

Phase I Environmental Site Assessment

Ebeling Property
Coppins Road
Hayes Township, Otsego County, Michigan

June 16, 2015

Prepared for:

Wolverine Power Supply Cooperative, Inc.
10125 Watergate Road
Cadillac, MI 49601

Prepared by:

Compliance, Inc.
223 Lake Avenue
Traverse City, MI 49684

Compliance, Inc. Project Number: 3461



TABLE OF CONTENTS

1.0	SUMMARY	1
2.0	INTRODUCTION	3
2.1	Purpose	3
2.2	Scope of Services	3
2.3	Significant Assumptions	5
2.4	Limitations and Exceptions	5
2.5	Special Terms and Conditions	5
2.6	User Reliance	5
3.0	SITE DESCRIPTION	6
3.1	Location and Legal Description	6
3.2	Site and Vicinity Characteristics	6
3.3	Current Use of Property	7
3.4	Structures, Roads and Other Improvements	7
3.5	Current Uses of the Adjoining Properties	7
4.0	USER PROVIDED INFORMATION	8
4.1	Title Records	8
4.2	Environmental Liens or Activity and Use Limitations	8
4.3	Specialized Knowledge	8
4.4	Commonly Known or Reasonably Ascertainable Information	8
4.5	Owner, Property Manager and Occupant Information	8
4.6	Reason for Performing the Phase I ESA	9
5.0	RECORDS REVIEW	9
5.1	Site Database Listings	9
5.2	Off-site Property Database Listings	9
5.3	Historical Use Information for the Site and Surrounding Area	10
6.0	SITE RECONNAISSANCE	11
6.1	Methodology and Limiting Conditions	11
6.2	Site Setting and Observations	11
7.0	INTERVIEWS	12
7.1	Interview With Site Owner	12
7.2	Interview With Site Manager	13
7.3	Interview With Site Occupant	13
7.4	Interviews With Local Government Officials	13

TABLE OF CONTENTS, Continued

8.0	FINDINGS, OPINIONS AND CONCLUSIONS	14
9.0	DATA GAPS, DEVIATIONS AND LIMITATIONS	16
10.0	CERTIFICATION AND QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS	17
11.0	REFERENCES	17

FIGURES

Figure 1	Site Location Map
Figure 2	Site Map

APPENDICES

Appendix A	Site Survey
Appendix B	User Provided Information
Appendix C	Environmental Data Resources, Inc. Radius Report
Appendix D	Natural Gas Well Records
Appendix E	Historic Aerial Photographs
Appendix F	Historic Topographic Maps
Appendix G	Site Photographs
Appendix H	Resume of Key Personnel

**PHASE I
ENVIRONMENTAL SITE ASSESSMENT**

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1.0 SUMMARY

At the request of Wolverine Power Supply Cooperative, Inc. (WPSCI), Compliance, Inc. performed a Phase I Environmental Site Assessment (Phase I ESA) of a parcel of land located in Hayes Township (North), Otsego County, Michigan (hereafter referred to as the “site” or the “subject site”). The site is a mainly undeveloped, approximately 106-acre, parcel located on the east side of Coppins Road north of Van Tyle Road. The site has an active natural gas well and associated natural gas pipelines. This Phase I ESA was performed in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E 1527-13. The assessment of the site was completed over the period June 8, 2015 to June 16, 2015. The findings of this assessment are summarized below and presented in detail in the main body of this report.

One recognized environmental condition (REC) as defined by ASTM was revealed during the assessment of the site. This was:

- **Natural Gas Production Operations.** One natural gas well is located on the site. Piping associated with natural gas production on the site and on nearby properties also cross the site. The site also surrounds (on three sides) a parcel that contains a brine injection well. All of these features were constructed in the early-1990s. The possibility of a past release of natural gas, natural gas condensates, brine, or drilling fluids/mud associated with these site/adjoining site uses is considered a REC. While considered a REC, the risk of significant potential impairment associated with this site use is reduced by the facts that: 1) there have been no reported releases of hydrocarbons or brine associated with these activities, 2) no surficial observations of a release, including stained soils or stressed vegetation, were observed during the site walkover, 3) monitoring wells installed to evaluate potential releases from the injection and aboveground storage of brine at the adjoining site has not shown evidence of a brine release during its regulatory required sampling, and 4) the natural gas development activities have occurred during a period of time when robust regulatory oversight was in place and no historic (pre-1990) natural gas or oil development of the site is known to have occurred.

While not considered to be an REC, the following other findings of this Phase I ESA are noted.

- **Nitrate in Groundwater.** According to information provided by the Health Department of Northwest Michigan and the Michigan Department of Environmental Quality (DEQ), elevated nitrate concentrations, presumed to be associated with agricultural activities, have been identified in groundwater in portions of Hayes Township near the site. While the site is not known to be within an area with elevated nitrate concentrations in groundwater, there are no water supply wells on the site and no past groundwater sampling data for the site exists. According to state of Michigan databases, the nearest well that has shown elevated nitrate is located approximately ½ mile northwest of the site. Nitrate concentrations in drinking water pose some health concerns, particularly for children under two years of age in residential settings. Nitrate concentrations in groundwater would be of lower concern on commercially developed property where young children do not have typical exposures. While not known to be present at the site, district health department personnel indicated that they would recommend any future water supply well installed at the site be screened at least fifty feet below the water table to reduce the potential of encountering elevated nitrate concentrations, if any exists, in groundwater beneath the site.
- **Historical Agricultural Use of the Property.** Portions of the property were used for agricultural purposes (i.e., potato production and planted pine trees, with no evidence of past orchard uses) from some time prior to 1938 to the 2000s. Compliance, Inc. was not provided any specific information regarding historical agricultural chemical use, but pesticides, fertilizers or other agricultural chemicals may have been applied on the property. It is possible that residual concentrations of agricultural chemicals may be present in soil and potentially groundwater. If residual concentrations of agricultural chemicals are present in soils, it is unlikely that they would be the subject of regulatory scrutiny in the context of a non-residential land use scenario. As discussed above, health department personnel familiar with the site did not report knowledge of groundwater contamination associated with past agricultural uses of the site, although elevated concentrations of nitrate in groundwater in some areas of Hayes Township have been documented.

It is Compliance, Inc.'s best professional judgment, based upon all appropriate inquiry and the nature of the site and surrounding properties, that this Phase I ESA is sufficient to discover potential RECs at the site. The results of this assessment are intended to serve as indicators of the potential for environmental impact arising from reasonably discoverable chemical and fuel management and waste disposal activities conducted at the site, or the existence of sensitive environmental attributes in the immediate vicinity. However, the results of this evaluation should be used with the knowledge that no environmental site assessment can wholly eliminate uncertainty regarding potential environmental impairment in connection with a property. Therefore, this assessment is intended to appropriately reduce, but not eliminate, uncertainty regarding the potential for RECs in association with this property.

2.0 INTRODUCTION

2.1 Purpose

Compliance, Inc. was retained by WPSCI to conduct a Phase I ESA of a parcel of land located in Section 3 of Hayes Township (North), Otsego County, Michigan (hereafter referred to as the “site” or the “subject site”). The site is a mainly undeveloped, approximately 106-acre, parcel of land located east of Coppins Road and north of Van Tyle Road. The site has one active natural gas well and associated natural gas pipelines. This Phase I ESA was conducted from June 8, 2015 to June 16, 2015.

The purpose of the ESA was to identify, to the extent feasible, “Recognized Environmental Conditions” (RECs), as defined by the American Society for Testing and Materials (ASTM) associated with the site, and to provide guidance for additional investigation in connection with the site, if warranted. For this report, the term “recognized environmental conditions” is defined as the presence or likely presence of any hazardous substances or petroleum products at the site under conditions that indicate an existing, past or the material threat of a release into the environment. The term includes hazardous substances or petroleum products used under conditions in compliance with applicable laws and regulations. The term is not intended to include *de minimis* concentrations of regulated substances released or potentially released to the environment that generally do not present a material risk to public health or the environment, and that generally would not be subject to compliance or enforcement actions.

The ESA was also intended to identify “historical recognized environmental conditions” (HRECs) associated with the subject site. An HREC, as defined by the ASTM Standard, is an environmental condition that in the past would have been considered a REC, but has been satisfactorily remediated or addressed in such a manner that it is not considered to be a current REC.

2.2 Scope of Services

To accomplish the above goals, Compliance, Inc. undertook the following:

- Compliance, Inc. personnel conducted a site walkover to visually inspect the site and adjacent properties on June 10, 2015;
- A summary of lists of known sites of environmental concern or activity maintained by federal, state, and local regulatory agencies was obtained from Environmental Data Resources, Inc. (EDR). This report was reviewed to provide information concerning hazardous waste spills and other regulated activities that may have occurred either at the site or within ASTM-specified distances from the site. This task included reviewing information from several databases including the following:
 - National Priority List (NPL);

- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS);
 - Resource Conservation and Recovery Information System (RCRIS);
 - Treatment Storage and Disposal Facilities;
 - Recorded Large and Small Quantity Generators;
 - Emergency Response Notification System (ERNS);
 - Michigan Sites of Environmental Contamination (SHWS);
 - Solid Waste Facilities Database (SWF/LF);
 - Michigan Leaking Underground Storage Tank (LUST) List;
 - Michigan Registered Underground Storage Tank (UST) List;
- The Hayes Township Assessor's Office and Supervisor's Office were contacted for information concerning past site uses and any known environmental issues at the site or on adjacent properties;
 - The Otsego County Fire Department was contacted concerning records of fire and other potential emergency response activities at the site;
 - The Health Department of Northwest Michigan was contacted concerning any available environmental records, including well logs or septic system permits, for the site;
 - Ten historic aerial photographs of the site were obtained and reviewed;
 - Two historic topographic maps for the site were obtained and reviewed.
 - U. S. Geological Survey and United States Department of Agriculture publications were reviewed to generally assess hydrogeology, surface water and resources in the vicinity of the site and its surrounding area;
 - Sanborn Mapping Coverage for the site was requested from EDR (the site is in a no coverage area);
 - Interviews were conducted with a representative of the site owner regarding knowledge of past site uses and potential environmental conditions at the site;
 - Files maintained at the MDEQ District office in Gaylord, Michigan concerning oil and gas activities at the site were obtained and reviewed;
 - The MDEQ's Oil, Gas and Minerals (OGM) Contaminated Site Database was obtained and reviewed; and
 - Information concerning environmental conditions at and near the site was obtained from representatives of the DEQ Environmental Response and OGM Divisions in Gaylord, Michigan familiar with the site.

2.3 Significant Assumptions

In conducting this review, no significant assumptions were made, except for the following:

- Based on the depiction of groundwater flow determined from monitoring wells located at the adjoining injection well property, the groundwater flow direction at and adjacent to the site is estimated to be to the west or northwest. In evaluating potential on-site impacts from off-site sources, those off-site facilities not located adjacent to or up gradient of the subject site in terms of groundwater flow are generally not considered to represent a significant concern to the subject site. This interpretation is based on the assumption that a hazardous material released to the subsurface generally does not migrate laterally within the unsaturated soil for a significant distance, although a hazardous material can migrate in the groundwater in a generally downgradient direction.

2.4 Limitations and Exceptions

There were no conditions limiting the inspection of the site. Data gaps or limitations in records reviewed for the site, none of which were considered to significantly affect the conclusions of this ESA, are discussed in Section 9.0 of this report.

2.5 Special Terms and Conditions

This assessment was conducted in accordance with ASTM Standard E1527-13. Issues considered outside the scope of the ASTM Standard include asbestos-containing materials, radon, lead-based paint, lead in drinking water, wetlands, indoor air quality, and high voltage power lines. These out of scope issues are not required as part of the ASTM E1527-13 standards and, therefore, are not discussed in this report.

