, REWORKING, CASING, CEMENTING, COMPLETING, OPERATING, AND MONITORING. (See appropriate instruction sheet. Attach 3 copies of proposed program — including but not necessarily limited to information requested in the instruction sheet.)	

CASING PROGRAM:
Size Depth Cement

Exhibit 1, 2, 3 enclosed

GEOLOGICAL SURVEY

AUG 23 1982

MINERAL WELL SECTION

INSTRUCTION SHEET NO.		
Type of Well	Drill-New	Rework*
Brine	D-1	R-1
Storage	D-2	R-1
Disposal	D-3	R-1
Solution Mining	D-4	R-2
Test Well	D-5	R-1

*Rework, Deepen, or Convert to New Use.

THERE WILL BE NO CHANGES IN THE PROGRAM OUTLINED IN THIS APPLICATION WITHOUT APPROVAL OF THE SUPERVISOR OF MINERAL WELLS OR HIS AUTHORIZED REPRESENTATIVE.

29. ADDRESS CORRESPONDENCE AND PERMIT TO: Willmet, Inc., 2250 Enterprise Dr., Mt. Pleasant, MI 48858	30. TELEPHONE (517)773-3949
---	--------------------------------

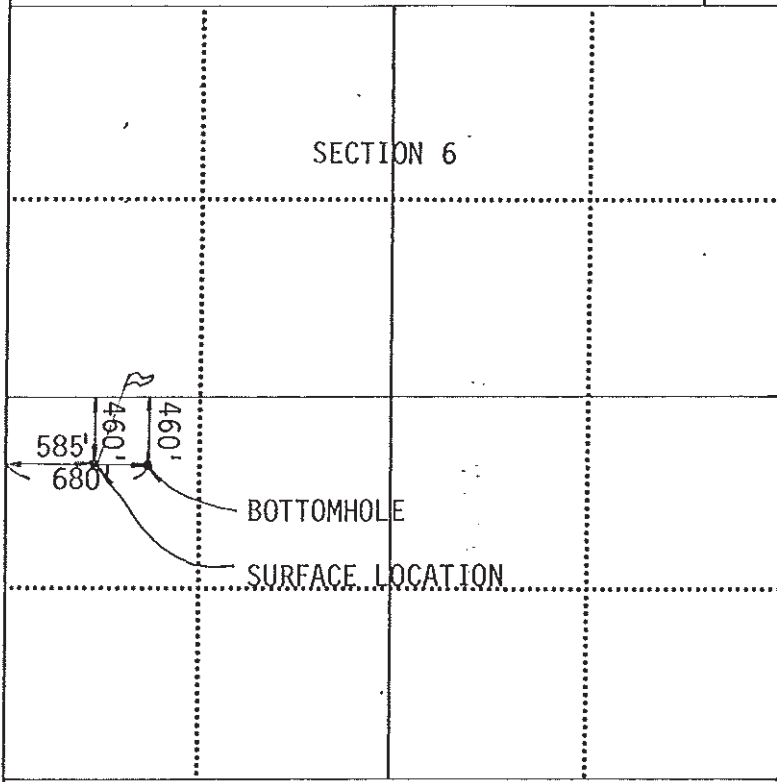
MINERAL WELL SECTION USE ONLY		The Applicant agrees to comply with provisions and requirements of Act 315, P.A. 1969, and asserts that the information on this application and attached report is true and correct.	
STATUS OF BOND		SIGNATURE (APPLICANT/AUTHORIZED REP.)	
APPLICATION APPROVED BY		DATE	
PERMIT NUMBER 1385-821-354		Donald P. Smith	
DATE ISSUED 9/2/82		Exploration Engineer	
ISSUED BY IP		FOR CASHIER'S USE ONLY	
DISTRIBUTION: White — Lansing Canary — Field Pink — Applicant		R 7500 2/73	

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

SURVEY RECORD OF WELL LOCATION

(Submit five copies with Application for Permit to Drill a Well for Oil or Gas,
Brine Disposal, Hydrocarbon Storage or Secondary Recovery)

82266

LESSEE (OWNER OF LEASE RIGHTS)	
WILLMET, INC.	
LESSOR (OWNER OF MINERAL RIGHTS)	WELL NO.
Donald Johnson (Johnson 1-6)	1-6
LOCATION	
NE ¼ OF NW ¼ OF FR'L SW ¼ SECTION 6 T. 16N R. 8W	
TOWNSHIP	COUNTY
Chippewa	Mecosta
PLAT BELOW REPRESENTS ONE FULL SECTION (1 Mile Square)	1. Outline drilling unit and spot well location on plat at left. Where drilling unit crosses section lines, divide the plat into an east half and a west half OR a north half and a south half (which ever applies). Outline the unit and locate the well in two directions from NEAREST quarter section and unit lines. 2. Location of well in two directions from NEAREST quarter section and unit lines is: SURFACE LOCATION 460 ft. from North line of Quarter Section (north-south) 585 ft. from West line of Quarter Section (east-west) ____ ft. from ____ line of unit (north-south) ____ ft. from ____ line of unit (east-west) 3. Describe wellsite marker. Show or describe access route if it is not readily accessible. Wellsite is marked with a painted wood stake. Site can be reached from the North off of county trail road, Evergreen Road. See supplemental plat.
SECTION 6  (Scale of Plat - 1 inch equals 1320 ft.)	
4. ON SEPARATE PLAT OR PLOT PLAN:	
A. Locate, identify, and show distances to all roads, power lines, residences, farm buildings, and other structures within 300 feet of the stake;	
B. Locate, identify, and show distances to all lakes, streams, swamps, drainage ways or any other surface water features within 1320 feet of the stake.	
5. In an ENVIRONMENTAL IMPACT ASSESSMENT describe all structures and surface features shown detailing plans for hazards prevention and erosion control (See instructions and guidelines for preparation of an environmental impact assessment).	
NAME OF INDIVIDUAL WHO SURVEYED WELL SITE	
Frederick H. Thomson, LS#21996	
DATE	
8-12-82	
TITLE	
Surveyor	
ADDRESS	
J. L. WILCOX & ASSOCIATES, INC. 7230 North U.S.-131 Manton, Michigan 49663	
I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF	
SIGNATURE (LESSEE OR AUTHORIZED REPRESENTATIVE)	DATE (MONTH, DAY, YEAR)
D. Smith	Aug 13/82





N-S 1/4 LINE

120TH. AVE.

TRAIL ROAD

RED PINES

EVERGREEN

WET AREA

6

585'

260'±

175'±

175'± WEST TO EDGE OF PLANTED RED PINES

POWER LINE WIRES 30'± ABOVE GROUND

WEST LINE SEC. 6

GEOLOGICAL SURVEY

AUG 16 1982

CANAL WELL SECTION

23 MILE RD. 1

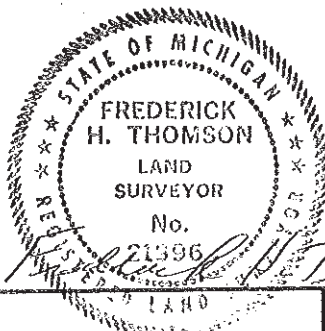
6 SOUTH LINE SEC. 6

12

7

7

POGY LAKE



SUPPLEMENTAL PLAT: JOHNSON
#1-6, SECTION 6, T16N-R8W,
CHIPPEWA COUNTY, MICHIGAN

CLIENT: WILLMET INC.

DATE
8-12-82
ORN. R.M.
CHD. FHT
SCALE
V. 1" = 660'

J.L. WILCOX & ASSOCIATES, INC.
Engineers and Surveyors
7230 N. U.S. - 131 • Manton, Michigan 49663

NOTES
F.B. 173
PG. 43-44

SHEET
1 OF 1

JOB NO.
82266

WILLMET INC.
JOHNSON 1-6
MECOSTA COUNTY MICHIGAN

VERTICAL SECTION 1 IN. = 300 FT.

feet

6400

H.O.P.O. 6353' H.D.
BUILD - 2.33'/103'

6700

MAXIMUM ANGLE 0.20'
AT 6703' H.D.
6703' TVD. 15' DISP.

7000

START 1.23'/103' DEEP
AT 7077' H.D.
7077' TVD. 53' DISP.

7300

24' VERTICAL AT 7333' H.D.
7333' TVD.

7600

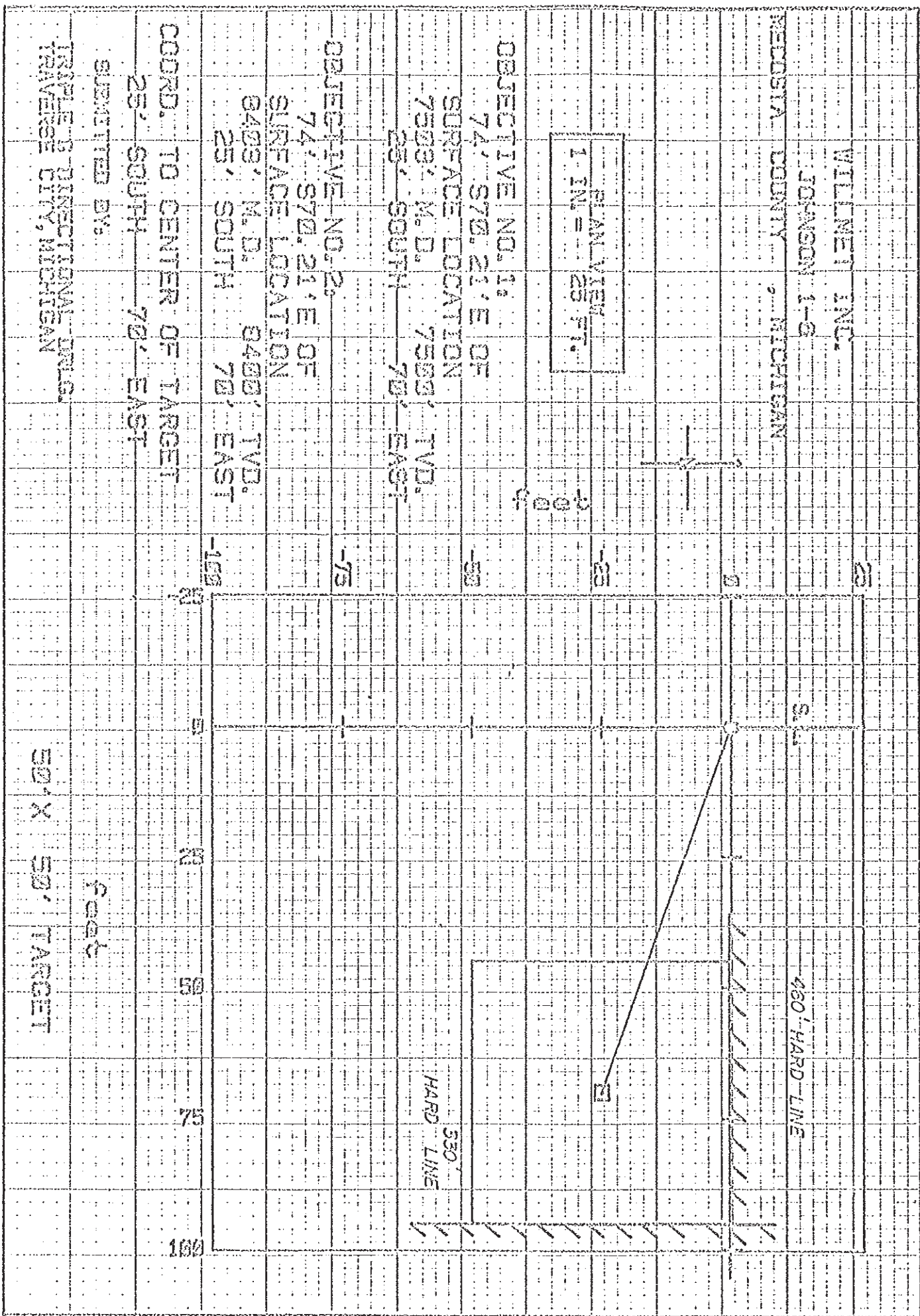
7900

8200

24' 8403' H.D.
8403' TVD.