2.6 User Reliance

This assessment has been prepared for use by WPSCI, and those parties authorized by WPSCI to utilize this report in support of WPSCI's transaction(s) involving the site, and may not be relied upon by any other person or entity without Compliance, Inc.'s express written permission. The report is considered current for a period of 180 days from the date of the site inspection. The findings, opinions and conclusions presented in this report represent Compliance, Inc.'s best professional judgment based upon the information available and conditions existing as of the date of the review. In performing its assignment, Compliance, Inc. must rely upon information obtained from the client and site personnel, publicly available information, and information provided by third parties. Accordingly, the conclusions in this report are valid only to the extent that the information provided to Compliance, Inc. was accurate and complete. Compliance, Inc. found no reason to question the validity of information received unless explicitly noted elsewhere in this report.

3.0 SITE DESCRIPTION

3.1 Location and Description

The property encompassed by this ESA consists of a parcel of land located in Section 3 of Hayes Township (T30N – R4W), Otsego County, Michigan. According to records on file with Otsego County, the parcel has a property ID number of 071-003-300-025-01. A survey of the property, which is divided into two parcels for the purposes of Wolverine’s acquisition plans (Parcel 1 and Parcel 2), is included as Appendix A.

Figure 2 presents a map of the site with parcel boundaries and site features.

3.2 Site and Vicinity Characteristics

The site is located in a rural area in Hayes Township, Michigan. There are no structures located on the site. One natural gas well is located on the site and underground pipelines connecting the on-site natural gas well and two off-site natural gas wells with an adjoining brine injection well are also located on the site. Other than natural gas production, the site is not currently used for any developed purpose. Pertinent physical setting and utility information for the site is summarized below.

Site Characteristics and Utility Information		
Conditions	Information Source	Description
Site Characteristics		
Elevation (above mean sea level)	USGS topographic map (Elmira, MI, 1986); Google Earth	Ranges from approximately 1,350 feet on the central and southern portions of the site to 1,330 feet near the northwest corner of the site.
Topographic Gradient	USGS topographic map; Visual observations	The site is relatively flat with a gradual downward slope to the northwest.
Surface Water Runoff	Visual observations	Percolates into the ground surface. There are no streams or ponds located on the site.
Nearest Surface Water Body to the Site	USGS topographic map; Visual observations	Lake Twenty Seven is located approximately 1.25 miles northwest of the site.
Presumed Direction of Shallow Groundwater Flow	DEQ records for monitoring wells at an adjoining site.	Groundwater flow has been determined to be to the west or northwest.

Site Characteristics and Utility Information		
Conditions	Information Source	Description
Depth to Groundwater	DEQ records for monitoring wells at an adjoining site.	Approximately 90 feet below ground surface (BGS).
On-site Wells	Site occupant personnel, state water well database, state oil and gas records.	There is one natural gas well located on the site. There are no on-site water supply wells.
Nearest Groundwater Supply Wells	EDR database report.	The nearest groundwater supply wells listed on the EDR database report are located adjacent to the property to the southeast (5940 Van Tyle Road) and south (5258 Van Tyle Road) of the site. Water supply wells for which records are not on the EDR or state database are also located at residential properties directly southwest and west of the site (across Coppins Road).
Geologic Conditions	Water well logs on file at MDEQ Well Viewer.	Near surface soils consist predominantly of sand and gravel.
Utility Information		
Electricity Supplier	Site Owner	Great Lakes Energy
Use of Fuel Oil	Site Owner	No known current or former use of fuel oil.
Water Supplier	Site Owner	None
Sanitary Sewer	Site Owner	There is no municipal sewer servicing the site.
Septic Systems	Site Owner	There are no septic tanks or drain fields on the site.

3.3 Current Use of Property

The site consists predominantly of open or wooded land. The only current developed use of the site is for natural gas production.

3.4 Structures, Roads and Other Improvements

There are no structures located on the site. One natural gas well is located on the site and natural gas pipelines connect that well and other nearby wells to a brine injection well located on property adjacent to the site to the south. The locations of these site features are shown on Figure 2.

3.5 Current Uses of the Adjoining Properties

The surrounding property uses include:

Surrounding Property Uses	
Direction	Adjoining Property Use(s)
North	Undeveloped wooded land.
East	Undeveloped wooded land, open land and residential use property.
South	Residential and wooded land and a property containing a brine injection well.
West	Open land or residential land.

In addition to the above surface uses, natural gas production activities (wells and pipelines) are located on several adjoining properties.

4.0 USER PROVIDED INFORMATION

Joe Hughes of WPSCI, responded to a User Questionnaire that requested certain information required by ASTM Standard E1527-13. A summary of the information provided by Mr. Hughes is discussed below and is included in Appendix B.

4.1 Title Records

No title records were provided by WPSCI as a part of this Phase I ESA.

4.2 Environmental Liens or Activity and Use Limitations

Mr. Hughes was not aware of any environmental liens or activity and use limitations that have been recorded for this Site.

4.3 Specialized Knowledge

Specialized knowledge or experience concerning the site was requested of Mr. Hughes during the course of Compliance, Inc.'s investigation. Mr. Hughes was aware of the site's past agricultural use and that the site is part of an active natural gas field and has an on-site natural gas well and natural gas pipelines.

4.4 Commonly Known or Reasonably Ascertainable Information

Mr. Hughes was aware of the past agricultural use of the site and the current and past natural gas production activities at the site.

4.5 Owner, Property Manager and Occupant Information

According to information provided to Compliance, Inc., the parcel is owned by the Gerry and Virginia Ebeling Trust. Owner/occupant information, provided to Compliance, Inc. by a representative of the trust, is summarized in Section 7.0 and was consistent with information obtained from publicly available resources.

4.6 Reason for Performing the Phase I ESA

It is Compliance, Inc.'s understanding that WPSCI has arranged this assessment in connection with a potential property acquisition. Compliance, Inc. assumes that this assessment is being conducted to identify potential environmental conditions associated with the property that could materially affect the future use or the value of the property.

5.0 RECORDS REVIEW

5.1 Site Database Listings

Compliance, Inc. reviewed the results of the state and federal environmental database searches performed by EDR (see Appendix C). The site is not listed on any state or federal environmental databases.

The EDR report does list the presence of a natural gas well on the site (Ebeling C1-3 also referred to as Wildwest C1-3). Copies of the well summary report and well logs obtained from the DEQ for this well are included in Appendix D. Records maintained in DEQ files indicate that a lined reserve pit (a pit used to contain well cutting fluids and mud) was installed during the installation of the Ebeling C1-3 well. Typically, drilling liquids are removed from a reserve pit after well completion and residual solids are covered with a plastic liner and remain at the site. According to the property owner, Bretiburn Energy and Linn Energy operate this natural gas well.

The Ebeling C1-3 well is not listed on the MDEQ OGM contaminated site database.

5.2 Off-site Database Listings

As indicated in the EDR report included as Appendix C, there were no listings of off-site properties within applicable ASTM search radii on any state or federal environmental databases. The EDR report did depict natural gas wells located on directly adjoining property to the north, west and south of the site. One brine injection well (Wildwest D2-3 SWD) is located on adjoining property to the south. DEQ files for that facility were obtained and reviewed as a part of this ESA. That property is not listed as the location of a past release and no records in DEQ files indicated an environmental condition at that adjoining site. Monitoring wells on that property have been sampled periodically for indicators of a brine release and data provided by the DEQ did not indicate past adverse conditions in the monitoring wells on that site.

The nearest spill/release site listed on the OGM site database is located about ½ mile west of the subject site. That spill, 10 to 15 barrels of brine, is listed as having occurred in 2011 at a "Wildwest Gathering Line" for a well site with permit number 48210. The spill was responded to with a 15 yard soil removal and post removal testing. As discussed in Section 7.0, according to DEQ staff, there is no information to indicate that that release or any release at an off-site oil or gas well, injection well, or central processing facility has affected the subject site.

5.3 Historical Use Information for the Site and Surrounding Area

To evaluate the historical uses of the property, Compliance, Inc. reviewed readily available historical aerial photographs, city directories, topographic maps and property information maintained by local government agencies.

The results of Compliance, Inc.'s historical review are presented below.

Summary of Historical Source Information	
Source	Observations
<p>Aerial Photographs (1938, 1952, 1963, 1981, 1993, 1994, 2005, 2006, 2009, 2010, 2012 as presented in Appendix E)</p>	<p>The majority of the site appears to be in active agricultural use (field crops) in the 1938 photograph. The northeastern corner of the site and the center of the site (north of the current injection well parcel) are wooded at that time. No structures are evident on the site in this photograph. The nearest structures are at the adjoining home site located on the northeast corner of Coppins and Van Tyle. Homes/agricultural buildings are also located on off-site property to the northwest and southeast of the site, across Coppins and Van Tyle Roads, respectively. The 1952, 1963 and 1981 photographs continue to show the site as being a predominantly agricultural parcel with similar wooded areas on the northeast and central portions of the site. The 1993 and 1994 photographs shows the first evidence of the natural gas field development on the site and on nearby properties to the west and northeast. A disturbed area around the natural gas well on the northwest portion of the site is evident along with surface disturbances along the alignment of a pipeline connected to that well. The remainder of the site remains open fields or wooded land. The brine injection well property surrounded by the south portion of the subject site shows signs of surficial activity in both photographs. Aerial photographs from 2005 to 2012 show the site largely in its current configuration and similar to that seen in 1994 with the exception that an area of pine tree planting on the eastern portion of the site is evident in 2005 and appears mostly removed by 2012. A progressive increase in pine tree growth on the western portion of the property boundary is evident in the more recent photographs.</p> <p>Adjoining properties all appear to show prior residential, agricultural or wooded land uses on the historic aerial photographs. With the exception of the natural gas production activities on the site and nearby properties, the aerial photographs do not present evidence of past uses of the site or nearby properties that are likely to pose an environmental concern.</p>
<p>Topographic Maps (1961, 1986 as presented in Appendix F)</p>	<p>The 1961 topographic map shows no developed use of the site. Both Coppins Road and Van Tyle Road are present to the west and south respectively and one structure is shown on the northeast corner of those two roads (in the location of the current home on the adjoining property southwest of the site). The 1986 topographic map indicated the majority of the site to be open or agricultural land with no structures or other manmade features noted. Some wooded areas on the north portion of the site and the central portion of the site (north of the adjoining brine injection well property). Other nearby structures include buildings directly southeast of the site (north of Van Tyle Road) and directly west of the site (across Coppins Road).</p>
<p>Sanborn Maps None Available</p>	<p>The property is not located in an area historically mapped for fire insurance purposes.</p>

6.0 SITE RECONNAISSANCE

6.1 Methodology and Limiting Conditions

Jim Rossi of Compliance, Inc. conducted a visit to the site on June 10, 2015. During the site visit, Mr. Rossi was accompanied by Joe Hughes and Joe Hazewinkel of WPSCI who assisted in walking the site in multiple transects. Observations of the property were made to evaluate if any RECs, as defined in Section 2, are present. There were no limiting conditions at the time of the site visit. Photographs taken during the site visit are presented in Appendix G.

6.2 Site Setting and Observations

The site is located in a rural residential and agricultural area east of Coppins Road in Hayes Township, Michigan. The western half of the property consists predominantly of open fields or planted pine trees with a more heavily wooded area (predominantly hardwoods and mature pine trees) located in the northeastern property corner. The eastern portion of the site is also a mixture of open land with some planted tree areas with a more heavily wooded area on the central portion of the site, north of adjoining property used for brine injection. The parcel is relatively flat with a downward slope generally to the northwest. No surface water features were observed on the site.

With the exception of natural gas production operations and overhead electric lines/right-of-way, the site is not currently the subject of any active use. One natural gas well (with signage labeling it as “Wildwest C1-3”) was observed in the northwestern corner of the site. The well area did not show surficial evidence of stressed vegetation or past liquid releases. A pipeline alignment from the well to the east and south was evident and was connected to a natural gas injection well located on property west and northeast of the site. Additional natural gas pipeline alignments connecting to off-site natural wells to the west and northeast were also observed. An overhead electric transmission line bisects the southern portion of the site running east to west. Informal pathways are present on property, however, the parcel did not have indications of frequent surface use outside of the natural gas well and pipelines.

No evidence of waste disposal at the site was observed. With the exception of a rock pile located on the northwest portion of the site, no evidence of significant surface disturbances or fill areas was observed on the site.