8500

3000





WILLMET, INC.

2250 ENTERPRISE DRIVE • MOUNT PLEASANT, MICHIGAN 48858
517 • 773 • 3949

August 13, 1982

Mr. Robert E. Ives
Department of Natural Resources
Geological Survey Division
4th Floor, Mason Building
P. O. Box 30028 Lansing, MI 48909

Dear Mr. Ives:

Subject: Willmet Standard Casing and Cementing Procedures

Listed below are Willmet's standard casing and cementing procedures:

1. Drive 24" conductor pipe as deep as possible. This allows us to set 20" conductor inside and lower if trouble occurs with washout under conductor pipe while drilling surface hole.
2. Drill 17 1/2" hole to base of drift or to a firm footing as determined by geologist from samples.
3. Run 13 3/8" S.T.C. 48# Seamless H-40 casing equipped with Texas pattern weld on shoe. A float collar is set 30', or one joint, off bottom. The lower 5 joints of casing are strapped across collar in either two or three sectors. Top and bottom cement plugs with no centralizer as recommended by cementing company (see attached).
4. We also run a cement basket approximately 50' below surface, making sure cement is circulated back to surface.
5. We then drill 12 1/4" hole 50' into Bass Islands formation or the Amherstburg if local drilling shows no lost circulation zones in the Bois Blanc and set 9 5/8" L.T.C. 40# N-80 grade pipe with a guide shoe on bottom with float collar first joint up and all bottom 6 joints secured with Weld-A or Baker Lok or some similar material.
6. Centralizers are run per cementer's recommendation attached.
7. For both the surface and intermediate casings, the lower joints of casing are roughened unless they appear rusty as this provides a much better bond for cement.

Sincerely,

Donald P. Smith
Exploration Engineer

DPS/jlc

Attachment

Exhibit #1

GEOLOGICAL SURVEY

AUG 16 1982

GENERAL WELL SECTION

Surface Casing (13 3/8" in 17 1/2" hole @ 750 ft.

- A. Use insert float and Texas Pattern Shoe and lock to shoe joint with thread lock.
- B. No centralizers
- C. Circulate hole a minimum of one complete circulation
- D. Do not reciprocate casing
- E. Run bottom (red) wiper plug.
Do not use if carry LCM in cement
- F. Pump 70 bbls fresh water ahead of cement
- G. Cement with:
 - 1. 475 sx 50/50 Poz, 6% total Gel, 3% CaCl_2
1.54 ft³/sk, 13.3#/gal, 7.66 gals/sk
 - 2. 200 sx Class "A", 3% CaCl_2
1.18 ft³/sk, 15.6#/gal, 7.66 gals/sk

Intermediate Casing: (9 5/8 in 12 1/4" hole @ 5100 ft)

Recommended Procedure:

- A. Use float collar and guide shoe and lock to shoe joint with Halliburton Weld-A
- B. Run one centralizer 10' above guide shoe and four more at every other collar spacing.
- C. Circulate hole a minimum of one complete circulation and until the drag stabilizes.
- D. Reciprocate casing while circulating and cementing. Stop reciprocation just prior to bumping top plug.
- E. Run bottom (red) wiper plug.
Do not use if carrying LCM in cement
- F. Pump 30 bbls fresh water ahead of cement.
- G. Cement with:
 - 1. 150 sx Special Cement

NOTE: State requires 500' of annulus fillup and a minimum of 150 sx for intermediate casing.

- H. Run top (black) wiper plug.
- I. Displace with fresh water.

Casing Equipment: (9 5/8)

Regular Guide Shoe
Float Collar with Auto Fill
Halliburton Weld-A (2)
Centralizers (5)

GEOLOGICAL SURVEY

AUG 16 1969

INDUSTRIAL RESEARCH SECTION



WILLMET, INC.

2250 ENTERPRISE DRIVE • MOUNT PLEASANT, MICHIGAN 48858
517 • 773 • 3949

August 13, 1982

Mr. Robert E. Ives
Department of Natural Resources
Geological Survey Division
4th Floor, Mason Building
P. O. Box 30028
Lansing, MI 48909

Dear Mr. Ives:

Subject: Willmet Testing Program

The test well covered by this application is being drilled into the top of the Niagaran formation to approximately 8,000'. The primary objective is evaluation of the potash mineralization of the A-1 Evaporite, which occurred in the interval -7,579' to -7,931' in the Freudenburg 1-31 well located in the SE/4 NE/4 NE/4 of Section 31, T17N, R8W, Osceola County, Michigan.

The testing program will consist of cutting 4" cores through the anticipated potash mineralized section. Then gamma ray, neutron and other geophysical logs will be run at total depth.

Geophysical logs will also be run from the base of the surface casing to total depth. Sample cuttings will be retained and sample descriptions will be submitted with the plugging record. Hydrocarbon shows will be drill stem tested.

Sincerely,

Donald D. Metzger
Director, Exploration
& Michigan Operations

DDM/jlc

Exhibit #2



WILLMET, INC.

2250 ENTERPRISE DRIVE • MOUNT PLEASANT, MICHIGAN 48858
517 • 773 • 3949

August 13, 1982

Mr. Robert E. Ives
Department of Natural Resources
Geological Survey Division
4th Floor, Mason Building
P. O. Box 30028
Lansing, Michigan 48909

Dear Mr. Ives:

Subject: Casing Removal and Plugging

Upon completion of the coring and logging of the test well covered by attached permit application the well will be abandoned and plugged as follows:

1. Removal of well head used for drilling.
2. Weld on to existing intermediate casing string.
3. Run "free point" to determine amount of casing which can easily be recovered above the top of cement.
4. Run explosive type casing cutter and cut casing.
5. Lay down recovered casing and proceed to plug hole.

Plugging will consist of running open end drill pipe to T.D. and setting continuous cement plugs to surface. The casing will be cut off at least 3 feet below surface and a 1/2" steel plate welded over the top of surface casing stub.

The wooden cellar will be removed and backfilled according to D.N.R. specifications.

Sincerely,

Donald P. Smith
Exploration Engineer

DPS/jlc

d. Johnson 2-1, Permit #00377

Strickler Geological Services, Inc.

1425 SOUTH MISSION ROAD • MT. PLEASANT, MICHIGAN 48858 • (517) 772-2107

December 21, 1982

Department of Natural Resources
Geological Survey Division
P. O. Box 30028
Lansing, MI 48909

Dear Sirs:

Please find enclosed two (2) copies of the Mineral Well Plugging Record and two (2) copies of the Well Plugging Record which have been corrected, on the Johnson #1-6 located in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 6, Chippewa Township, Mecosta County.

If you have any questions, please feel free to contact me.

Sincerely,

William E Booker

William E. Booker

/ljb
Enclosures

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
MINERAL WELL PLUGGING RECORD
File in DUPLICATE Within 30 Days After Plugging is Completed

PERMIT NUMBER 36867 (1385-821-354)	DATE 12-21-82
--	------------------

OWNER OR OPERATOR Willmet, Inc.		
ADDRESS 2250 Enterprise Drive, Mt. Pleasant, MI 48858		
WELL NAME Johnson		WELL NUMBER 1-6
WELL LOCATION NE 1/4 NW 1/4 SW 1/4 SEC. 6 T. 16N R. 8W		TOWNSHIP Chippewa
		COUNTY Mecosta
TYPE OF WELL (Brine, Disposal, Storage, or Test) Dry Hole		FORMATION Cincinnatian
TOTAL DEPTH 8390		
DATE PLUGGING STARTED 10-29-82	DATE PLUGGING COMPLETED 11-1-82	WAS PERMISSION OF DEPT. OF NATURAL RESOURCES OBTAINED BEFORE PLUGGING BEGAN? ☒ YES ☐ NO
NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING Michael Moss		

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	60	---	---	Cement	TD	457 POZ
13 3/8"	904	---	---	Cement Retainer	5550	
9 5/8"	5550	---	---	Cement	5550	1175
						Cl A

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran in spotted 457 sx POZ, pulled up to 5500' and set cement retainer,
came off and spotted 1175 sx of Class A.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging? ☐ YES ☒ NO If yes, give details:

Did a Service Company pump mud, spot cement, or set bridge plugs? ☒ YES ☐ NO If yes, give name and address: Dowell

Was the well plugged by a Company or Contractor other than Owner or Operator? ☐ YES ☒ NO If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

Marvin Woods

CERTIFICATE

I, William E. Booker of Stricker Geological Services, Inc. (company), state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE <u>William E. Booker</u>	ADDRESS 1425 S. Mission, Mt. Pleasant, MI	TITLE Geologist
---------------------------------------	--	--------------------

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE	DATE
DEPARTMENT REPRESENTATIVE	DATE

OPERATORS USE

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

Strickler Geological Services, Inc.

1425 SOUTH MISSION ROAD • MT. PLEASANT, MICHIGAN 48858 • (517) 772-2107

December 9, 1982

Mr. Bob Ives
Mineral Wells
Department of Natural Resources
Geological Survey Division
P. O. Box 30028
Lansing, MI 48909

RE: WILLMET, INC.
Johnson #1-6
NE NW SW, Section 6, T16N R8W
Chippewa Township, Mecosta County

Dear Mr. Ives:

Enclosed please find the following on the above referenced dry hole.

1. Mineral Well Plugging Record - 2 copies.
2. Mineral Well Completion Report - 2 copies.
3. Sample Description - 2 copies.

If you have any questions, please feel free to contact me.

Sincerely,

William E. Booker

William E. Booker *W*

/ljb
Enclosures

GEOLOGICAL SURVEY

DEC 10 1982

MINERAL WELLS SECTION

THE UNIVERSITY OF CHICAGO
LIBRARY

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
MINERAL WELL PLUGGING RECORD
File in DUPLICATE Within 30 Days After Plugging is Completed

PERMIT NUMBER 36067 (1385-821-354)
DATE 12-9-82

OWNER OR OPERATOR Willmet, Inc.		
ADDRESS 2250 Enterprise Drive, Mt. Pleasant, MI 48858		
WELL NAME Johnson		WELL NUMBER 1-6
WELL LOCATION NE ¼ NW ¼ SW ¼ SEC. 6 T. 16N R. 8W		TOWNSHIP Chippewa
		COUNTY Mecosta
TYPE OF WELL (Brine, Disposal, Storage, or Test) Dry Hole		TOTAL DEPTH 8390
		FORMATION Cincinnati
DATE PLUGGING STARTED 10-29-82	DATE PLUGGING COMPLETED 11-1-82	WAS PERMISSION OF DEPT. OF NATURAL RESOURCES OBTAINED BEFORE PLUGGING BEGAN? ☒ YES ☐ NO
NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING Michael Moss		

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
24"	60'	---	---	Cement	TD	457 POZ
13 3/8"	904	---	---	Cement Retainer	5550	
9 5/8"	5550	1500	Shot	Cement	5550	1597 Cl A

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED Cut and pulled casing - 1500', ran in spotted 457 sx POZ, pulled up to 5500' and set cement retainer, came off and spotted 1597 sx of Class A. DEPT. OF NATURAL RESOURCES DEC 13 1982
(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left in the hole before or during plugging? ☐ YES ☒ NO	If yes, give details:
Did a Service Company pump mud, spot cement, or set bridge plugs? ☒ YES ☐ NO	If yes, give name and address: Dowell
Was the well plugged by a Company or Contractor other than Owner or Operator? ☐ YES ☒ NO	If yes, give name and address:
Representatives of Owner, Operator, Company, or Contractor who witnessed plugging Marvin Woods	