Properties surrounding the site were observed from perimeter areas during the site visit. The site is in a mixed residential and rural agricultural area. An adjoining property to the south is surrounded on three sides by the subject site and is the location of a brine injection tank and well. The tank was located in a plastic lined bermed area and three groundwater monitoring wells were observed around the tank area. The remaining surrounding properties were used predominantly for residential purposes with limited agricultural activities.

The site is bound on the west by Coppins Road across which is residential and undeveloped open land. A home and some outbuildings are located on a parcel directly southwest of the site and according to the site owner were the former homestead features associated with the subject site. The site was bound to the south by Van Tyle Road across which is wooded land and a residential use property. The site is bound to the east by undeveloped open and wooded land and a residential use parcel. The site was bound on the north by undeveloped wooded land. Direct inspection of surrounding parcels was beyond the scope of this Phase I ESA. However, based on casual observation, with the exception of the brine tank and injection well, no significant outdoor storage of chemicals or wastes was observed on adjoining parcels during the site visit.

7.0 INTERVIEWS

7.1 Interview With Site Owner's Representative

Gerry Ebeling, a representative of the Ebeling Trust, was interviewed concerning the current use and the history of the site on June 9, 2015. According to Mr. Ebeling, he and his wife or members of his wife's family (last name Bradley) have owned the site for approximately 50 years. Since their ownership, Mr. Ebeling indicated that the site has not been the subject of any developed use other than for agricultural purposes (originally potatoes and later some planted pine trees) and natural gas production. Mr. Ebeling was not aware of any past use of the site for any residential, commercial or industrial activities. He reported not observing evidence of any former structures or other above ground features on the site. Mr. Ebeling was unaware of any former septic tanks or drain fields or any former water supply wells on the site. He did not know of any former (abandoned or closed) natural gas or oil wells located on the site.

Mr. Ebeling reported that a home-site at the northeast corner of Coppins and Van Tyle Roads was formerly a part of the property and was the residence used by the Bradley family. He stated that that parcel and an approximately 10-acre parcel along Van Tyle Road, which contains a brine injection well, were divided from the site in the 1990s or 2000s. He believed the adjoining injection well was being operated by Linn Energy or Breitburn Energy.

Mr. Ebeling was not aware of any soil or groundwater contamination at the site or on any adjoining or nearby property that may have affected the site. To his knowledge, all soils located on the site are native and he was not aware of any fill material placed on the site. With the exception of the natural gas production activities, Mr. Ebeling was not aware of the past storage or use of petroleum products or hazardous materials at the site. He was not aware of a past use of the property for any waste disposal and knew of no waste disposal areas on the site.

7.2 Interview With Site Manager

The Ebeling Trust both owns and manages the site and the interview with Mr. Ebeling, as summarized in Section 7.1, presents both owner and manager information.

7.3 Interview With Site Occupant

There are currently no site occupants. Information provided by Mr. Ebeling as summarized in Section 7.1, presents occupant information

7.4 Interviews with Local Government Officials

7.4.1 Hayes Township Assessors and Supervisors Offices

Mary Sanders, who serves as the Hayes Township Assessor and Supervisor, was contacted to obtain property information and inquire about her knowledge of the site and of potential environmental conditions at the site or on surrounding properties. Ms. Sanders was not aware of environmental contamination associated with the subject site. She was generally aware of natural gas production activities at and around the site but did not have information about environmental conditions at any nearby properties.

7.4.2 Hayes Township Fire Department

David Duffield, Chief of the Otsego County Fire Department, was contacted to determine if there were any records of past fire or environmental responses at the site. The fire department reported no records or knowledge of any fire or environmental responses to the site.

7.4.2 Health Department of Northwest Michigan

The Health Department of Northwest Michigan was contacted via Freedom of Information Act (FOIA) to determine the following:

1. If any water well or septic tank permits or records were available for the site.
2. If there were any files of pollution incidents or other environmental issues concerning the site.

Health department personnel reported no records of current or former drinking water wells or a septic tanks/drain fields for the site. No information concerning soil or groundwater contamination was present in health department files. Chuck Edwards, Environmental Health County Supervisor, was not aware of soil or groundwater contamination either at the site or in the vicinity of the site. He reported that the site is not known to be in an area with any groundwater contamination concerns, although he reported that nitrate has occasionally been detected in drinking water wells within Hayes Township near the site. He stated that, as a precaution, he would recommend that any future drinking water supply wells at the site

be screened at least fifty feet below the water table to reduce the likelihood of encountering elevated nitrate, if it were present.

To further evaluate the potential for nitrate to occur in groundwater at or near the site, State of Michigan Waterchem Database records for nitrate were reviewed as a part of this ESA. Those records did not show the site or adjoining properties to have a well with identified elevated concentrations of nitrate in groundwater. That source showed the nearest well with elevated nitrate being located about ½ mile northeast of the site. It is notable, however, that the data contained in the WaterChem Database was collected prior to 2003.

7.4.4 DEQ Remediation and Redevelopment Division

David Lindsay of the DEQ Gaylord District Remediation and Redevelopment Division was interviewed concerning his knowledge of potential environmental concerns at the site or in the surrounding area. Mr. Lindsay reported no knowledge of soil or groundwater contamination issues at the site or on any adjoining property that may have affected the site.

7.4.5 DEQ Office of Oil, Gas and Minerals

Janet Smigelski of the DEQ Office of OGM was interviewed concerning her knowledge of potential environmental concerns at the site or in the surrounding area. Ms. Smigelski was aware of the ongoing natural gas wells and pipeline use of the site and surrounding properties. She reported that those activities had been ongoing since the early 1990s and that to her knowledge, neither the site nor any adjoining properties had been the location of past releases or notices of violations associated with natural gas production activities. She reported no knowledge of soil or groundwater contamination issues at the site. Ms. Smigelski indicated that a monitoring well located at the brine injection well facility south of the site has been sampled semi-annually. Ms. Smigelski provided records of past sampling of that monitoring well which, as of its last sampling in October 2014, showed no indications of a brine release (either through chloride or conductivity monitoring). Records provided by Ms. Smigelski indicated the depth to groundwater in the wells at that property were reported to be approximately 90 feet below ground surface.

8.0 FINDINGS, OPINIONS AND CONCLUSIONS

Compliance, Inc has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of a parcel of land located east of Coppins Road in Hayes Township, Otsego County, Michigan described in Section 3.1 of this report. Any exceptions to, or deletions from, this practice are described in Section 9.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with this property except for the following.

- **Natural Gas Production Operations.** One natural gas well is located on the site. Piping associated with natural gas production on the site and on nearby properties also cross the site. The site also surrounds (on three sides) a parcel that contains a brine injection well. All of these features were constructed in the early-1990s. The possibility of a past release of natural gas, natural gas condensates, brine, or drilling fluids/mud associated with these site/adjoining site uses is considered a REC. While considered a REC, the risk of significant potential impairment associated with this site use is reduced by the facts that: 1) there have been no reported releases of hydrocarbons or brine associated with these activities, 2) no surficial observations of a release, including stained soils or stressed vegetation, were observed during the site walkover, 3) monitoring wells installed to evaluate potential releases from the injection and aboveground storage of brine at the adjoining site has not shown evidence of a brine release during its regulatory required sampling, and 4) the natural gas development activities have occurred during a period of time when robust regulatory oversight was in place and no historic (pre-1990) natural gas or oil development of the site is known to have occurred.

While not considered to be an REC, the following other findings of this Phase I ESA are noted.

- **Nitrate in Groundwater.** According to information provided by the Health Department of Northwest Michigan and the Michigan Department of Environmental Quality (DEQ), elevated nitrate concentrations, presumed to be associated with agricultural activities, have been identified in groundwater in portions of Hayes Township near the site. While the site is not known to be within an area with elevated nitrate concentrations in groundwater, there are no water supply wells on the site and no past groundwater sampling data for the site exists. According to state of Michigan databases, the nearest well that has shown elevated nitrate is located approximately ½ mile northwest of the site. Nitrate concentrations in drinking water pose some health concerns, particularly for children under two years of age in residential settings. Nitrate concentrations in groundwater would be of lower concern on commercially developed property where young children do not have typical exposures. While not known to be present at the site, district health department personnel indicated that they would recommend any future water supply well installed at the site be screened at least fifty feet below the water table to reduce the potential of encountering elevated nitrate concentrations, if any exists, in groundwater beneath the site.
- **Historical Agricultural Use of the Property.** Portions of the property were used for agricultural purposes (i.e., potato production and planted pine trees, with no evidence of past orchard uses) from some time prior to 1938 to the 2000s. Compliance, Inc. was not provided any specific information regarding historical agricultural chemical use, but pesticides, fertilizers or other agricultural chemicals may have been applied on the property. It is possible that residual concentrations of agricultural chemicals may be present in soil and

potentially groundwater. If residual concentrations of agricultural chemicals are present in soils, it is unlikely that they would be the subject of regulatory scrutiny in the context of a non-residential land use scenario. As discussed above, health department personnel familiar with the site did not report knowledge of groundwater contamination associated with past agricultural uses of the site, although elevated concentrations of nitrate in groundwater in some areas of Hayes Township near the site have been documented.

9.0 DATA GAPS, DEVIATIONS AND LIMITATIONS

The ASTM Standard defines a data gap as “a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information.” A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps. Limiting conditions and deviations to the ASTM Standard for the assessment as a result of data gaps, none of which were considered significant, are discussed below.

- The earliest readily available historical source that would indicate specific site uses is an aerial photograph dated 1938, which shows the property was already developed for rural agricultural use. ASTM defines agricultural site use as a “developed” site use. The absence of specific information prior to 1938 does not significantly limit the conclusions of this ESA given the agricultural use appears to have been field crop production (there are no indications of a former orchard use of the property) and no commercial or industrial use of the property prior to that time appears likely given the site setting.

It is Compliance, Inc.’s best professional judgment, based upon all reasonable and appropriate inquiry and given the nature of the site, that the scope of this assessment was sufficient to discover readily apparent evidence of contamination. The scope of work considers all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practices, and takes into account commonly known or reasonably ascertainable information regarding the property, the obviousness of the presence or likely presence of a release or threat of a release at the property, and the ability to detect a release by site inspection. The inferences and conclusions presented within this report are based on the data generated during the above described site assessment.

Although all appropriate and reasonable inquiry has been exercised in this study, it is noted that the results of this study provide due diligence of inquiry, but do not provide sufficient information to guarantee that environmental risk is not associated with the property. This is especially pertinent to

potential environmental liability associated with disguised and/or illegal hazardous substance use, or waste management activities.

10.0 CERTIFICATION

I declare that, to the best of my professional knowledge and belief, I meet the definition of an Environmental Professional as defined in 40 CFR §312.10.

Further, I have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed this assessment in conformance with the standards and practices set forth in 40 CFR Part 312

This report has been prepared in conformance with the scope and limitations of ASTM Practice E 1527-13. Refer to Appendix H for resumes of personnel key in undertaking this Phase I ESA.

Researcher and report author:



James E. Rossi
Senior Project Manager

June 16, 2015

Date

11.0 REFERENCES

Duffield, David. Fire Chief. Otsego County Fire Department. 2015. Information request response. June 9.

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Edwards, Chuck. County Sanitarian, Health Department of Northwest Michigan. 2015. Personal communication. June 16.

Hughes, Joe. Representative of Wolverine Power Cooperative, Inc. 2015. User Questionnaire. June 15.

Lindsay, David. DEQ, Environmental Response Division, Gaylord District Office. 2015. Personal communication. June 10.

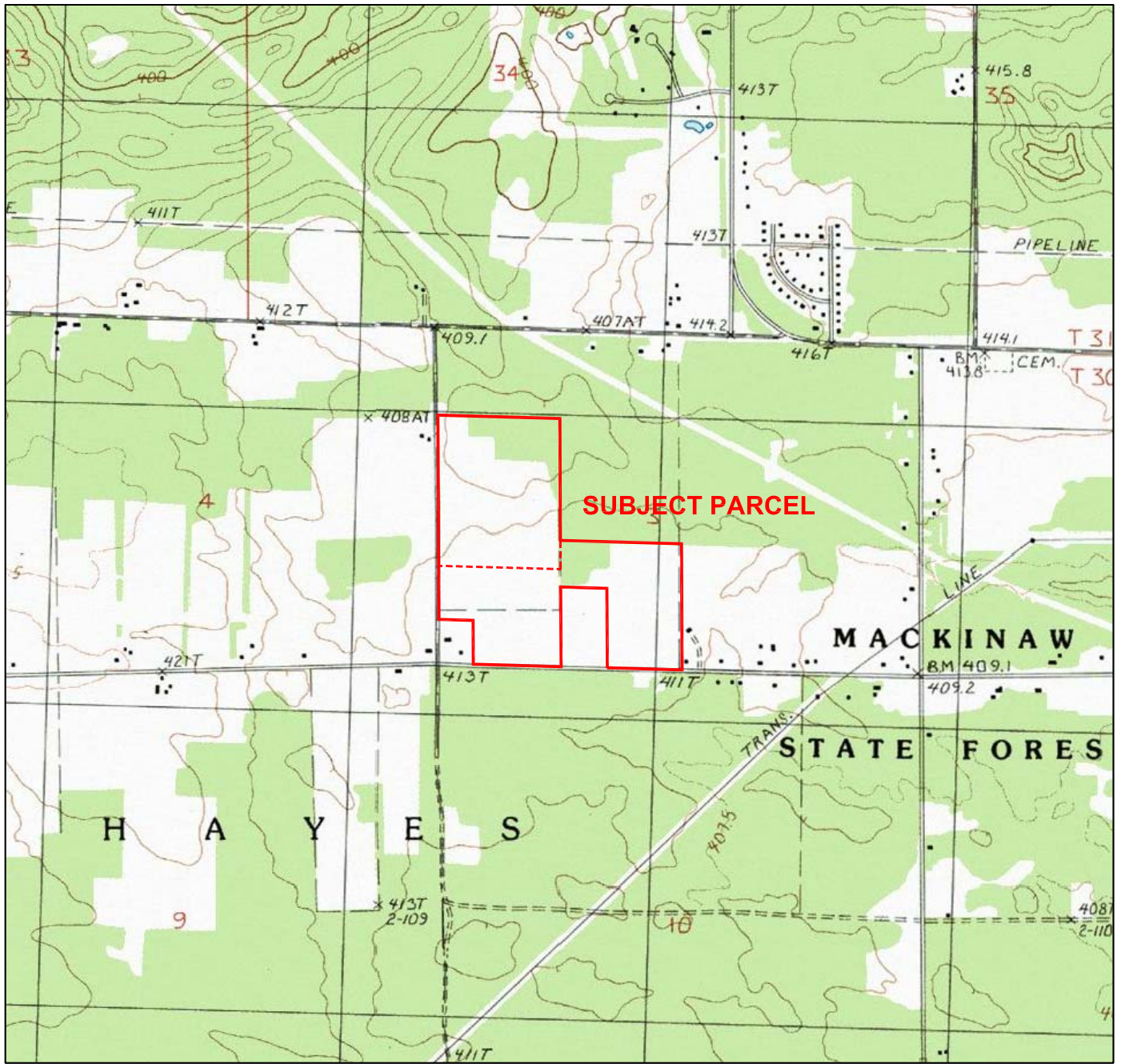
Michigan Department of Environmental Quality. 2015. Well Summary Report, Ebeling (Wildwest) C1-3. June 8.

Michigan Department of Environmental Quality. 2015. FOIA Response Documents for the Injection Well Activities – Wildwest D2-3. June 10.

Pettit, Joe. MDEQ, Office of Oil, Gas, and Minerals, Lansing Office. 2015. Personal communication. May 26.

Smigelski, Janet. DEQ, Office of Oil Gas and Minerals, Gaylord District Office. 2015. Personal interview. June 11.

Figures



SITE LOCATION MAP

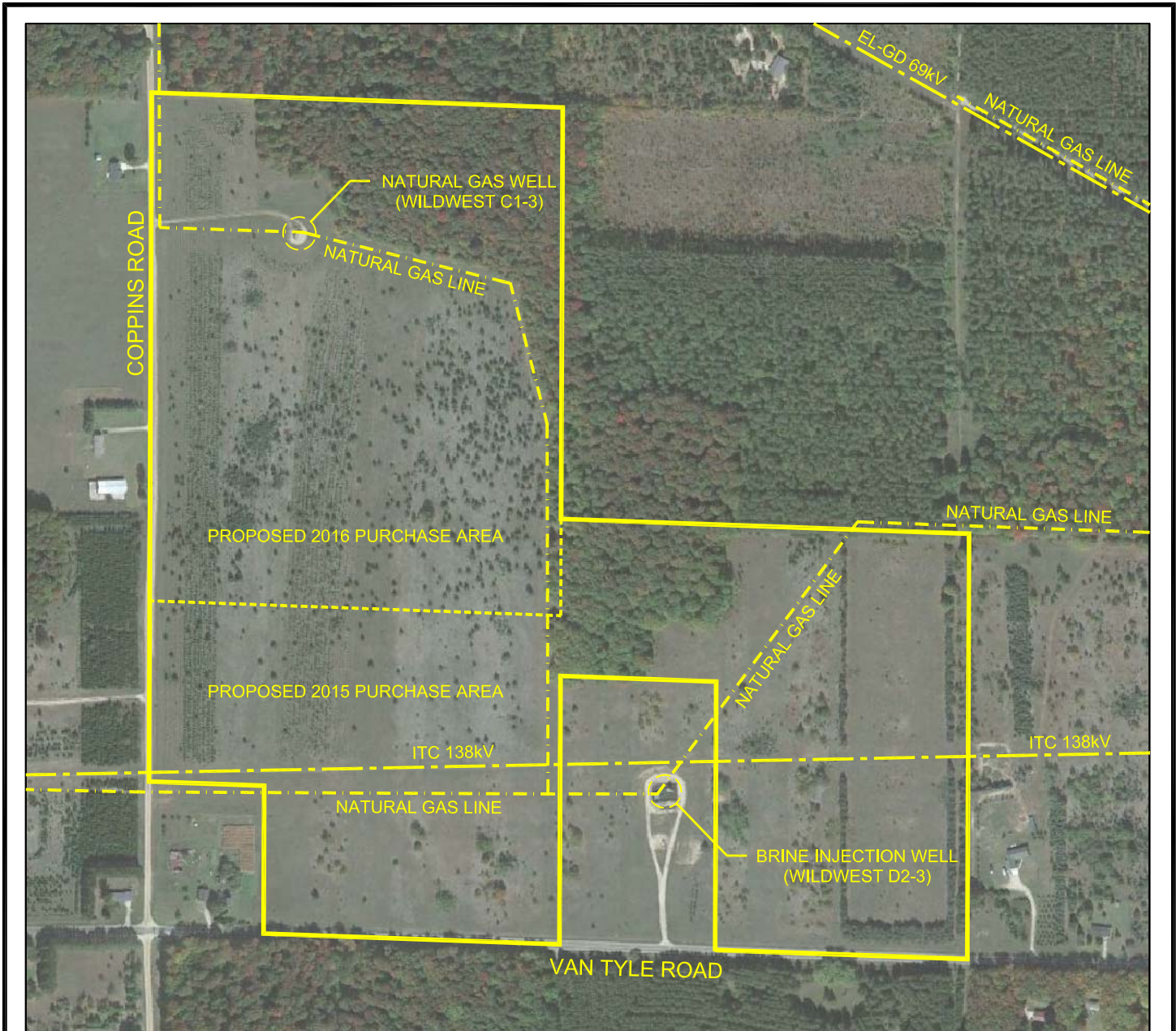
TITLE: EBELING PROPERTY	U.S.G.S. 7.5 MINUTE SERIES TOPOGRAPHIC MAP
ADDRESS: COPPINS ROAD GAYLORD, MI 49735	ELMIRA, MI QUADRANGLE - 1986 PROVISIONAL EDITION
CITY: NA	SECTION 3
TOWNSHIP: HAYES	TOWNSHIP 30 NORTH
COUNTY: OTSEGO	RANGE 4 WEST

PROJECT NO: 3461
PROJECT MGR: JER
DRAWING: 3461-1-1
DATE: 6-10-15



FIGURE #1

ENVIRONMENTAL ENGINEERING & REGULATORY CONSULTING
TRAVERSE CITY, MI 231-922-7400 BRIGHTON, MI 810-225-8674



LOCATIONS OF NATURAL GAS LINES AND ELECTRICAL TRANSMISSION LINES ARE APPROXIMATE

Note:

Adapted from aerial imagery dated 9/27/13.

	<p>LOCATION: EBELING PROPERTY COPPINS ROAD GAYLORD, MI 49735</p>	<p>SITE MAP</p>	
	<p>Figure #2</p>	<p>DRAWING DATE: 6-15-15</p> <p>PROJECT NUMBER: 3461</p> <p>PROJECT MANAGER: JER</p> <p>CAD FILE: 3461-2-1</p> <p>DRAWN BY: BAP</p>	<p>Compliance INC</p> <p>ENVIRONMENTAL ENGINEERING & REGULATORY CONSULTING TRAVERSE CITY, MI 231-922-7400 BRIGHTON, MI 810-225-8674</p>
<p>Approximate scale in feet</p>			

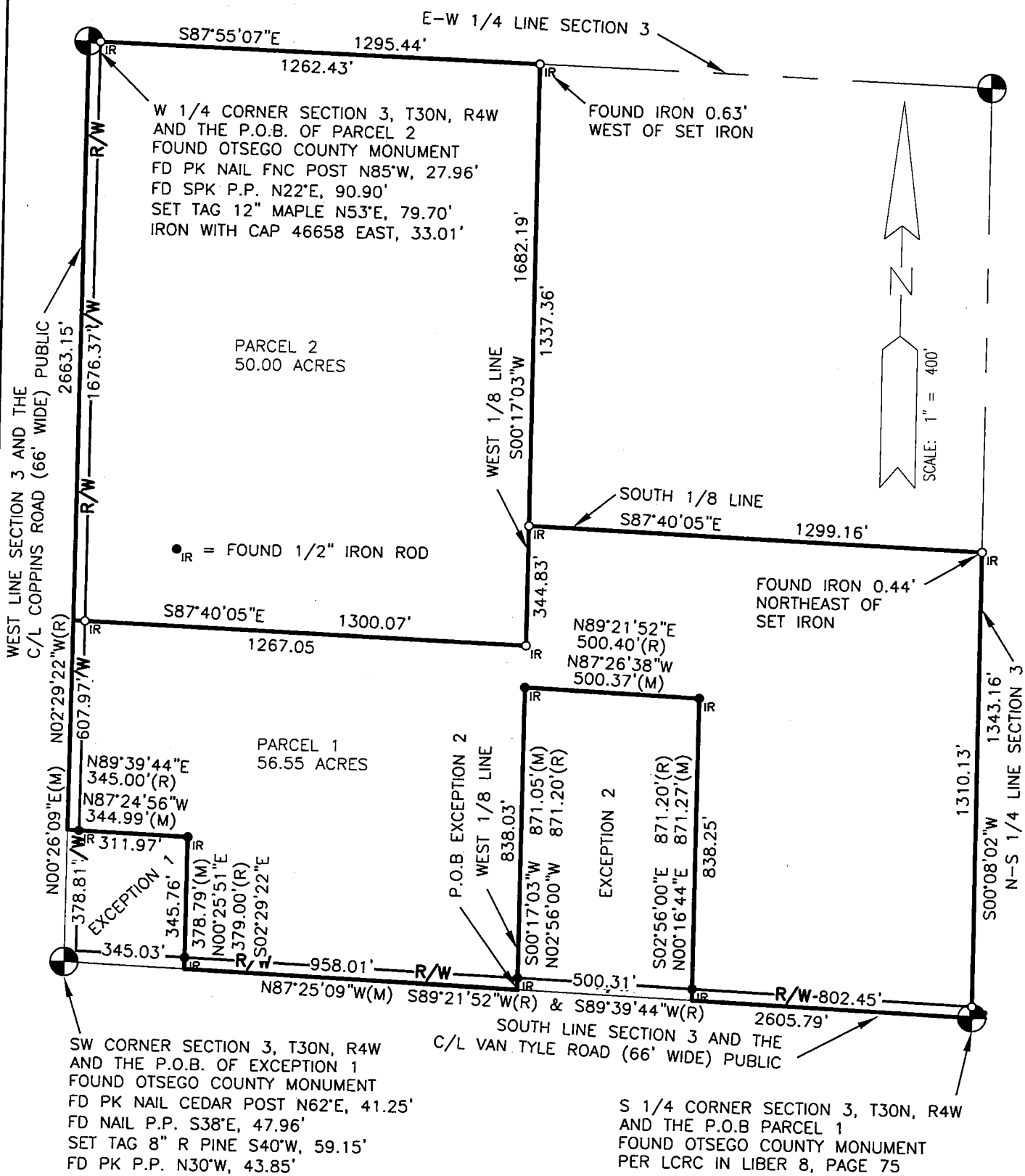
Appendix A

Site Survey

CERTIFICATE OF SURVEY

LEGEND:

1. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
2. "O_{IR}" = 1/2" BARS WITH IDENTIFICATION CAPS HAVE BEEN SET UNLESS NOTED OTHERWISE.
3. _____ = DESCRIBED BOUNDARY LINE.
4. ALL BEARINGS ARE RELATIVE AND REFERENCED TO MICHIGAN SPC, NAD 83, CENTRAL ZONE.