CERTIFICATE I, <u>William E. Booker</u> of <u>Strickler Geological Services, Inc.</u> (company), state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction, and that the facts stated herein are true, correct and complete to the best of my knowledge.		
SIGNATURE <u>William Booker</u>	ADDRESS 1425 S. Mission, Mt. Pleasant MI	TITLE Geologist
FINAL INSPECTIONS		
DEPARTMENT REPRESENTATIVE	DATE	
DEPARTMENT REPRESENTATIVE	DATE	

[illegible]

Supplemental Plugging Data and Site Conditions:

MINERAL WELL COMPLETION REPORT
TO BE FILED WITH THE SUPERVISOR WITHIN 60 DAYS
AFTER COMPLETION OF WELL (ACT 315, P.A. 1969)

SUBMIT IN
TRIPLICATE

PN 1385-821-354

NAME OF OWNER OR OPERATOR Willmet, Inc.		ADDRESS OF OWNER OR OPERATOR 2250 Enterprise Drive Mt. Pleasant, MI 48858	
NAME OF DRILLING CONTRACTOR T. D. Provins Drilling Company		ADDRESS OF DRILLING CONTRACTOR 2113 Enterprise Drive Mt. Pleasant, MI 48858	
WELL NAME Johnson		WELL NUMBER 1-6	PERMIT NUMBER 36067
LOCATION NE NW SW		SECTION 6	TWP. 16N
TOWNSHIP Chippewa		RANGE 8W	
FOOTAGE 460		COUNTY Mecosta	
Ft. from <u>North</u> Line and <u>585</u> Ft. from <u>West</u> Line of quarter section N or S E or W			
DATE DRILLING COMMENCED 9-23-82	DATE DRILLING COMPLETED 10-29-82	DATE WELL COMPLETED ---	TYPE OF WELL Dry Hole
FORMATION COMPLETED IN Cincinnatian	TOTAL DEPTH 8390	ELEVATION 1191.5	KB RB RT RF GN 1175
ROTARY TOOLS From 0 Feet to 8390 Feet		CABLE TOOLS From Feet to Feet	

WELL CASING RECORD

TUBING AND CASING DATA				CEMENTING DATA			PERFORATIONS OR OPEN HOLE		
SIZE	LB./FT.	GRADE	DEPTH	SACKS	TYPE	STAGING DEPTH(S)	NO. HOLES	FROM	TO
24"			60	0		60	NONE		
13 3/8"			904	950		904			
9 5/8"			5550	250	loss	5550			
					A				

WATER ZONES

WIRE LINE LOGS RUN

FORMATION	FROM	TO	AMOUNT	SERVICE COMPANY	TYPE LOG	INTERVAL LOGGED	COPY TO SURVEY
(Fresh)				Schlumberger	LDT-CNL-GR	200-8390	
					Sonic	200-8390	
NONE					DLL-MLL	3300-8390	

FRACTURE OR ACID TREATMENT

SOLUTION MINING

DATE	FROM	TO	QUANTITY	NAME AND NUMBER OF INJECTION AND TARGET WELL - DISTANCE APART
NONE				NONE

The information in and attached to this report is complete and correct.

SIGNATURE <i>William Booker</i>	TITLE William E. Booker, Geologist	DATE 12/6/82
------------------------------------	---------------------------------------	-----------------

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE

FORMATION RECORD

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

EVALUATION USED: ☐ KB ☐ RT ☐ RF ☐ GR			GEOLOGIST NAME:			TOPS TAKEN FROM: ☐ SAMPLE LOG ☐ ELECTRIC LOG		
FROM	TO	FORMATION (TYPE, COLOR, ETC.)	FROM	TO	FORMATION (TYPE, COLOR, ETC.)			
IF WELL WAS CORED, ATTACH CORE DESCRIPTION AND ANALYSIS								
LIST ATTACHMENTS:								
GEOLOGICAL SURVEY USE ONLY								
REVIEWED BY								

Kalium
377-845-754

Johnson 2-1
Mecosta

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

AMENDED 1-4-88

PERMIT NUMBER

012-841-354

DATE

5-29-84

OWNER OR OPERATOR

PPG Oil & Gas, Inc.

ADDRESS

2258 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME

Johnson

WELL NUMBER

2-1

WELL LOCATION

NW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ SEC. 1 T. 16N R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Brine Disposal Storage or Test)

Test

TOTAL DEPTH

8085

FORMATION

Niagaran

DATE PLUGGING STARTED

4-24-84

DATE PLUGGING COMPLETED

4-24-84

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

Gunning

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
13 3/8"	905	----		Set one cement plug	8085	50 sx
9 5/8"	5507	----				
7"	7829	----				

GEOLOGICAL SURVEY

WRITE IN DETAIL HOW WELL WAS PLUGGED

Set 1 plug - 50 sx Howcolite at 8082, PBTD 7920

FEB 5 1984

Permits & Bonding Unit

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud,
or cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or
contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Representatives of Owner Operator Company or Contractor who witnessed plugging

Marvin Woods

CERTIFICATE

Donald D. Metzger

of Kalium Chemicals

(company)

I declare that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction
and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

ADDRESS

TITLE

11126 140th Ave., Hersey, MI Resident Manager

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

PERMIT NUMBER

012-341-354

DATE

5/29/84

OWNER OR OPERATOR

PPG Oil & Gas Co., Inc.

ADDRESS

2258 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME

Johnson

WELL NUMBER

2-1

WELL LOCATION

NW 1/4 SE 1/4 NE 1/4 SEC. 1 T. 16N R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Brine Disposal Storage or Test)

Test

TOTAL DEPTH

8085

FORMATION

Niagaran

DATE PLUGGING STARTED

4-24-84

DATE PLUGGING COMPLETED

4-24-84

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

Gunning

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
13 3/8"	905	-----		Set one cement plug	8085	50 sx
9 5/8"	5507	-----				
7"	7829	-----				

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Set 1 plug - 50 sx Howco Lt. at 8082, PBDT 7920

JUN 28 1984

MINERAL SECTION

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud,
spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or
Contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

Marvin Woods

CERTIFICATE

I, William E. Booker of Strickler Geological Services, Inc. (company),
state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction,
and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

ADDRESS

TITLE

1425 S. Mission, Mt. Pleasant, MI Geologist

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

[illegible][illegible]

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

AMENDED 1-4-88

PERMIT NUMBER
012-841-354

DATE
5-29-84

OWNER OR OPERATOR
PPG Oil & Gas., Inc.

ADDRESS
2258 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME
Johnson

WELL NUMBER
2-1

WELL LOCATION
NW ¼ SE ¼ NE ¼ SEC. 1 T. 16N R. 9W

TOWNSHIP
Grant

COUNTY
Mecosta

TYPE OF WELL (Brine Disposal Storage or Test)
Test

TOTAL DEPTH
8085

FORMATION
Niagaran

DATE PLUGGING STARTED
4-24-84

DATE PLUGGING COMPLETED
4-24-84

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN? ☒ YES ☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING
Gunning

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
13 3/8"	905	----		Set one cement plug	8085	50 sx
9 5/8"	5507	----				
7"	7829	----				
				GEOLOGICAL SURVEY		
				FEB 5 1984		

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Set 1 plug - 50 sx Howco Lt. at 8082, PBTD Permits & Bonding Unit
4-25-84 Halliburton Spotted HOWCO Lite cement plugs - 88 sx @ 7663', 91 sx @ 6847', 91 sx @ 6036', 91 sx @ 5222', 91 sx @ 4411', 91 sx @ 3599', 90 sx @ 2789', 90 sx @ 1981', 62 sx @ 1172', 58 sx @ 622', 42 sx @ 311'. Spotted common cement plugs. Cut 9 5/8" head of 3' below surface. Cap 7" & 9 5/8" casings.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging? ☐ YES ☒ NO If yes, give details:

Did a Service Company pump mud,
spot cement or set bridge plugs? ☒ YES ☐ NO If yes, give name and address:
Halliburton

Was the well plugged by a Company or
Contractor other than Owner or Operator? ☐ YES ☒ NO If yes, give name and address:

Representatives of Owner, Operator, Company or Contractor who witnessed plugging
Marvin Woods

I, Donald D. Metzger of Kalium Chemicals (company),
state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction
and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE *Donald D. Metzger* ADDRESS 11126 140th Ave., Hersey, MI TITLE Resident Manager

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE DATE

DEPARTMENT REPRESENTATIVE DATE

OPERATORS USE

DEPARTMENT USE ONLY

Supplemental Plugging Data and Site Conditions:

DNR DISTRIBUTION

Permittee — Orig. & 1 copy
Division Office — 2 copies
Field Office — File copy
Others — On request

SEP 2 1985

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

PERMIT NUMBER

MW012-341-354

FIELD NAME

Hersey

PERMIT TO PLUG AND ABANDON

NAME AND ADDRESS OF PERMITTEE

PPG Oil & Gas

LEASE NAME AND WELL NO

Johnson #2-1

LOCATION (1/4 1/4 or other)

NW SE NE,

SECTION

1

T 16N R 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Oil Gas Dry Hole etc)

Min. well

DATE COMPLETED

4/26/84

DATE PLUGGING WILL START

a.s.a.p.

PLUGGING PERMIT REQUESTED BY & DATE

D. Smith

LAST PRODUCTION

BOPD

BWPD

MCFGPD

DATE

PLUGGING TO BE DONE BY

Lease Mgmt.

PERMIT MAILED TO

COPIES MAILED TO

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP	PERFORATIONS
	13-3/8"	905	700	surf	
	9-5/8"	5507	2100	surf	
	7"	7829	1200	surf	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended, and rules and orders adopted thereunder

(Previously PB to 7783')

run tubg. to 7783';

spot 700 sx lite cmt. and 93

sx Cl A cmt.

Cut csg off 3' below grd & cap w/

cmt. & steel plate.

NOTIFY CADILLAC OFFICE 48 HOURS PRIOR TO PLUGGING.

*NOTE. BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 CL 460.701 to 460.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature)

Michael J. Mads

OFFICE

Cadillac D#6

DATE

9/19/85

NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion

MINERAL WELL COMPLETION REPORT
TO BE FILED WITH THE SUPERVISOR WITHIN 60 DAYS
AFTER COMPLETION OF WELL (ACT 315 P.A. 1969)

SUBMIT IN
TRIPLICATE

NAME OF OWNER OR OPERATOR PPG Oil & Gas Co., Inc.		ADDRESS OF OWNER OR OPERATOR 2258 Enterprise Drive Mt. Pleasant, MI 48858	
NAME OF DRILLING CONTRACTOR I. D. Provins Drilling Co.		ADDRESS OF DRILLING CONTRACTOR 2113 Enterprise Drive Mt. Pleasant, MI 48858	
WELL NAME Johnson		WELL NUMBER 2-1	PERMIT NUMBER 012-341-354
LOCATION Surface: NW SE NE Subsurface: SE NE		SECTION 1	TWP. 16N RANGE 9W
TOWNSHIP Grant		COUNTY Mecosta	
FOOTAGE 1077 Ft from South Line and 1267 Ft from East Line of quarter section N or S E or W			
DATE DRILLING COMMENCED 3-24-84	DATE DRILLING COMPLETED 4-23-84	DATE WELL COMPLETED 4-26-84	TYPE OF WELL Test
FORMATION COMPLETED IN Al Evaporite	TOTAL DEPTH 8085	ELEVATION KB -172	RB RT RF 1171 GN 1156
ROTARY TOOLS From 0 Feet to 8085 Feet		CABLE TOOLS From Feet to Feet	

WELL CASING RECORD

TUBING AND CASING DATA				CEMENTING DATA			PERFORATIONS OR OPEN HOLE		
SIZE	LB./FT.	GRADE	DEPTH	SACKS	TYPE	STAGING DEPTH(S)	NO. HOLES	FROM	TO
13 3/8"	54.5#	K-55	905	500,200	Lite/CIA	Circ. 70 bbls			
9 5/8"	45.5#	N-80	5507	700,200	Lite/CIA	5507-3700			
				1100,100	Lite/CIA	3700-Surface			
7"	23#	S-95	7829	475,450	Lite/Poz				
				280	Hw .2% HR7				

WATER ZONES

WIRE LINE LOGS RUN

FORMATION	FROM	TO	AMOUNT	SERVICE COMPANY	TYPE LOG	INTERVAL LOGGED	COPY TO SURVEY
(Fresh)				Schlumberger	LDT-CNL-CR	0 - 8085	---
					Dual & Micro	3024 - 4200	

FRACTURE OR ACID TREATMENT

SOLUTION MINING

DATE	FROM	TO	QUANTITY	NAME AND NUMBER OF INJECTION AND TARGET WELL - DISTANCE APART

The information in and attached to this report is complete and correct

SIGNATURE

William E Book

TITLE

Geologist

DATE

5/29/84

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE



PPG Industries, Inc. One PPG Place Pittsburgh, Pennsylvania 15272

May 15, 1984

Michigan Department of Natural
Resources
Stevens T. Mason Building
P.O. Box 30028
Lansing, MI 48909

ATTENTION: A. J. Rarick

Dear Mr. Rarick:

Enclosed please find an original and two copies of our Application for a Mineral Well Permit relating to the conversion of the Johnson #2-1 well to a solution mining well. Also enclosed is a check for the fee in the amount of \$50.00.

If you require any additional information, please contact me at (412) 434-3907.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Joseph Gil, Jr.' with a stylized flourish at the end.

Joseph Gil, Jr.

JG:rm
Enclosures

cc: (w/enclosures)

D. D. Metzger
G. F. Pellett
R. J. Sameison
L. H. Wilcox
RES 969.0

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

APPLICATION FOR A MINERAL WELL PERMIT

To Drill, Operate, Convert, or Rework
a Brine, Storage, Disposal, or Test Well.

By Authority of Act 315, P. A. 1969

1. DATE OF APPLICATION May 16, 1984	2 FEE ENCLOSED \$50.00
3. APPLICATION TO Convert to Solution Mining	
4 TYPE MINERAL WELL Solution Mining	5. WELL DESIGNATION Johnson 2-1
6 LOCATION: NW/4 of the SE/4 of the NE 1/4 SEC 1 T 16N R 9W	
7 TOWNSHIP Grant	8 COUNTY Mecosta

9 APPLICANT PPG Industries, Inc.		10. TELEPHONE (412)434-3907	
11. ADDRESS (Street, City, State) One PPG Place, Pittsburgh, PA		12 ZIP CODE 15272	
13 SURETY OR SECURITY COMPANY Hartford Accident & Indemnity Co.	14. TYPE ☐ SINGLE ☒ BLANKET	15 AMOUNT \$25,000.00	16 BOND NO 4506230
17 OWNER OR SURFACE RIGHTS Donald and E. Caroline Johnson		18 OWNER OR MINERAL RIGHTS Gerald Knapp, et al	
19 DRILLING CONTRACTOR T. D. Provins	20 ADDRESS P.O. Box 642, Mt. Pleasant, MI 48858		21 TELEPHONE (517)773-6946
22 TYPE DRILLING TOOLS ☐ CABLE ☒ ROTARY ☐ COMBINATION	23 FORMATION Niagaran		24 INTENDED DEPTH 8000'
25. PROJECT ENGINEER OR GEOLOGIST Donald D. Metzger	26 ADDRESS 2258 Enterprise Drive, Mt. Pleasant, MI 48858		27. TELEPHONE (517)773-3949

28 PROGRAM OF DRILLING CONVERTING REWORKING, CASING, CEMENTING, COMPLETING OPERATING, AND MONITORING.
(See appropriate instruction sheet Attach 3 copies of proposed program - including but not necessarily limited to information requested in the instruction sheet)

CASING PROGRAM:
Size Depth Cement

See Attached

INSTRUCTION SHEET NO.		
Type of Well	Drill-New	Rework*
Brine	D-1	R-1
Storage	D-2	R-1
Disposal	D-3	R-1
Solution Mining	D-4	R-2 X
Test Well	D-5	R-1
*Rework, Deepen, or Convert to New Use		

THERE WILL BE NO CHANGES IN THE PROGRAM OUTLINED IN THIS APPLICATION WITHOUT APPROVAL OF THE SUPERVISOR OF MINERAL WELLS OR HIS AUTHORIZED REPRESENTATIVE.

29 ADDRESS CORRESPONDENCE AND PERMIT TO: PPG Industries, Inc., One PPG Place, Pittsburgh, PA 15272 ATTENTION: J. Gil, Jr.	30 TELEPHONE (412)434-3907
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MINERAL WELL SECTION USE ONLY

STATUS OF BOND <i>Effective</i>
APPLICATION APPROVED BY <i>A. J. Ranch</i>
PERMIT NUMBER 377 810-845-754
DATE ISSUED 5/31/84
ISSUED BY <i>A. J. Ranch</i>
DISTRIBUTION: White - Lansing Cyan - Field Pink - Applicant

The Applicant agrees to comply with provisions and requirements of Act 315, P.A. 1969, and asserts that the information on this application and attached report is true and correct.

SIGNATURE (APPLICANT/AUTHORIZED REP.) <i>Joseph Gil, Jr.</i>	DATE 5/16/84
NAME (TYPED) Joseph Gil, Jr.	
TITLE Project Manager	

FOR CASHIER'S USE ONLY

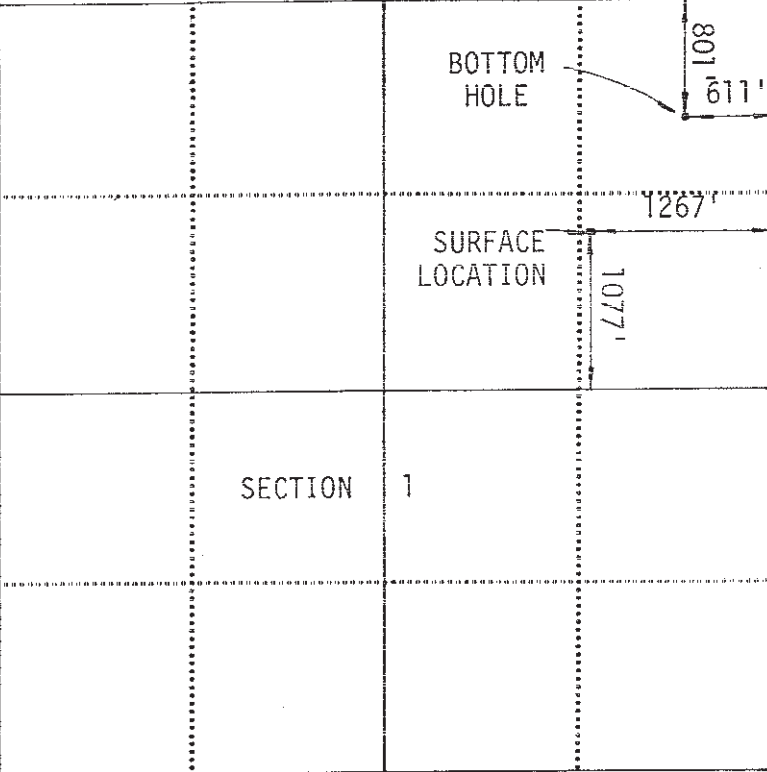
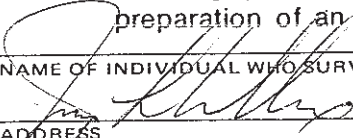
R 7500 2/73

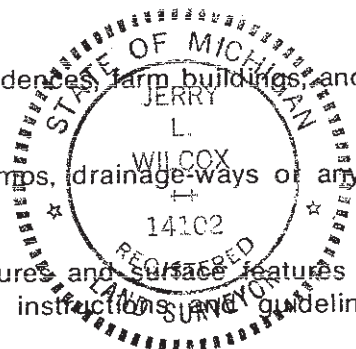
STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

SURVEY RECORD OF WELL LOCATION

(Submit five copies with Application for Permit to Drill a Well for Oil or Gas,
Brine Disposal, Hydrocarbon Storage or Secondary Recovery)

84024

LESSEE (OWNER OF LEASE RIGHTS)				PPG INDUSTRIES, INC.							
LESSOR (OWNER OF MINERAL RIGHTS)				(Johnson #2-1)		WELL NO. 2-1					
LOCATION	NW	1/4 OF	SE	1/4 OF	NE FRC'L	1/4 SECTION 1	T. 16 N R. 9 W				
TOWNSHIP Grant				COUNTY Mecosta							
PLAT BELOW REPRESENTS ONE FULL SECTION (1 Mile Square)				 - Outline drilling unit and spot well location on plat at left. Where drilling unit crosses section lines, divide the plat into an east half and a west half OR a north half and a south half (which ever applies). Outline the unit and locate the well in two directions from NEAREST quarter section and unit lines. - Location of well in two directions from NEAREST quarter section and unit lines is: SURFACE LOCATION <u>1077</u> ft. from <u>South</u> line of Quarter Section (north-south) <u>1267</u> ft. from <u>East</u> line of Quarter Section (east-west) _____ ft. from _____ line of unit (north-south) _____ ft. from _____ line of unit (east-west) - Describe wellsite marker. Show or describe access route if it is not readily accessible. <u>Wellsite is marked with an existing casing. Site can be reached from the North off Balsam Road. See supplemental plat.</u> <u>Ground elev. = 1156.4 feet, U.S.G.S. datum.</u>							
											
(Scale of Plat — 1 inch equals 1320 ft.)											
4. ON SEPARATE PLAT OR PLOT PLAN: A. Locate, identify, and show distances to all roads, power lines, residences, farm buildings, and other structures within 300 feet of the stake; B. Locate, identify, and show distances to all lakes, streams, swamps, drainage ways or any other surface water features within 1320 feet of the stake. 5. In an ENVIRONMENTAL IMPACT ASSESSMENT describe all structures and surface features shown detailing plans for hazards prevention and erosion control (See instructions and guidelines for preparation of an environmental impact assessment).											
NAME OF INDIVIDUAL WHO SURVEYED WELL SITE				DATE		TITLE					
				Jerry L. Wilcox, LS#14102		5-4-84 President					
ADDRESS				J. L. WILCOX & ASSOCIATES, INC. 7230 North U.S.-131 Manton, Michigan 49663							
I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF											
SIGNATURE (LESSEE OR AUTHORIZED REPRESENTATIVE)				ADDRESS (IF DIFFERENT THAN LESSEE)		DATE (MONTH, DAY, YEAR)					





120 TH.

36

36

31

6

NORTH LINE SEC 1

BOTTOM HOLE

FOND

801'

611'

BALSAM

RD

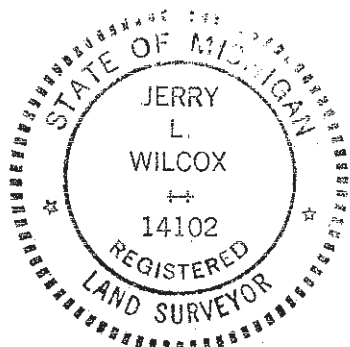
1267'

SURFACE LOCATION

POWER LINE

E-1/4 LINE

6



EAST LINE SEC. 1

AVE.