BOOK #:	PAGE #:	SEC. 3, T30N, R4W
DRAWN BY: JSC	COMPUTED BY: JSC	JOB #: WL2005-03G
CHECKED BY: ABC	SURVEYED BY: ABC	SHEET: 1 OF 2

FOR:

WOLVERINE POWER
SUPPLY COOPERATIVE

PARCEL NO.
071-003-300-025-01

WADETRIM

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JASON
CAVERSON
PROFESSIONAL
SURVEYOR
No.
46658

5-26-15

CERTIFICATE OF SURVEY

PARCEL 1— A parcel of land on part of the Southwest 1/4 of Section 3, T30N, R4W, Hayes Township, Otsego County, Michigan, being described as: BEGINNING at the South 1/4 corner of said Section 3; thence N87°25'09"W, 802.45' along the South line of said Section 3; thence N00°16'44"E, 871.27'; thence N87°26'38"W, 500.37'; thence S00°17'03"W, 871.05' along the West 1/8 line to said South Section line; thence N87°25'09"W, 958.01' along said South line; thence N00°25'51"E, 378.79'; thence N87°24'56"W, 344.99' to the West line of said Section 3; thence N00°26'09"E, 607.97' along said West line; thence S87°40'05"E, 1300.07'; thence N00°17'03"E, 344.83' along the West 1/8 line of said Section 3; thence S87°40'05"E, 1299.16' along the South 1/8 line of said Section 3; thence S00°08'02"W, 1343.16' along the N-S 1/4 line of said Section 3 to the Point of Beginning, containing 56.55 acres. Subject to an easement for Van Tyle Road over and across the South 33' thereof. AND subject to an easement for Coppins Road over and across the West 33' thereof.

PARCEL 2— A parcel of land on part of the Southwest 1/4 of Section 3, T30N, R4W, Hayes Township, Otsego County, Michigan, being described as: BEGINNING at the West 1/4 corner of said Section 3; thence S87°55'07"E, 1295.44' along the E-W 1/4 line of said Section 3; thence S00°17'03"W, 1682.19' along the West 1/8 line of said Section 3; thence N87°40'05"W, 1300.07'; thence N00°26'09"E, 1676.37' along the West line of said Section 3 to the Point of Beginning, containing 50.00 acres. Subject to an easement for Coppins Road over and across the West 33' thereof.

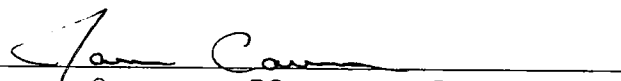
CERTIFICATE OF SURVEY:

I hereby certify to the parties named hereon that we have surveyed and divided into several parcels, at the direction of said parties, a tract of land (previously described as): The Southeast 1/4 of the Southwest 1/4 of Section 3, T30N, R4W, Hayes Township, Otsego County, Michigan, AND the West 1/2 of the Southwest 1/4 of Section 3, T30N, R4W, Hayes Township, Otsego County, Michigan, EXCEPTING THEREFROM: Commencing at the Southwest corner of said Section 3, thence N02°29'22"W, 379.00' along the West line of the Section; thence N89°39'44"E, 345.00'; thence S02°29'22"E, 379.00'; thence S89°39'44"W, 345.00' along the South line of said Section 3 to the Point of Beginning; AND FURTHER EXCEPTING THEREFROM: Commencing at the South 1/4 corner of said Section 3; thence S89°21'52"W, 1302.86' along the South line of Section 3 and the centerline of Van Tyle Road to the West 1/8 line of said Section and the Point of Beginning; thence N02°56'00"W, 871.20' along said 1/8 line; thence N89°21'52"E, 500.40', parallel with the South line of said Section 3; thence S02°56'00"E, 871.20', parallel with the West 1/8 line of Section 3; thence S89°21'52"W, 500.40' along the South line of Section 3 and the centerline of Van Tyle Road to the Point of Beginning.

and that we have found or set, as noted hereon, permanent markers to all corners and angle points of the boundaries of said parcels; and that the more particular legal descriptions of said parcels are as designated hereon.

This survey complies with the requirements of P.A. 132 of 1970.


This survey was performed with an unadjusted error of closure of no greater than a ratio of 1 in 5,000.


 Jason Caverson, PS 5-26-15
 Registration No. 46658

BOOK #:	PAGE #:	SEC. 3 , T30N , R4W
DRAWN BY: JSC	COMPUTED BY: JSC	JOB #: WL2005-03G
CHECKED BY: ABC	SURVEYED BY: ABC	SHEET: 2 OF 2

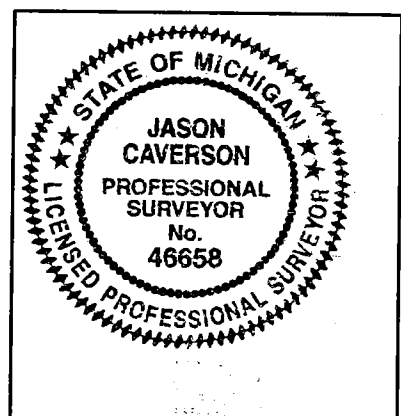
FOR:
 WOLVERINE POWER
 SUPPLY COOPERATIVE

 PARCEL NO.
 071-003-300-025-01



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Appendix B

User Provided Information

Phase I ESA User Questionnaire

**Ebeling Property
Hayes Township, Michigan**

- 1) Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

No, I am not aware of such conditions.

- 2) Are you aware of any activity and use limitations, such as engineering controls, land use restrictions or institutional restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

No, I am not aware of such conditions.

- 3) As the user of this Environmental Site Assessment do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property and an adjoining property so that you would have specialized knowledge of chemicals and processes used by this type of business?

No, I do not have any specialized knowledge or experience related to the subject property.

- 4) Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower price is because contamination is known or believed to be present at the property?

Yes, the purchase price does reasonably reflect the fair market value.

- 5) Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as a user,

a) Do you know the past uses of the property?

No, I do not know the past uses of the property.

Phase I ESA User Questionnaire Cont'd

Ebeling Property
Hayes Township, Michigan

b) Do you know of specific chemicals that are present or once were present at the property?

I am not aware of the specific chemicals, past or present, used at the subject property.

c) Do you know of spills or other chemical releases that have taken place at the property?

I am not aware of any chemical spills or releases..

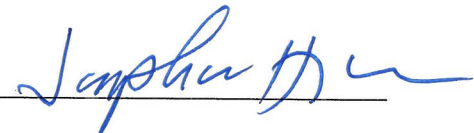
d) Do you know of any environmental cleanups that have taken place at the property?

I am not aware of any environmental cleanups on the subject property.

6) As the user of this Environmental Site Assessment, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

Based on my knowledge and experience related to the subject property, there are no obvious indicators of contamination.

Signature: _____



Name (printed) Joseph W. Hughes

Company: Wolverine Power Cooperative

Date: June 15, 2015

Appendix C

Environmental Data Resources, Inc. Report

Hayes Township Property

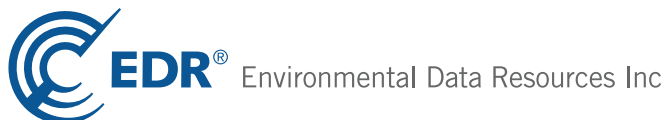
100-199 COPPINS RD

Gaylord, MI 49735

Inquiry Number: 4318863.2s

June 09, 2015

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	9
Government Records Searched/Data Currency Tracking	GR-1
 <u>GEOCHECK ADDENDUM</u>	
Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-10
Physical Setting Source Map Findings	A-12
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
 Please contact EDR at 1-800-352-0050
 with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

100-199 COPPINS RD
GAYLORD, MI 49735

COORDINATES

Latitude (North): 45.0223000 - 45° 1' 20.28"
Longitude (West): 84.7807000 - 84° 46' 50.52"
Universal Transverse Mercator: Zone 16
UTM X (Meters): 674852.1
UTM Y (Meters): 4987606.5
Elevation: 1352 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 45084-A7 ELMIRA, MI
Most Recent Revision: 1986

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20120629
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:
100-199 COPPINS RD
GAYLORD, MI 49735

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
--------	-----------	---------	-------------------	--------------------	----------------------------

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

EXECUTIVE SUMMARY

LUCIS..... Land Use Control Information System

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Facilities Database

State and tribal leaking storage tank lists

LUST..... Leaking Underground Storage Tank Sites
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST..... Underground Storage Tank Facility List
AST..... Aboveground Tanks
INDIAN UST..... Underground Storage Tanks on Indian Land
FEMA UST..... Underground Storage Tank Listing

State and tribal institutional control / engineering control registries

AUL..... Engineering and Institutional Controls

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields and UST Site Database

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory
HIST LF..... Inactive Solid Waste Facilities
SWRCY..... Recycling Facilities
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs

EXECUTIVE SUMMARY

PART 201.....	Part 201 Site List
INVENTORY.....	Inventory of Facilities
DEL PART 201.....	Delisted List of Contaminated Sites
CDL.....	Clandestine Drug Lab Listing
US HIST CDL.....	National Clandestine Laboratory Register

Local Land Records

LIENS 2.....	CERCLA Lien Information
LIENS.....	Lien List

Records of Emergency Release Reports

HMIRS.....	Hazardous Materials Information Reporting System
SPILLS.....	Pollution Emergency Alerting System

Other Ascertainable Records

RCRA NonGen / NLR.....	RCRA - Non Generators / No Longer Regulated
DOT OPS.....	Incident and Accident Data
DOD.....	Department of Defense Sites
FUDS.....	Formerly Used Defense Sites
CONSENT.....	Superfund (CERCLA) Consent Decrees
ROD.....	Records Of Decision
UMTRA.....	Uranium Mill Tailings Sites
US MINES.....	Mines Master Index File
TRIS.....	Toxic Chemical Release Inventory System
TSCA.....	Toxic Substances Control Act
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS.....	Section 7 Tracking Systems
ICIS.....	Integrated Compliance Information System
PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
RADINFO.....	Radiation Information Database
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System
RMP.....	Risk Management Plans
UIC.....	Underground Injection Wells Database
DRYCLEANERS.....	Drycleaning Establishments
NPDES.....	List of Active NPDES Permits
AIRS.....	Permit and Emissions Inventory Data
BEA.....	Baseline Environmental Assessment Database
INDIAN RESERV.....	Indian Reservations
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
WDS.....	Waste Data System
COAL ASH.....	Coal Ash Disposal Sites
Financial Assurance.....	Financial Assurance Information Listing
LEAD SMELTERS.....	Lead Smelter Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
EPA WATCH LIST.....	EPA WATCH LIST
US FIN ASSUR.....	Financial Assurance Information
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER.....	PCB Transformer Registration Database

EXECUTIVE SUMMARY

COAL ASH DOE..... Steam-Electric Plant Operation Data
2020 COR ACTION..... 2020 Corrective Action Program List
PRP..... Potentially Responsible Parties