N-S 1/4 LINE

SUPPLEMENTAL PLAT; JOHNSON*2-1
SECTION 1, T16N-R9W
GRANT TOWNSHIP, MECOSTA
COUNTY, MICHIGAN

CLIENT: PPG INDUSTRIES INC

DATE
5-4-84
DRN
K.M.I.
CHD
FHT
SCALE
V: 1"=660'

J.L. WILCOX & ASSOCIATES, INC.
Engineers and Surveyors
7230 N. U.S. - 131 • Manton, Michigan 49663

NOTES F.B. 180 PG. 57	SHEET 1 OF 1	JOB NO. 84024
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Section 28 - Solution Mining Well Program

I. Drilling and Completion Programs

The Johnson 2-1 was drilled and cased according to the following:

A. Surface

1. The 24" conductor pipe was driven to a depth of 96.5'.
2. A 17-1/2" hole was drilled to a depth of 905'.
3. Then 13-3/8" 54.0# K-55 S.T.C. was run to total depth. A weld-on guide shoe was placed on bottom and the lower five joints were strapped across the collars.
4. Surface casing was cemented with 525 sacks HOWCO lite and 200 sacks Class A cement. Seventy barrels of cement were returned to surface on the outside of the casing.
5. Blowout preventor equipment was installed on 13-3/8" casing and the equipment was pressure tested to 1500 psi for 15 minutes.

B. Intermediate Hole

1. A vertical 12-1/4" hole was drilled from below the surface casing to 4240'.
2. The hole was then directionally drilled NE of the surface location to a depth of 5545' measured depth (MD) with an angle of 22-1/4° N37E at 5456' MD.
3. The 9-5/8" 40# N-80 L.T.C. casing was then run using a float shoe on the bottom and a float collar at the top of the first joint with 7 centralizers installed midway on every second joint. The centralizers were held in place with stop rings. A D.V. tool was installed in the casing string approximately 3710' from the surface.
4. The 9-5/8" casing was cemented to the surface. The first stage was cemented with 700 sacks HOWCO lite with 2% CaCl and 200 sacks Common Class A. The D.V. tool was then closed and the second stage was cemented using 1100 sacks HOWCO lite with 2% CaCl and 100 sacks Common Class A with 2% CaCl.
5. Twenty barrels of cement were returned on the first stage. Forty barrels of cement were returned on the second stage.

C. Production Casing

1. The blowout preventor equipment (BOPE) was installed on the 9-5/8" casing and was tested to 1500 psi for 15 minutes using the rig pump.
2. The D.V. tool was drilled out along with the float collar and the float shoe. The drilling of an 8-1/2" hole commenced from below intermediate casing.

3. The hole was drilled using the build and drop method, with the angle of the hole being back to vertical at approximately 7765'. The maximum angle achieved was 24-1/2°.
4. The hole was cored through the zone of potash mineralization.
5. Drilling continued to a total depth of 8082', ten feet into the Niagaran formation.
6. Geophysical logs and a gyro survey were run.
7. The hole was plugged back from total depth to approximately 7850' with 50 sacks of HOWCO lite.
8. Seven inch 23# S-95 L.T.C. casing was run with a float shoe and centralizer on the bottom. A float collar with manual fill was run one joint up with the centralizers midway between joints and held in place with a stop ring.
9. Two more joints were run and a short marker pup was installed in the production string.
10. Casing was run continuously to surface.
11. The casing was cemented with 475 sacks HOWCO lite A, salt saturated with 1/4# per sack D-Air-1, 450 sacks HOWCO poz 18% salt and 1/4# per sack D-Air-1, and 280 sacks HOWCO special H with .2% HR-7.
12. Forty barrels of cement were returned to surface around the outside of the pipe.
13. The casing was landed in slips at 7838' and capped with a temporary blank pending approval of the application for a permit to convert the well to a solution mining well.

D. Geophysical Logging

In addition to the logs run at intermediate casing point, gamma ray, neutron and other lithology indicating logs are run from the base of the intermediate casing to the top of the Niagaran formation. Later, when the cement plugs are drilled out to below the zone of mineralization, a series of cased hole-logs will be run. A cement bond log and collar locator will be run from total depth to surface. The depth of the casing is checked using a collar locator log to locate the marker joint.

E. Tests

The pressure testing of the 7" casing to 80% of burst pressure will take place prior to the initial mining. This pressure exceeds 133% of operating pressure. A packer will run to the bottom and the pressure checked in the final stages before mining commences.

F. Mining Interval

Mining will be commenced in the salt a short distance above the bottom of the 7" casing. The exact depth depends on the depth at which the potash bed is encountered in the Johnson 3-1. Mining will be continued up through the salt and potash sections to a height up to approximately 6458' to 6428', subsea.

G. Well Area

The well head will be surrounded by a concrete and steel sump. This sump will drain by gravity through a pipeline into a sump within the test mining facility processing building, where any leakage will be captured by a sump pump and reinjected into the circulating fluid system.

II. Operation

A. Solutioning System

1. Single Well Operation

- a) The well will be initially operated as a single well with annulus injection and tubing withdrawal. Oil will be used as the inert padding system for roof control in the cavern. Oil will be added to the well on a batch basis as required. The well will be operated as a single well until the cavity size is large enough to connect with an adjacent cavity (Johnson 3-1). It will then be operated in multi-well operation.

2. Multi-Well Operation

- a) After connection has been established the well will be operated as a two well gallery. Each well may be operated as an injection or withdrawal well in the multi-well mode. Oil padding will continue to be used for roof control throughout the multi-well phase. The well will be operated in the multi-well mode until sufficient data have been collected from the test. It is anticipated that this phase of the operation will take between 150 and 200 days to complete.

B. Operating Parameters

1. Average injection flow will range from 50 gpm to 390 gpm with short-term peak flow to 600 gpm.
2. Withdrawal flow will be approximately 97% of injection. No losses are anticipated to the formation.
3. Injection temperature will range from 50°F to 180°F.
4. Injection pressure will depend on the injection flowrate and the density difference of the injection and withdrawal fluids. It is anticipated that the injection pressure will range between 900 and 1300 psig.
5. Specific gravity of the withdrawal fluid will range between 1.0 (water) and 1.25.
6. Chemical composition of the withdrawal fluid will depend on the ore being dissolved and is anticipated to range from nearly pure water to an aqueous solution of sodium chloride (NaCl) and potassium chloride (KCl) containing up to 435 gpl combined dissolved NaCl and KCl.

7. The only pre-treatment of the injection fluid (water) will be heating of the water to 180°F during certain stages of the solution mining test. Chemical pre-treatment is not required.

III. Monitoring

A. Operating Parameters

The injection and withdrawal flowrate for the well(s) will be monitored by totalizing flowmeters. Flow information along with the chemical analysis of injection and withdrawal as determined from daily composite samples will be used to perform daily material balances on the solution mining process. The material balances will provide a daily accounting of the KCl and NaCl withdrawn from the well(s).

B. Well Integrity and Solutioning Process

1. The well head and surface equipment will be visually monitored by operators who will be on duty 24 hours per day, seven days per week, throughout the test.
2. The condition of the borehole, casing, and cement sheath will be determined by monitoring the pressure when the well is operating. If any loss of fluid (other than expansion of the cavity) is indicated from a comparison of the injection and withdrawal flowmeters, pressure and/or video testing of the casing will be performed to locate leaks.

C. Surface Changes

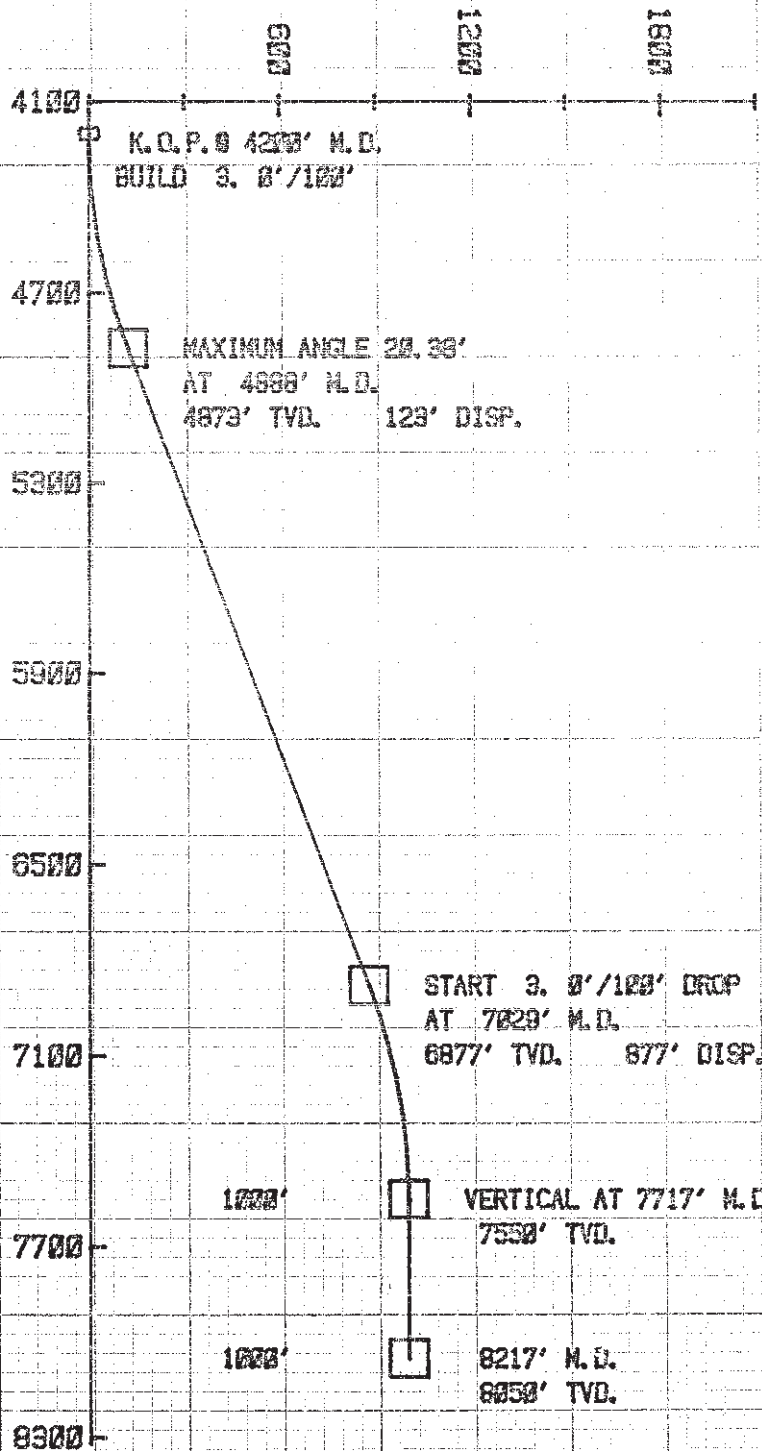
In order to monitor any ground surface movement at the well area, two bench marks will be established on the site. These bench marks will be located at least 200 feet away from the area in which the cavity will be formed. The bench marks will be a precast concrete monument approximately 4 inches in diameter and 3 to 4 feet long having a 1/2 inch diameter reinforcing rod embedded in the center. The monument will be buried in the ground vertically having one end exposed. A monument grid will be utilized. The grid will be made up of four additional bench marks which will be placed over the cavity. A survey of second order accuracy will be conducted to determine the elevation of the monuments in the grid relative to the bench marks. These will be measured annually and reported to DNR every two years.

PPG INDUSTRIES, INC.
JOHNSON 2-1
MECOSTA COUNTY, MICHIGAN

VERTICAL SECTION 1 IN. = 600 FT.

feet

feet



PPG INDUSTRIES, INC.

JOHNSON 2-1
MECOSTA COUNTY, MICHIGAN



PLAN VIEW
1 IN. = 200 FT.

OBJECTIVE NO. 1:
1000' N45.00'E OF
SURFACE LOCATION
7717' M.D. 7550' TVD.
707' NORTH 707' EAST

OBJECTIVE NO. 2:
1000' N45.00'E OF
SURFACE LOCATION
8217' M.D. 8050' TVD.
707' NORTH 707' EAST

SUBMITTED BY:

TRIPLE G DIRECTIONAL DRLLG.
TRAVERSE CITY, MICHIGAN

feet

600

400

200

0

feet

0

200

400

600

800

1000

1200

S.L.



the applicant to allow all-weather operation. The environmental effect of this project is slight, and every effort will be made to insure protection and preservation of the environment during the course of operations.

Applicant's Representative

Josef J. H.

Comments by Department of Natural Resources Representative:

Authorized Representative

PPG Oil & Gas Co., Inc.

A Subsidiary of PPG Industries, Inc.

2258 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949



File

June 26, 1984

Supervisor of Mineral Wells
Geological Survey Division
Department of Natural Resources
P.O. Box 30028
Lansing, MI 48909

Re: Johnson 2-1 Reports and Logs

Gentlemen:

Enclosed are the following reports and logs for the Johnson 2-1:

Form R7506-1, Mineral Well Plugging Record - 2 copies

Form R7504, Mineral Well Completion Report - 3 copies

Sample Descriptions - 2 copies

Final Logs:

Dual Laterolog/Micro SFL/GL

Compensated Neutron-Litho Density, Run 1 & 2

Directional Survey

Upon receipt, please sign below and return one copy to our office.

Sincerely,

Janet Caltrider

Janet Caltrider
Operations Staff Assistant

GEOLOGICAL SURVEY

JUN 28 1984

MINERAL WELL SECTION

JC/11h
Enclosures

Received on 6/29/84, 1984, by W. J. Rauti

e. Johnson 3-1, Permit #00337

Wi

TRIPLE-G
REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY

GEOLOGICAL SURVEY

JUN 28 1984

WELL SECTION

PPG Oil & Gas Company, Inc.
COMPANY

Johnson #2-1
WELL NAME

Mecosta County, Michigan
LOCATION

JOB NUMBER

TC-MJ-40052

TYPE OF SURVEY

Gyroscopic & Single Shot Survey

DATE

04/23/84

SURVEY BY
Burdick

OFFICE
Michigan

RECORD OF SURVEY

Triple "G" Directional Drilling, Inc.

Objective N45.00E

JOB NO. 40062

DATE 4/23/84

Checked by

MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	DOG LEG	DRIFT DIR.	RECTANGULAR COORDINATES			
						NORTH	SOUTH	EAST	WEST
100.00	.04	100.00	-.04	.07	S87.30W		.00		.06
200.00	.07	200.00	-.15	.05	N78.48W	.01			.22
300.00	.03	300.00	-.11	.14	N25.48E	.12			.27
400.00	.07	400.00	-.06	.16	S07.12W	.09			.18
500.00	.05	500.00	-.21	.05	S31.54W		.07		.23
600.00	.04	600.00	-.32	.10	N63.00W		.10		.35
700.00	.05	700.00	-.24	.15	S89.06E		.01		.38
800.00	.10	800.00	-.17	.13	S36.00E		.11		.14
900.00	.07	900.00	-.23	.05	S28.24E		.32		.01
1000.00	.08	1000.00	-.40	.23	N73.36W		.45		.12
1100.00	2.35	1099.96	.40	2.62	N28.54E	1.46			.90
1200.00	2.10	1199.88	4.41	.43	N31.42E	5.04		1.19	
1300.00	2.19	1299.80	8.24	.23	N36.06E	8.29		3.37	
1400.00	1.51	1399.73	11.85	.51	N41.30E	11.12		5.65	
1500.00	1.43	1499.69	14.96	.15	N39.36E	13.48		7.67	
1600.00	1.43	1599.64	17.95	.22	N46.54E	15.66		9.72	
1700.00	1.20	1699.60	20.61	.39	N44.42E	17.52		11.63	
1800.00	1.20	1799.58	22.94	.06	N42.00E	19.21		13.23	
1900.00	1.07	1899.55	25.07	.24	N46.54E	20.74		14.72	
2000.00	1.02	1999.54	26.95	.09	N44.42E	22.04		16.07	
2100.00	1.10	2099.52	28.87	.15	N41.42E	23.44		17.38	
2200.00	1.39	2199.49	31.31	.60	N56.06E	25.05		19.23	
2300.00	2.20	2299.43	34.53	.99	N77.06E	26.43		22.40	
2400.00	3.12	2399.31	38.06	1.32	S81.54E	26.63		27.20	
2500.00	3.46	2499.12	41.25	.84	S71.36E	25.24		33.10	
2600.00	4.21	2598.87	43.77	.99	S60.12E	22.35		39.55	
2700.00	4.55	2698.55	45.03	1.15	S47.48E	17.61		46.08	
2800.00	4.47	2798.19	45.32	.20	S46.06E	11.84		52.25	
2900.00	4.02	2897.89	45.64	.77	S48.36E	6.63		57.91	
3000.00	4.11	2997.63	45.82	.34	S44.18E	1.70		63.10	

RECORD OF SURVEY

Triple 'G', Directional Drilling, Inc.

Objective N45.00E

JOB NO. 40062

DATE 4/23/64

Checked by

MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	DOG LEG	DRIFT DIR.	RECTANGULAR COORDINATES			
						NORTH	SOUTH	EAST	WEST
3100.00	3.39	3097.40	45.84	.55	S46.06E		3.11	67.94	
3200.00	3.09	3197.22	46.41	.72	S54.48E		6.89	72.51	
3300.00	2.44	3297.09	47.42	.45	S58.00E		9.73	76.79	
3400.00	2.29	3396.99	48.46	.25	S58.30E		12.12	80.66	
3500.00	1.44	3496.92	49.36	.75	S59.48E		14.01	83.81	
3600.00	1.15	3596.89	50.20	.52	S67.36E		15.16	86.15	
3700.00	1.23	3696.86	50.85	.31	S55.24E		16.25	88.16	
3800.00	.52	3796.84	51.33	.54	S62.54E		17.26	89.85	
3900.00	.36	3896.83	51.79	.28	S69.24E		17.78	91.02	
4000.00	.33	3996.83	52.17	.07	S65.06E		18.16	91.94	
4100.00	.57	4096.82	52.37	.49	S43.00E		18.93	92.99	
4200.00	.21	4196.81	52.35	.60	S44.18E		19.75	93.78	
4220.00	.29	4216.81	52.35	.67	S47.00E		19.85	93.88	
4300.00	4.48	4296.71	54.53	5.87	N58.00E		20.18	97.29	
4400.00	10.22	4395.79	67.48	5.59	N53.48E		12.79	100.22	
4500.00	13.50	4493.56	87.93	7.72	N20.06E	3.72		120.63	
4600.00	20.00	4589.18	114.91	6.40	N26.06E	30.46		132.04	
4700.00	16.48	4684.06	145.36	4.01	N33.48E	57.79		147.78	
4800.00	16.22	4779.90	173.42	.59	N35.12E	81.31		163.95	
4900.00	15.37	4876.03	200.60	.77	N35.54E	103.72		179.97	
5000.00	15.06	4972.46	226.79	.61	N37.06E	125.01		195.72	
5100.00	15.10	5068.99	252.66	.07	N37.12E	145.82		211.49	
5200.00	17.10	5165.03	280.25	2.00	N37.36E	167.94		228.40	
5300.00	19.30	5259.95	311.40	2.37	N36.18E	193.08		247.30	
5400.00	21.21	5353.66	345.86	1.87	N35.30E	221.34		267.77	
5500.00	23.13	5446.18	383.20	1.90	N34.36E	252.38		289.54	
5600.00	24.19	5537.70	422.84	1.10	N34.42E	285.54		312.45	
5700.00	23.49	5629.01	462.96	.50	N34.36E	319.08		335.64	
5800.00	22.40	5720.89	501.81	1.17	N35.12E	351.45		358.22	
5900.00	21.33	5813.54	538.92	1.13	N35.42E	382.11		380.04	

RECORD OF SURVEY

Triple 'G', Directional Drilling, Inc.

Objective N45.00E

JOB NO. 40062

DATE 4/23/84

Checked by

MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	DOG LEG	DRIFT DIR.	RECTANGULAR COORDINATES			
						NORTH	SOUTH	EAST	WEST
6000.00	22.21	5906.29	575.85	.87	N36.36E	412.29		402.09	
6100.00	22.43	5998.65	613.75	.38	N36.18E	443.11		424.86	
6200.00	22.57	6090.82	652.16	.42	N37.12E	474.21		448.08	
6300.00	23.16	6182.79	691.01	.39	N36.36E	505.59		471.64	
6400.00	23.58	6274.42	730.63	.70	N36.24E	537.79		495.47	
6500.00	21.52	6366.52	769.09	2.12	N35.36E	569.38		518.36	
6600.00	18.36	6460.34	803.21	3.27	N35.40E	597.38		538.54	
6700.00	16.03	6555.79	832.58	2.55	N35.18E	621.60		555.85	
6800.00	12.58	6652.59	857.24	3.10	N34.06E	642.20		570.11	
6900.00	11.00	6750.41	877.66	1.98	N35.12E	659.28		581.92	
7000.00	10.15	6848.69	895.78	.82	N33.24E	674.51		592.31	
7100.00	9.42	6947.18	912.75	.55	N33.36E	688.95		601.87	
7166.00	10.00	7012.21	923.94	2.22	N42.00E	697.86		608.78	
7259.00	9.15	7103.90	939.47	.83	N43.00E	709.33		619.28	
7352.00	8.00	7195.84	953.41	1.35	N42.00E	719.61		628.71	
7445.00	7.00	7288.05	965.53	1.08	N42.00E	728.63		636.83	
7539.00	6.30	7381.40	976.57	.65	N45.00E	736.65		644.43	
7633.00	5.45	7474.86	986.60	.83	N47.00E	743.61		651.65	
7700.00	4.00	7541.61	991.82	5.34	N85.00E	745.89		656.75	
7750.00	1.15	7591.56	993.97	7.09	N25.00E	747.14		658.55	
7800.00	2.00	7641.54	995.16	1.99	N01.00E	748.51		658.86	
7820.00	2.00	7661.52	995.61	2.09	N11.00W	749.21		658.80	
7891.00	3.30	7732.44	997.52	2.11	N11.00W	752.55		658.15	
7982.00	3.00	7823.29	1000.38	.55	N11.00W	757.61		657.17	
8082.00	3.00	7923.16	1003.37	0.00	N11.00W	762.75		656.17	

BOTTOM HOLE CLOSURE - 1006.20 FT. at N 40 DEG. 42 MIN. E

METHOD OF COMPUTATION - RADIUS OF CURVATURE

Kalium
P.N. 337-844-954

Johnson #3-1
Mecosta Co



PPG Industries, Inc. 2258 Enterprise Drive Mt. Pleasant, Michigan 48858 (517) 773-3949

September 26, 1985

Mineral Well Supervisor
Geological Survey Division
Michigan Department of Natural Resources
P. O. Box 30028
Lansing, MI 48909

Gentlemen:

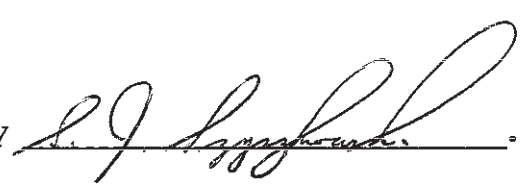
Enclosed is the Well Plugging Record, Form 7213 for the Johnson 1-1, 2-1 and 3-1.