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat..... EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA PART 201..... Recovered Government Archive State Hazardous Waste Facilities List
RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

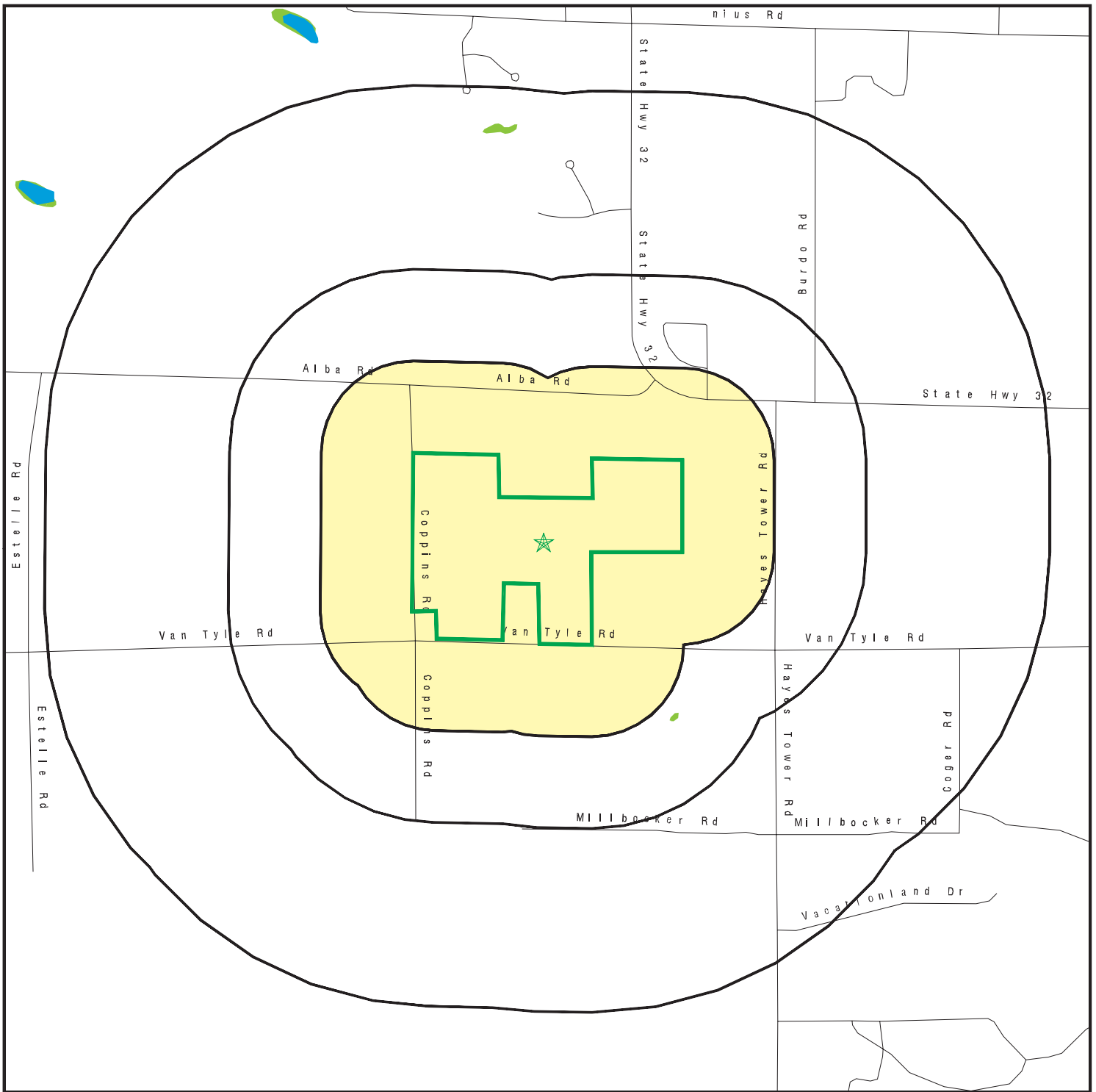
Surrounding sites were not identified.







Unmappable (orphan) sites are not considered in the foregoing analysis.





EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4318863.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  Oil & Gas pipelines from USGS
-  National Wetland Inventory
-  State Wetlands

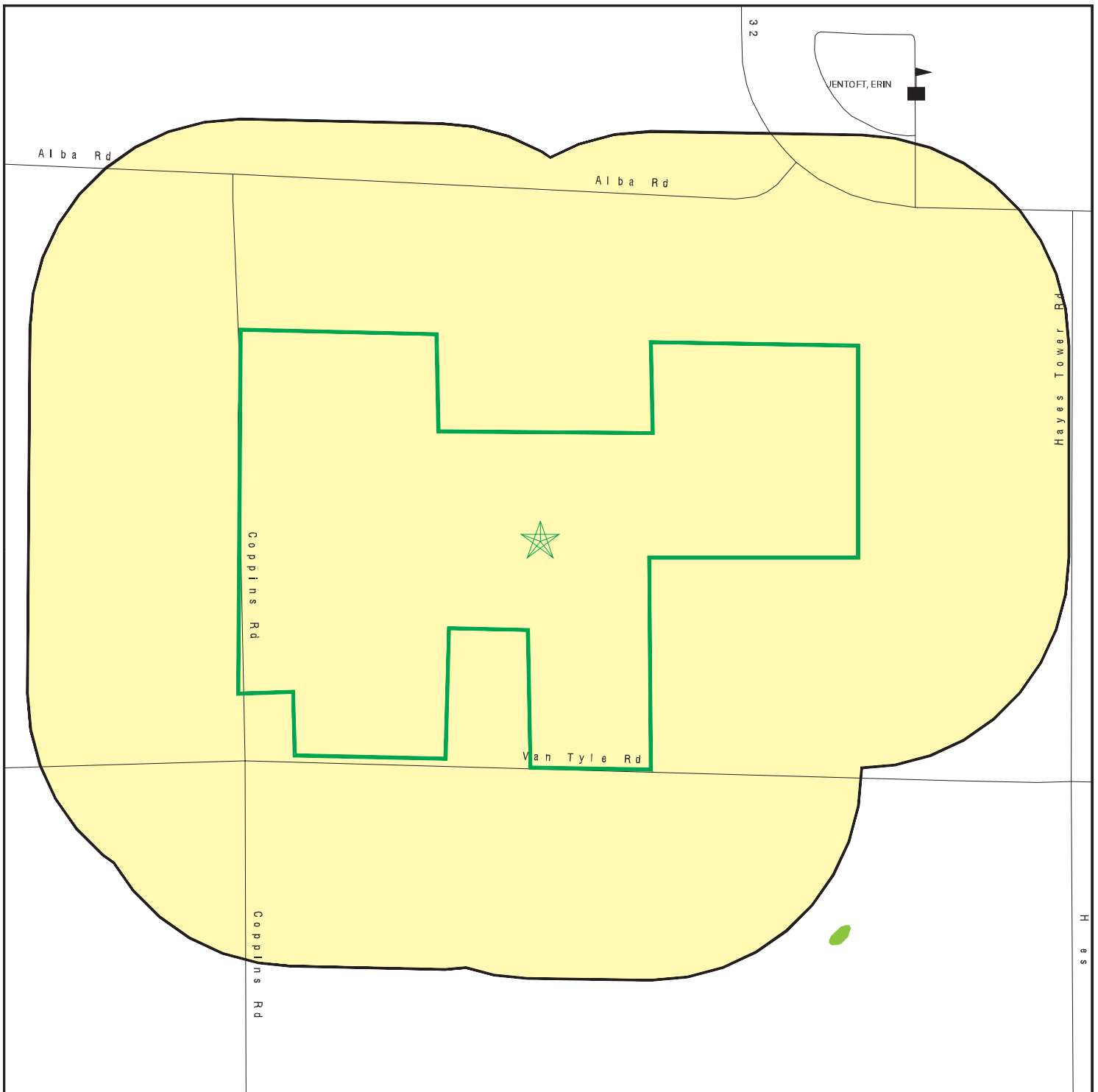









This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.





SITE NAME: Hayes Township Property
 ADDRESS: 100-199 COPPINS RD
 Gaylord MI 49735
 LAT/LONG: 45.0223 / 84.7807

CLIENT: Compliance, Inc.
 CONTACT: Jim Rossi
 INQUIRY #: 4318863.2s
 DATE: June 09, 2015 9:41 am

DETAIL MAP - 4318863.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  Oil & Gas pipelines from USGS
-  National Wetland Inventory
-  State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

<p>SITE NAME: Hayes Township Property ADDRESS: 100-199 COPPINS RD Gaylord MI 49735 LAT/LONG: 45.0223 / 84.7807</p>	<p>CLIENT: Compliance, Inc. CONTACT: Jim Rossi INQUIRY #: 4318863.2s DATE: June 09, 2015 9:42 am</p>
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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Federal NPL site list</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Federal CERCLIS list</i>								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
<i>Federal CERCLIS NFRAP site List</i>								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Federal RCRA generators list</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>State- and tribal - equivalent CERCLIS</i>								
SHWS	1.000		0	0	0	0	NR	0
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF	0.500		0	0	0	NR	NR	0
<i>State and tribal leaking storage tank lists</i>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
<i>State and tribal registered storage tank lists</i>								
UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
AUL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
HIST LF	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
PART 201	1.000		0	0	0	0	NR	0
INVENTORY	0.500		0	0	0	NR	NR	0
DEL PART 201	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
BEA	0.500		0	0	0	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA PART 201	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

- Totals --			0	0	0	0	0	0
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MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
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NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

NO SITES FOUND

Count: 0 records.

ORPHAN SUMMARY

<u>City</u>	<u>EDR ID</u>	<u>Site Name</u>	<u>Site Address</u>	<u>Zip</u>	<u>Database(s)</u>
NO SITES FOUND					

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 04/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 04/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 04/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 05/29/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/21/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/07/2014	Telephone: 703-603-8704
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 04/08/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 05/29/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/16/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/17/2015	Telephone: 703-603-0695
Date Made Active in Reports: 06/02/2015	Last EDR Contact: 06/01/2015
Number of Days to Update: 77	Next Scheduled EDR Contact: 09/14/2015
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/16/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/17/2015	Telephone: 703-603-0695
Date Made Active in Reports: 06/02/2015	Last EDR Contact: 06/01/2015
Number of Days to Update: 77	Next Scheduled EDR Contact: 09/14/2015
	Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/03/2014	Source: Department of the Navy
Date Data Arrived at EDR: 12/12/2014	Telephone: 843-820-7326
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 05/18/2015
Number of Days to Update: 48	Next Scheduled EDR Contact: 08/31/2015
	Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/30/2015	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 03/31/2015	Telephone: 202-267-2180
Date Made Active in Reports: 06/02/2015	Last EDR Contact: 03/31/2015
Number of Days to Update: 63	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

Date of Government Version: N/A	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 10/31/2013	Telephone: 517-284-5103
Date Made Active in Reports: 11/20/2013	Last EDR Contact: 04/23/2015
Number of Days to Update: 20	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: No Update Planned

State and tribal landfill and/or solid waste disposal site lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWF/LF: Solid Waste Facilities Database

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/30/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 03/31/2015	Telephone: 517-335-4035
Date Made Active in Reports: 04/14/2015	Last EDR Contact: 03/31/2015
Number of Days to Update: 14	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Semi-Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 02/16/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 03/06/2015	Telephone: 517-373-9837
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 05/22/2015
Number of Days to Update: 7	Next Scheduled EDR Contact: 08/31/2015
	Data Release Frequency: Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/08/2015	Telephone: 415-972-3372
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 65	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/23/2015	Source: EPA Region 6
Date Data Arrived at EDR: 02/10/2015	Telephone: 214-665-6597
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 01/30/2015	Source: EPA, Region 5
Date Data Arrived at EDR: 02/05/2015	Telephone: 312-886-7439
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/03/2015	Source: EPA Region 10
Date Data Arrived at EDR: 02/12/2015	Telephone: 206-553-2857
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 29	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 01/28/2015	Source: EPA Region 8
Date Data Arrived at EDR: 01/30/2015	Telephone: 303-312-6271
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 42	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013	Source: EPA Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 04/03/2015
Number of Days to Update: 184	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/30/2014	Source: EPA Region 4
Date Data Arrived at EDR: 03/03/2015	Telephone: 404-562-8677
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Semi-Annually

State and tribal registered storage tank lists

UST 2: Underground Storage Tank Listing
A listing of underground storage tank site locations that have unknown owner information.

Date of Government Version: 05/04/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 05/06/2015	Telephone: 517-335-7211
Date Made Active in Reports: 05/14/2015	Last EDR Contact: 04/16/2015
Number of Days to Update: 8	Next Scheduled EDR Contact: 08/03/2015
	Data Release Frequency: Annually

UST: Underground Storage Tank Facility List
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 03/01/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 03/12/2015	Telephone: 517-335-4035
Date Made Active in Reports: 03/19/2015	Last EDR Contact: 05/22/2015
Number of Days to Update: 7	Next Scheduled EDR Contact: 08/31/2015
	Data Release Frequency: Annually

AST: Aboveground Tanks
Registered Aboveground Storage Tanks.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/02/2015
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: Dept of Environmental Quality
Telephone: 517-373-8168
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: No Update Planned

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/28/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 36

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/29/2015
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

AUL: Engineering and Institutional Controls

A listing of sites with institutional and/or engineering controls in place.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/19/2015
Number of Days to Update: 9

Source: Dept of Environmental Quality
Telephone: 517-373-4828
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields and USTfield Site Database

All state funded Part 201 and 213 sites, as well as LUST sites that have been redeveloped by private entities using the BEA process. Be aware that this is not a list of all of the potential brownfield sites in Michigan.

Date of Government Version: 07/27/2012
Date Data Arrived at EDR: 07/31/2012
Date Made Active in Reports: 09/20/2012
Number of Days to Update: 51

Source: Dept of Environmental Quality
Telephone: 517-373-4805
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

BROWNFIELDS 2: Brownfields Building and Land Site Locations

A listing of brownfield building and land site locations. The listing is a collaborative effort of Michigan Economic Development Corporation, Michigan Economic Developers Association, Detroit Edison, Detroit Area Commercial Board of Realtors

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 05/01/2007
Number of Days to Update: 21

Source: Economic Development Corporation
Telephone: 888-522-0103
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/23/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/24/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/23/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycling Facilities

A listing of recycling center locations.

Date of Government Version: 04/11/2015
Date Data Arrived at EDR: 04/14/2015
Date Made Active in Reports: 04/21/2015
Number of Days to Update: 7

Source: Dept of Environmental Quality
Telephone: 517-241-5719
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

HIST LF: Inactive Solid Waste Facilities

The database contains historical information and is no longer updated.

Date of Government Version: 03/01/1997
Date Data Arrived at EDR: 02/28/2003
Date Made Active in Reports: 03/06/2003
Number of Days to Update: 6

Source: Dept of Environmental Quality
Telephone: 517-335-4034
Last EDR Contact: 02/28/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Quarterly

INVENTORY: Inventory of Facilities

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

The Inventory of Facilities has three data sources: Facilities under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) identified through state funded or private party response activities (Projects); Facilities under Part 213, Leaking Underground Storage Tanks of the NREPA; and Facilities identified through submittals of Baseline Environmental Assessments (BEA) submitted pursuant to Part 201 or Part 213 of the NREPA. The Part 201 Projects Inventory does not include all of the facilities that are subject to regulation under Part 201 because owners are not required to inform the Department of Environmental Quality (DEQ) about the facilities and can pursue cleanup independently. Facilities that are not known to DEQ are not on the Inventory, nor are locations with releases that resulted in low environmental impact. Part 213 facilities listed here may have more than one release; a list of releases for which corrective actions have been completed and list of releases for which corrective action has not been completed is located on the Leaking Underground Storage Tanks Site Search webpage. The DEQ may or may not have reviewed and concurred with the conclusion that the corrective actions described in a closure report meets criteria. A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

Date of Government Version: 04/01/2015	Source: Department of Environmental Quality
Date Data Arrived at EDR: 04/29/2015	Telephone: 517-284-5136
Date Made Active in Reports: 05/14/2015	Last EDR Contact: 04/29/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Quarterly

PART 201: Part 201 Site List

A Part 201 Listed site is a location that has been evaluated and scored by the DEQ using the Part 201 scoring model. The location is or includes a "facility" as defined by Part 201, where there has been a release of a hazardous substance(s) in excess of the Part 201 residential criteria, and/or where corrective actions have not been completed under Part 201 to meet the applicable cleanup criteria for unrestricted residential use. The Part 201 List does not include all of the sites of contamination that are subject to regulation under Part 201 because owners are not required to inform the DEQ about the sites and can pursue cleanup independently. Sites of environmental contamination that are not known to DEQ are not on the list, nor are sites with releases that resulted in low environmental impact.

Date of Government Version: 10/01/2013	Source: Department of Environmental Quality
Date Data Arrived at EDR: 10/03/2014	Telephone: 517-284-5103
Date Made Active in Reports: 10/03/2014	Last EDR Contact: 04/23/2015
Number of Days to Update: 0	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: No Update Planned

DEL PART 201: Delisted List of Contaminated Sites

A deleted site has been removed from the Part 201 List because information known to the DEQ at the time of the evaluation does not support inclusion on the Part 201 List. This designation is often applied to sites where changes in cleanup criteria resulted in a determination that the site no longer exceeds any applicable cleanup criterion. A delisted site has been removed from the Part 201 List because response actions have reduced the levels of contaminants to concentrations which meet or are below the criteria for unrestricted residential use.

Date of Government Version: 08/01/2013	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 08/01/2013	Telephone: 517-373-9541
Date Made Active in Reports: 09/11/2013	Last EDR Contact: 04/23/2015
Number of Days to Update: 41	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab locations.

Date of Government Version: 10/20/2008	Source: Department of Community Health
Date Data Arrived at EDR: 11/18/2008	Telephone: 517-373-3740
Date Made Active in Reports: 11/21/2008	Last EDR Contact: 04/27/2015
Number of Days to Update: 3	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 03/10/2015	Telephone: 202-307-1000
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 05/29/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 09/14/2015
	Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/18/2014	Telephone: 202-564-6023
Date Made Active in Reports: 04/24/2014	Last EDR Contact: 04/27/2015
Number of Days to Update: 37	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

LIENS: Lien List

An Environmental Lien is a charge, security, or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon a property, including (but not limited to) liens imposed pursuant to CERCLA 42 USC * 9607(1) and similar state or local laws. In other words: a lien placed upon a property's title due to an environmental condition

Date of Government Version: 03/15/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 04/21/2015	Telephone: 517-241-7603
Date Made Active in Reports: 05/14/2015	Last EDR Contact: 04/16/2015
Number of Days to Update: 23	Next Scheduled EDR Contact: 08/03/2015
	Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/29/2014	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 12/30/2014	Telephone: 202-366-4555
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 03/31/2015
Number of Days to Update: 69	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Annually

PEAS: Pollution Emergency Alerting System

Environmental pollution emergencies reported to the Department of Environmental Quality such as tanker accidents, pipeline breaks, and release of reportable quantities of hazardous substances.

Date of Government Version: 03/13/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 03/17/2015	Telephone: 517-373-8427
Date Made Active in Reports: 04/01/2015	Last EDR Contact: 06/05/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 09/21/2015
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/29/2014	Telephone: 312-886-6186
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 03/31/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 08/07/2012	Telephone: 202-366-4595
Date Made Active in Reports: 09/18/2012	Last EDR Contact: 05/05/2015
Number of Days to Update: 42	Next Scheduled EDR Contact: 08/17/2015
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/14/2015
Number of Days to Update: 62	Next Scheduled EDR Contact: 07/27/2015
	Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 09/10/2014	Telephone: 202-528-4285
Date Made Active in Reports: 09/18/2014	Last EDR Contact: 03/13/2015
Number of Days to Update: 8	Next Scheduled EDR Contact: 06/22/2015
	Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 04/17/2015	Telephone: Varies
Date Made Active in Reports: 06/02/2015	Last EDR Contact: 03/30/2015
Number of Days to Update: 46	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013	Source: EPA
Date Data Arrived at EDR: 12/12/2013	Telephone: 703-416-0223
Date Made Active in Reports: 02/24/2014	Last EDR Contact: 03/10/2015
Number of Days to Update: 74	Next Scheduled EDR Contact: 06/22/2015
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010	Source: Department of Energy
Date Data Arrived at EDR: 10/07/2011	Telephone: 505-845-0011
Date Made Active in Reports: 03/01/2012	Last EDR Contact: 05/26/2015
Number of Days to Update: 146	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 12/30/2014	Source: Department of Labor, Mine Safety and Health Administration
Date Data Arrived at EDR: 12/31/2014	Telephone: 303-231-5959
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 06/03/2015
Number of Days to Update: 29	Next Scheduled EDR Contact: 09/14/2015
	Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2013	Source: EPA
Date Data Arrived at EDR: 02/12/2015	Telephone: 202-566-0250
Date Made Active in Reports: 06/02/2015	Last EDR Contact: 01/29/2015
Number of Days to Update: 110	Next Scheduled EDR Contact: 06/08/2015
	Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012	Source: EPA
Date Data Arrived at EDR: 01/15/2015	Telephone: 202-260-5521
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 03/27/2015
Number of Days to Update: 14	Next Scheduled EDR Contact: 07/06/2015
	Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 05/20/2015
Number of Days to Update: 25	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 05/20/2015
Number of Days to Update: 25	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009	Source: EPA
Date Data Arrived at EDR: 12/10/2010	Telephone: 202-564-4203
Date Made Active in Reports: 02/25/2011	Last EDR Contact: 04/10/2015
Number of Days to Update: 77	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/06/2015	Telephone: 202-564-5088
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 04/09/2015
Number of Days to Update: 31	Next Scheduled EDR Contact: 07/27/2015
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014	Source: EPA
Date Data Arrived at EDR: 10/15/2014	Telephone: 202-566-0500
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 04/17/2015
Number of Days to Update: 33	Next Scheduled EDR Contact: 07/27/2015
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 12/29/2014	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 01/08/2015	Telephone: 301-415-7169
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 06/04/2015
Number of Days to Update: 21	Next Scheduled EDR Contact: 09/21/2015
	Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 02/27/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/27/2015	Telephone: 202-343-9775
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 04/09/2015
Number of Days to Update: 26	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2015	Source: EPA
Date Data Arrived at EDR: 02/27/2015	Telephone: (312) 353-2000
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 03/09/2015
Number of Days to Update: 26	Next Scheduled EDR Contact: 06/22/2015
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

RMP: Risk Management Plans

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/13/2015	Telephone: 202-564-8600
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 40	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011	Source: EPA/NTIS
Date Data Arrived at EDR: 02/26/2013	Telephone: 800-424-9346
Date Made Active in Reports: 04/19/2013	Last EDR Contact: 05/29/2015
Number of Days to Update: 52	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Biennially

UIC: Underground Injection Wells Database

A listing of underground injection well locations. The UIC Program is responsible for regulating the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal.

Date of Government Version: 04/28/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 04/29/2015	Telephone: 517-241-1515
Date Made Active in Reports: 05/14/2015	Last EDR Contact: 04/27/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

DRYCLEANERS: Drycleaning Establishments

A listing of drycleaning facilities in Michigan.

Date of Government Version: 01/21/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 01/22/2015	Telephone: 517-335-4586
Date Made Active in Reports: 02/20/2015	Last EDR Contact: 04/16/2015
Number of Days to Update: 29	Next Scheduled EDR Contact: 08/03/2015
	Data Release Frequency: Annually

NPDES: List of Active NPDES Permits

General information regarding NPDES (National Pollutant Discharge Elimination System) permits and NPDES Storm Water permits.