Upon receipt, please sign below and return one copy to our office. Should you have any questions, or if I can be of assistance, please feel free to contact me.

Sincerely,


Janet Caltrider

Operations Staff Assistant
Enclosure

Received on 9/30, 1985, by 

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

AMENDED 1-27-88

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

PERMIT NUMBER
337-844-754

DATE
7/30-84

OWNER OR OPERATOR

PPG Oil & Gas Co., Inc.

ADDRESS

2258 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME

Johnson

WELL NUMBER
3-1

WELL LOCATION

NW ¼ SE ¼ NE ¼ SEC. 1 T. 16N R. 9W

TOWNSHIP
Grant

COUNTY
Mecosta

TYPE OF WELL (Brine Disposal Storage or Test)

Test Well

TOTAL DEPTH
8073

FORMATION
Niagaran

DATE PLUGGING STARTED

7-4-84

DATE PLUGGING COMPLETED

7-5-84

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES ☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
13 3/8	905	None	----	Cement	8118	100 sx
9 5/8	5575	None	----	Cement	7823	365 sx
				Cement	6000	200 sx

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran drill pipe open ended to 8118' and spotted 100 sx, pulled drill pipe to 7823' and spotted 365 sx. pulled drill pipe to 6000 and spotted 200sx.

GEOLOGICAL SURVEY

USE REVERSE SIDE IF NEEDED

Were tools tubing casing, etc., lost or left
in the hole before or during plugging?

☐ YES ☒ NO

If yes, give details: **Permits & Bonding Unit**

Did a Service Company pump mud,
spot cement, or set bridge plugs?

☒ YES ☐ NO

If yes, give name and address:

Was the well plugged by a Company or
Contractor other than Owner or Operator?

☐ YES ☒ NO

If yes, give name and address:

Representatives of Owner Operator Company or Contractor who witnessed plugging

Marvin Wood

CERTIFICATE

I, Donald D. Metzger of Kalium Chemicals (company):

state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

ADDRESS

TITLE

11126 140th Ave, Hersey, MI Resident Manager

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

ENDING HIS OFFICE

(Submit in TRIPLICATE Within 30 Days After Plugging is Completed)

DNR DISTRIBUTION Permittee — Orig. & 1 copy Division Office — 2 copies Field Office — File copy Others — On request	SEP 2 1985 Regulatory Control	STATE OF MICHIGAN DEPARTMENT OF NATURAL RESOURCES GEOLOGICAL SURVEY DIVISION	PERMIT NUMBER MW337-844-754
		PERMIT TO PLUG AND ABANDON	

NAME AND ADDRESS OF PERMITTEE PPG Oil & Gas			
LEASE NAME AND WELL NO Johnson #3-1			
LOCATION (1/4 1/4 or other) NW SE NE,	SECTION 1	T 16N R 9W	TOWNSHIP Grant COUNTY Mecosta
TYPE OF WELL (Oil Gas Dry Hole etc) Mineral well	DATE COMPLETED	DATE PLUGGING WILL START a.s.a.p.	PLUGGING PERMIT REQUESTED BY & DATE Don Smith
LAST PRODUCTION BOPD BOPD MCFGPD DATE			PLUGGING TO BE DONE BY Lease Mgmt.
PERMIT MAILED TO COPIES MAILED TO			

CASING AND CEMENTING RECORD

HOLE DIA.	CASING DIA. & WT./FT.	DEPTHS SET	CEMENT QUANTITY, TYPE, ADDITIVES	CMT. TOP.	PERFORATIONS
	13-3/8"	905			
	9-5/8"	5575'	2,000 sx 2-stage	circled	

GEOLOGIC DATA; GAS AND OIL SHOWS; DRILLING AND COMPLETION DATA:

T.D. 8118'
(hole size 8 1/2")

PLUGGING REQUIREMENTS*

Plugging requirements outlined are to be executed in accordance with the provisions of Act 61, P.A. 1939, as amended and rules and orders adopted thereunder

(Previously PB 8118-5475 with 665 sx cmt.)
 Run tubg. to 5475'.
 Spot 900 sx lite cmt. and 220 sx Cl A
 cmt.
 Cut csg. 3' below grd. & cap w/cmt &
 steel plate.

NOTIFY CADILLAC OFFICE 48 HOURS PRIOR TO PLUGGING.

*NOTE: BONDS CANNOT BE RELEASED UNTIL A PLUGGING IS COMPLETED, CELLAR RAT HOLE AND PITS FILLED, WELL SITE RESTORED AND RECORDS FILED. WATER WELLS MUST BE PLUGGED ACCORDING TO RULE 166 OF ACT 294 P.A. 1965, "GROUND WATER QUALITY CONTROL". It is further made a requirement of this permit that the applicant give notice to the public utilities in accordance with Act 53, P.A. 1974 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.

AUTHORIZED BY (signature) <i>Michael J. Moss</i>	OFFICE Cadillac D#6	DATE 9/19/85
---	------------------------	-----------------

NOTE: WELL PLUGGING RECORD Form R-7213 to be filed in TRIPLICATE within 30 days after completion.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

MINERAL WELL PLUGGING RECORD

File in DUPLICATE Within 30 Days After Plugging is Completed

TEMPORARILY ABANDONED

PERMIT NUMBER

377-844-754

DATE

7/30/84

OWNER OR OPERATOR

PPG Oil & Gas Co., Inc.

ADDRESS

2258 Enterprise Drive, Mt. Pleasant, MI 48858

WELL NAME

Johnson

WELL NUMBER

3-1

WELL LOCATION

NW 1/4 SE 1/4 NE 1/4 SEC. 1 T. 16N R. 9W

TOWNSHIP

Grant

COUNTY

Mecosta

TYPE OF WELL (Brine, Disposal, Storage, or Test)

Test Well

TOTAL DEPTH

8073

FORMATION

Niagaran

DATE PLUGGING STARTED

7-4-84

DATE PLUGGING COMPLETED

7-5-84

WAS PERMISSION OF DEPT. OF NATURAL RESOURCES
OBTAINED BEFORE PLUGGING BEGAN?

☒ YES

☐ NO

NAME OF DEPARTMENT REPRESENTATIVE WHO AUTHORIZED OR SUPERVISED PLUGGING

CASING SIZE	WHERE SET	AMOUNT RECOVERED	SHOT OR RIPPED	TYPE OF BRIDGES OR PLUGS	DEPTH PLACED	NUMBER SACKS
13 3/8	905	None	----	Cement	8118	100 sx
9 5/8	5575	None	----	Cement	7823	365 sx
				Cement	6000	200 sx

DESCRIBE IN DETAIL HOW WELL WAS PLUGGED

Ran drill pipe open ended to 8118' and spotted 100 sx, pulled drill pipe to 7823'
and spotted 365 sx, pulled drill pipe to 6000 and spotted 200 sx.

(USE REVERSE SIDE IF NEEDED)

Were tools, tubing, casing, etc., lost or left
in the hole before or during plugging?

☐ YES

☒ NO

If yes, give details:

Did a Service Company pump mud,
spot cement, or set bridge plugs?

☒ YES

☐ NO

If yes, give name and address:

Halliburton

Was the well plugged by a Company or
Contractor other than Owner or Operator?

☐ YES

☒ NO

If yes, give name and address:

Representatives of Owner, Operator, Company, or Contractor who witnessed plugging

Marvin Wood

CERTIFICATE

I, William E. Booker of Strickler Geological Services, Inc. (company),
state that I am authorized by said Owner or Operator to make this report; and that this report was prepared under my supervision and direction,
and that the facts stated herein are true, correct and complete to the best of my knowledge.

SIGNATURE

William E. Booker

ADDRESS

1425 S. Mission, Mt. Pleasant, MI

TITLE

Geologist

FINAL INSPECTIONS

DEPARTMENT REPRESENTATIVE

DATE

DEPARTMENT REPRESENTATIVE

DATE

[illegible][illegible]

MINERAL WELL COMPLETION REPORT
TO BE FILED WITH THE SUPERVISOR WITHIN 60 DAYS
AFTER COMPLETION OF WELL (ACT 315 P.A. 1969)

SUBMIT IN
TRIPLICATE

NAME OF OWNER OR OPERATOR PPG Oil & Gas Co., Inc.		ADDRESS OF OWNER OR OPERATOR 2258 Enterprise Drive Mt. Pleasant, MI 48858	
NAME OF DRILLING CONTRACTOR T. D. Provins Drilling Co.		ADDRESS OF DRILLING CONTRACTOR 2113 Enterprise Drive Mt. Pleasant, MI 48858	
WELL NAME Johnson	WELL NUMBER 3-1	PERMIT NUMBER 337-844-754	
LOCATION NW SE NE	SECTION 1	TWP 16N	RANGE 9W
TOWNSHIP Grant	COUNTY Mecosta		
FOOTAGE 1077 Ft from South Line and 1237 Ft from East Line of quarter section N or S E or W			
DATE DRILLING COMMENCED 6-3-84	DATE DRILLING COMPLETED 7-2-84	DATE WELL COMPLETED 7-2-84	TYPE OF WELL Abandoned Test
FORMATION COMPLETED IN Niagaran	TOTAL DEPTH 8073	ELEVATION KB 1172.4	RB RT RF GN 1171.1 1156.4
ROTARY TOOLS From 0 Feet to 8073 Feet		CABLE TOOLS From Feet to Feet	

WELL CASING RECORD

TUBING AND CASING DATA				CEMENTING DATA			PERFORATIONS OR OPEN HOLE		
SIZE	LB./FT.	GRADE	DEPTH	SACKS	TYPE	STAGING DEPTH(S)	NO. HOLES	FROM	TO
13 3/8"	54.5#	K-55	905	400	CL-525 Lite	Surface and dropped back,		grouted w/	100 sx.
9 5/8"	129 Jts.	N-80	1st stage	900	sx				
	42.5#								
	10 Jts.	N-80	5575	2nd stage	1200	sx 3600			
	40#								

WATER ZONES

WIRE LINE LOGS RUN

FORMATION	FROM	TO	AMOUNT	SERVICE COMPANY	TYPE LOG	INTERVAL LOGGED	COPY TO SURVEY
(Fresh)							
				Schlumberger	LDT-CNL-GR	100 - 5578	Yes
						5520 - 8070	Yes

FRACTURE OR ACID TREATMENT

SOLUTION MINING

DATE	FROM	TO	QUANTITY	NAME AND NUMBER OF INJECTION AND TARGET WELL - DISTANCE APART
None				None

The information in and attached to this report is complete and correct.

SIGNATURE

TITLE

DATE

William E. Barker

Geologist

7/30/84

GIVE COMPLETE FORMATION RECORD ON REVERSE SIDE

SURVEY RECORD OF WELL LOCATION

(Submit five copies with Application for Permit to Drill a Well for Oil or Gas,
Brine Disposal, Hydrocarbon Storage or Secondary Recovery)

84024

LESSEE (OWNER OF LEASE RIGHTS) PPG INDUSTRIES, INC.			
LESSOR (OWNER OF MINERAL RIGHTS) Don and Caroline Johnson			WELL NO 3-1
LOCATION NW ¼ OF SE ¼ OF NE ¼ SECTION 1 T. 16 N R. 9 W			
TOWNSHIP Grant		COUNTY Mecosta	
PLAT BELOW REPRESENTS ONE FULL SECTION (1 Mile Square)		1. Outline drilling unit and spot well location on plat at left. Where drilling unit crosses section lines, divide the plat into an east half and a west half OR a north half and a south half (which ever applies). Outline the unit and locate the well in two directions from NEAREST quarter section and unit lines. 2. Location of well in two directions from NEAREST quarter section and unit lines is: SURFACE LOCATION <u>1077</u> ft. from <u>South</u> line of Quarter Section (north-south) <u>1237</u> ft. from <u>East</u> line of Quarter Section (east-west) _____ ft. from _____ line of unit (north-south) _____ ft. from _____ line of unit (east-west) 3. Describe wellsite marker. Show or describe access route if it is not readily accessible. Wellsite is marked with a painted wood stake. Site can be reached from the North off Balsam Road. See supplemental plat. Ground Elevation = <u>1156.4</u> feet, U.S.G.S. datum.	
(Scale of Plat — 1 inch equals 1320 ft.)			
4. ON SEPARATE PLAT OR PLOT PLAN: A. Locate, identify, and show distances to all roads, power lines, residences, farm buildings and other structures within 300 feet of the stake; B. Locate, identify, and show distances to all lakes, streams, swamps, drainage ways or any other surface water features within 1320 feet of the stake. 5. In an ENVIRONMENTAL IMPACT ASSESSMENT describe all structures and surface features shown detailing plans for hazards prevention and erosion control (See instructions and guidelines for preparation of an environmental impact assessment).			
NAME OF INDIVIDUAL WHO SURVEYED WELL SITE <i>Jerry L. Wilcox</i>		DATE 5-4-84	TITLE President
ADDRESS J. L. WILCOX & ASSOCIATES, INC. 7230 North U.S.-131 Manton, Michigan 49663			
I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF			
SIGNATURE (LESSEE OR AUTHORIZED REPRESENTATIVE)	ADDRESS (IF DIFFERENT THAN LESSEE)		DATE (MONTH, DAY, YEAR)

Exhibit A

Surface Casing (13-3/8" in 17-1/2" hole @ 900')

1. Use insert float and Texas Pattern Shoe and lock to shoe joint with thread lock.
2. No centralizers.
3. Circulate hole a minimum of one complete circulation.
4. Do not reciprocate casing.
5. Run bottom (red) wiper plug. Do not use if carrying L.C.M. in cement.
6. Pump 70 bbls. fresh water ahead of cement.
7. Cement with:
 - a. 475 sx. 50/50 Pox., 6% total gel, 3% CaCl
1.54 ft.³/sk., 13.3#/gal., 7.66 gals./sk.
 - b. 200 sx. Class A, 3% CaCl_2
1.18 ft.³/sk., 15.6#/gal., 7.66 gals./sk.

PPG INDUSTRIES, INC.

JOHNSON 3-1

MECOSTA COUNTY, MICHIGAN

PLAN VIEW
1 IN. = 300 FT.

OBJECTIVE NO. 1:

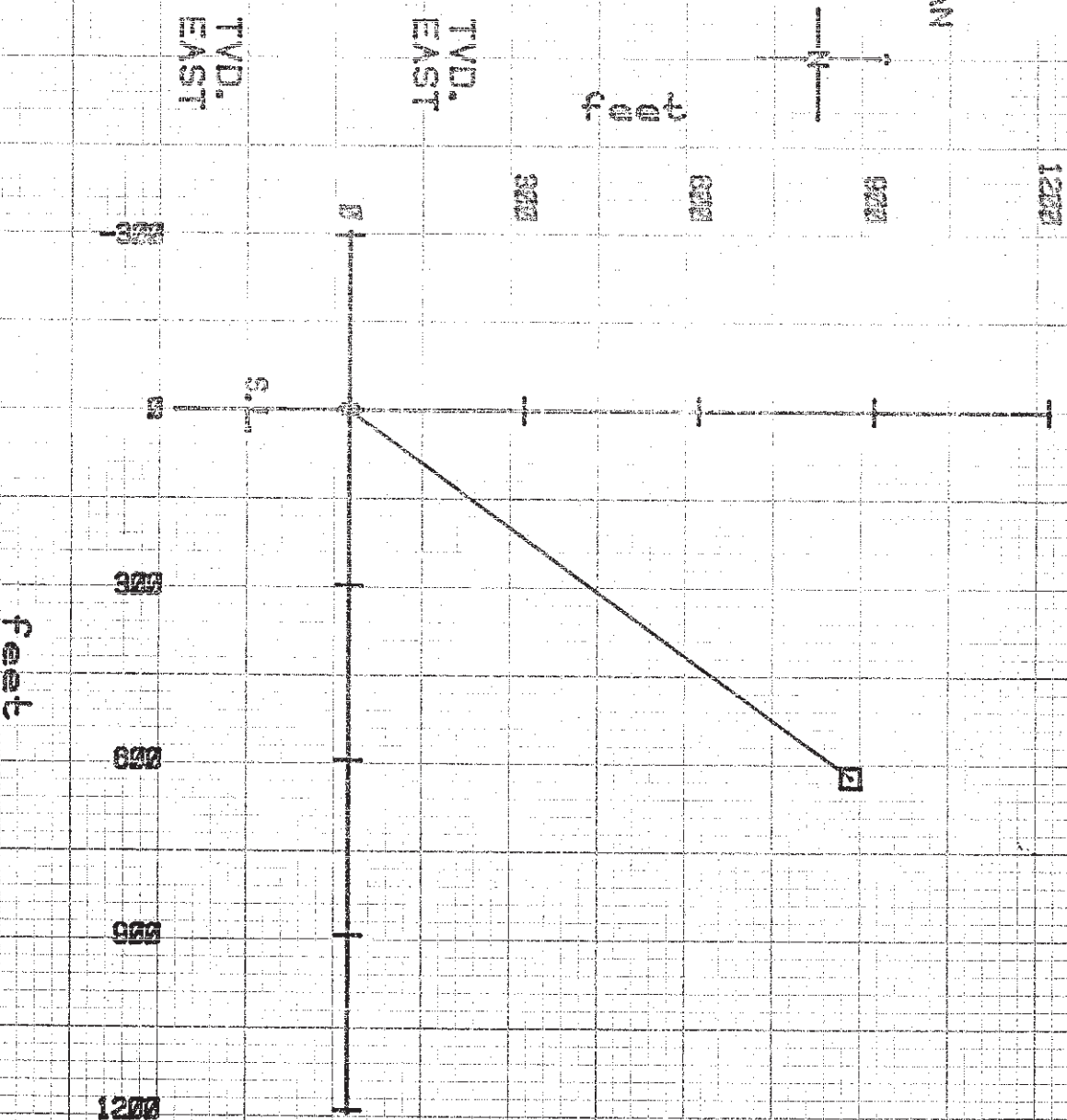
1065' N35.59'E OF
SURFACE LOCATION
7734' M.D. 7550' TVD.
862' NORTH 626' EAST

OBJECTIVE NO. 2:

1065' N35.59'E OF
SURFACE LOCATION
8234' M.D. 8050' TVD.
862' NORTH 626' EAST

SUBMITTED BY:

TRIPLE G DIRECTIONAL DRILLING
TRAVERSE CITY, MICHIGAN

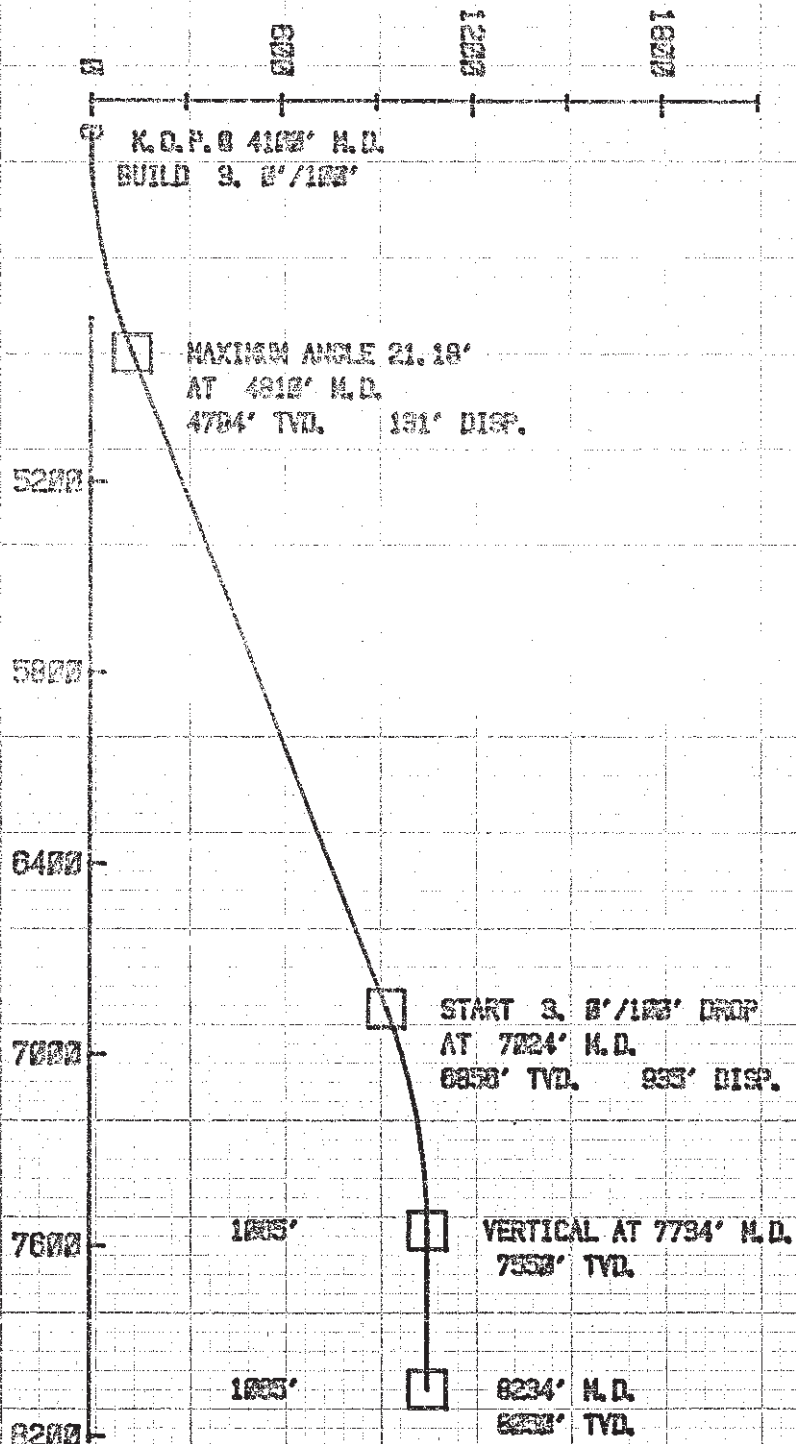


PPG INDUSTRIES, INC.
 JOHNSON 3-1
 MECOSTA COUNTY, MICHIGAN

VERTICAL SECTION 1 IN. = 600 FT.

feet

feet



SOUR GAS CONTINGENCY PLAN - PART II
PPG - JOHNSON #3-1
PAGE 2

NEAREST PUBLIC TELEPHONE

East 0.2 miles on Balsam Road; then North 3/4 of a mile on 120th Avenue; then West 1 1/2 miles on Schofield Road to 135th Avenue; Then North on 135th Avenue two miles; then West 4 1/2 miles on Hersey Road to the general store in the town of Hersey, on 180th Avenue. Phone is located in front of store.

MUD TREATMENT

A gas buster will be provided.

NOTE: For location of residences, public gathering places and evacuation routes, see vicinity map.