Date of Government Version: 04/07/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 04/09/2015	Telephone: 517-241-1300
Date Made Active in Reports: 04/21/2015	Last EDR Contact: 04/09/2015
Number of Days to Update: 12	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Varies

AIRS: Permit and Emissions Inventory Data

Permit and emissions inventory data.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/24/2015
Date Data Arrived at EDR: 03/25/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 6

Source: Dept of Environmental Quality
Telephone: 517-373-7074
Last EDR Contact: 03/17/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Varies

BEA: Baseline Environmental Assessment Database

A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

Date of Government Version: 08/21/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 09/12/2013
Number of Days to Update: 20

Source: Dept of Environmental Quality
Telephone: 517-373-9541
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: No Update Planned

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/26/2014	Telephone: 703-603-8787
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 04/10/2015
Number of Days to Update: 64	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

WDS: Waste Data System

The Waste Data System (WDS) tracks activities at facilities regulated by the Solid Waste, Scrap Tire, Hazardous Waste, and Liquid Industrial Waste programs.

Date of Government Version: 03/04/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 03/06/2015	Telephone: 517-284-6562
Date Made Active in Reports: 03/13/2015	Last EDR Contact: 05/21/2015
Number of Days to Update: 7	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 05/07/2015
Number of Days to Update: 88	Next Scheduled EDR Contact: 08/24/2015
	Data Release Frequency: Quarterly

COAL ASH: Coal Ash Disposal Sites

Coal fired power plants in Southeast Michigan that have coal ash handling on site.

Date of Government Version: 10/15/2014	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 10/16/2014	Telephone: 586-753-3754
Date Made Active in Reports: 11/26/2014	Last EDR Contact: 04/06/2015
Number of Days to Update: 41	Next Scheduled EDR Contact: 07/20/2015
	Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial assurance information.

Date of Government Version: 04/20/2015	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 04/23/2015	Telephone: 517-335-6610
Date Made Active in Reports: 05/14/2015	Last EDR Contact: 04/06/2015
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/06/2015
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 05/01/2015
Number of Days to Update: 83	Next Scheduled EDR Contact: 08/10/2015
	Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/09/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/10/2015	Telephone: 202-566-1917
Date Made Active in Reports: 03/25/2015	Last EDR Contact: 05/14/2015
Number of Days to Update: 15	Next Scheduled EDR Contact: 08/31/2015
	Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 04/15/2015
Number of Days to Update: 76	Next Scheduled EDR Contact: 07/27/2015
	Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 03/13/2015
Number of Days to Update: 40	Next Scheduled EDR Contact: 06/22/2015
	Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 01/05/2011	Source: Dept of Environmental Quality
Date Data Arrived at EDR: 01/07/2011	Telephone: 517-335-4034
Date Made Active in Reports: 02/14/2011	Last EDR Contact: 03/30/2015
Number of Days to Update: 38	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Varies

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014	Source: EPA
Date Data Arrived at EDR: 10/31/2014	Telephone: 202-564-2496
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 03/30/2015
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/13/2015
	Data Release Frequency: Annually

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: N/A

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA PART 201: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/29/2015
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/06/2015
Date Made Active in Reports: 05/20/2015
Number of Days to Update: 14

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/13/2014
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care Centers, Group & Family Homes

Source: Bureau of REgulatory Services

Telephone: 517-373-8300

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory

Source: Department of Natural Resources

Telephone: 517-241-2254

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

HAYES TOWNSHIP PROPERTY
100-199 COPPINS RD
GAYLORD, MI 49735

TARGET PROPERTY COORDINATES

Latitude (North):	45.0223 - 45° 1' 20.28"
Longitude (West):	84.7807 - 84° 46' 50.52"
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	674852.1
UTM Y (Meters):	4987606.5
Elevation:	1352 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	45084-A7 ELMIRA, MI
Most Recent Revision:	1986

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

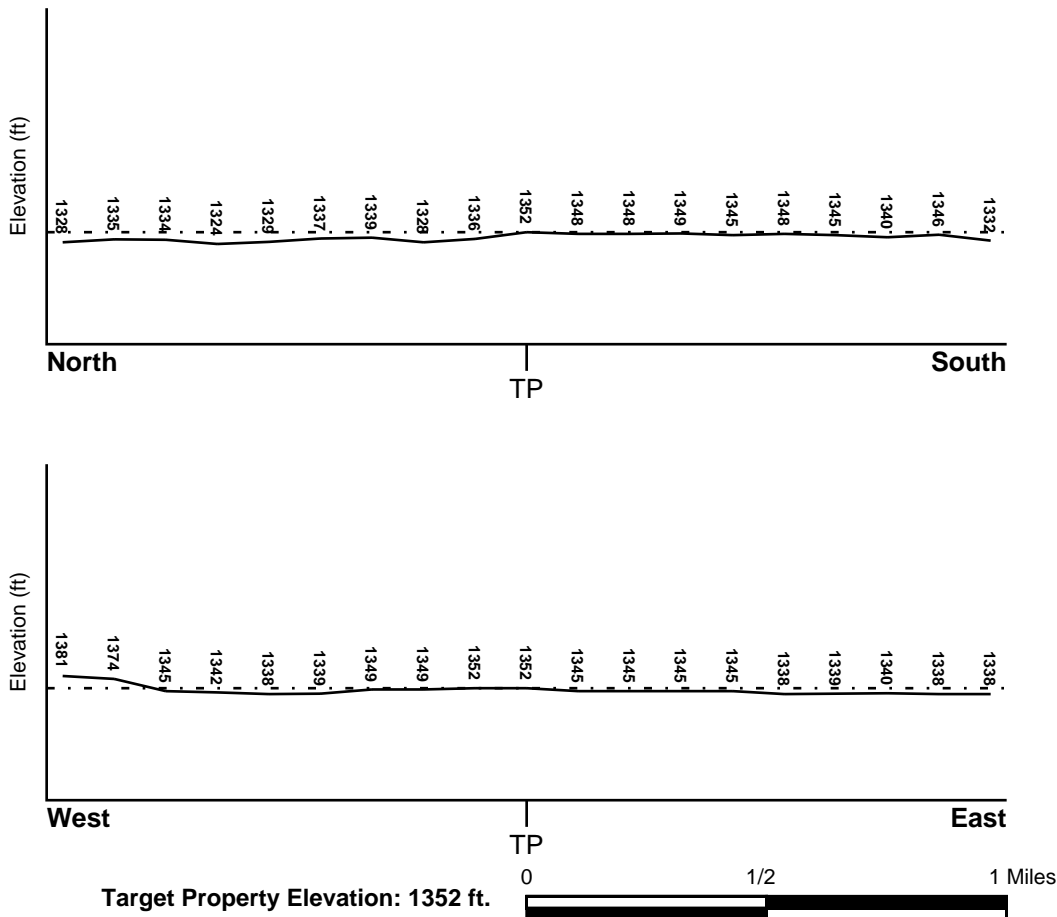
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General North

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u>	<u>FEMA Flood Electronic Data</u>
OTSEGO, MI	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
BOYNE FALLS SE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

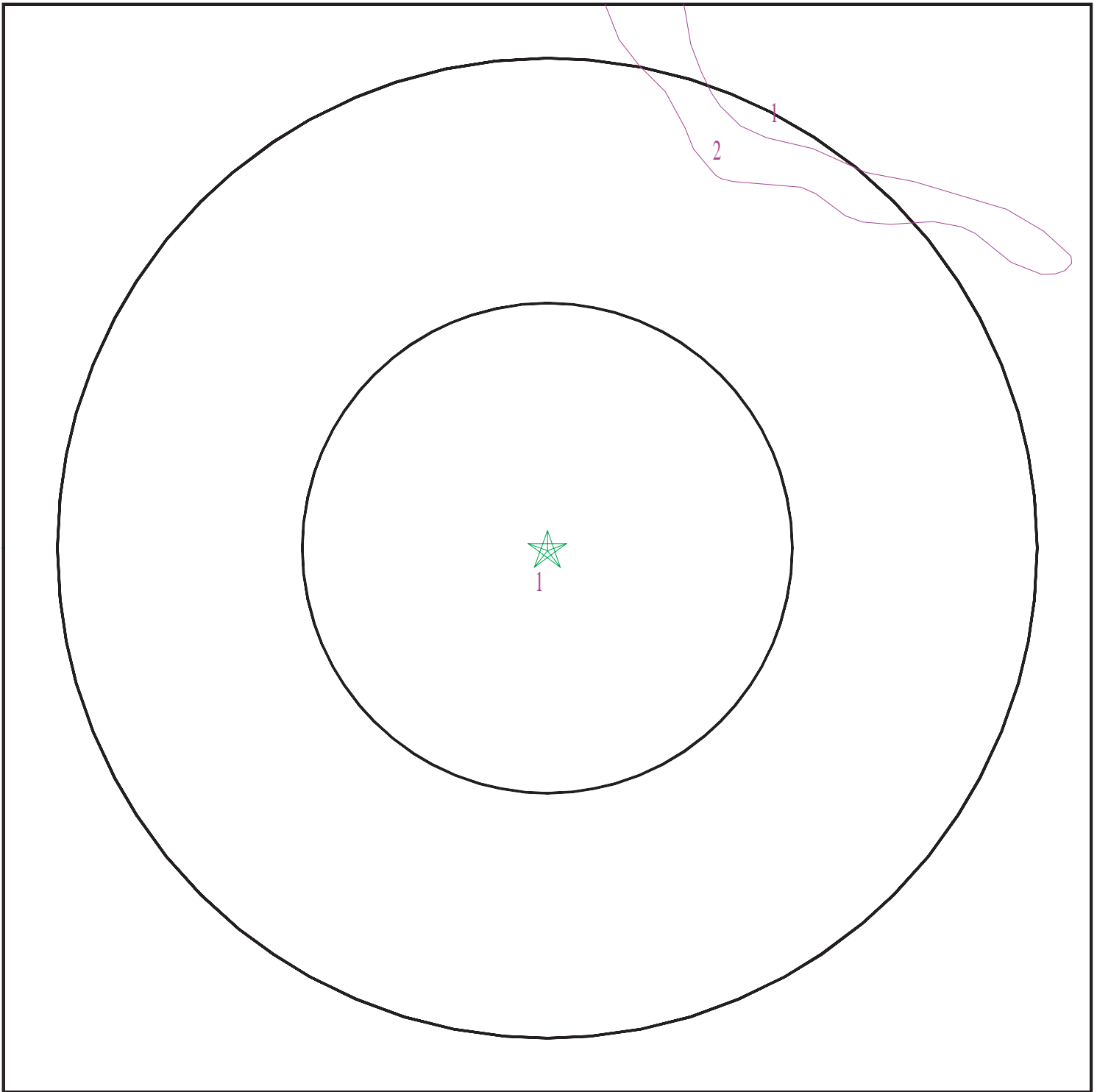
Era:	Paleozoic
System:	Devonian
Series:	Upper Devonian
Code:	D3 (<i>decoded above as Era, System & Series</i>)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4318863.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: Hayes Township Property
ADDRESS: 100-199 COPPINS RD
Gaylord MI 49735
LAT/LONG: 45.0223 / 84.7807

CLIENT: Compliance, Inc.
CONTACT: Jim Rossi
INQUIRY #: 4318863.2s
DATE: June 09, 2015 9:42 am

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Islandlake

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 4.5
2	1 inches	7 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 4.5
3	7 inches	11 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 4.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
4	11 inches	27 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 4.5
5	27 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.1
6	59 inches	79 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1

Soil Map ID: 2

Soil Component Name: Kalkaska

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.6
2	9 inches	27 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 3.6
3	27 inches	40 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6 Min: 4.5
4	40 inches	79 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6.5 Min: 4.5

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	MI3000000286296	1/4 - 1/2 Mile SW
2	MI3000000286290	1/4 - 1/2 Mile SE
A3	MI3000000286598	1/2 - 1 Mile NE
B4	MI3000000286580	1/2 - 1 Mile NE
5	MI3000000286374	1/2 - 1 Mile East
A6	MI3000000286611	1/2 - 1 Mile NE
B7	MI3000000286587	1/2 - 1 Mile NE
8	MI3000000286466	1/2 - 1 Mile East
B9	MI3000000286596	1/2 - 1 Mile NE
10	MI3000000286637	1/2 - 1 Mile NNE
11	MI3000000286659	1/2 - 1 Mile NNE
12	MI3000000286620	1/2 - 1 Mile NE
13	MI3000000286612	1/2 - 1 Mile NE

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

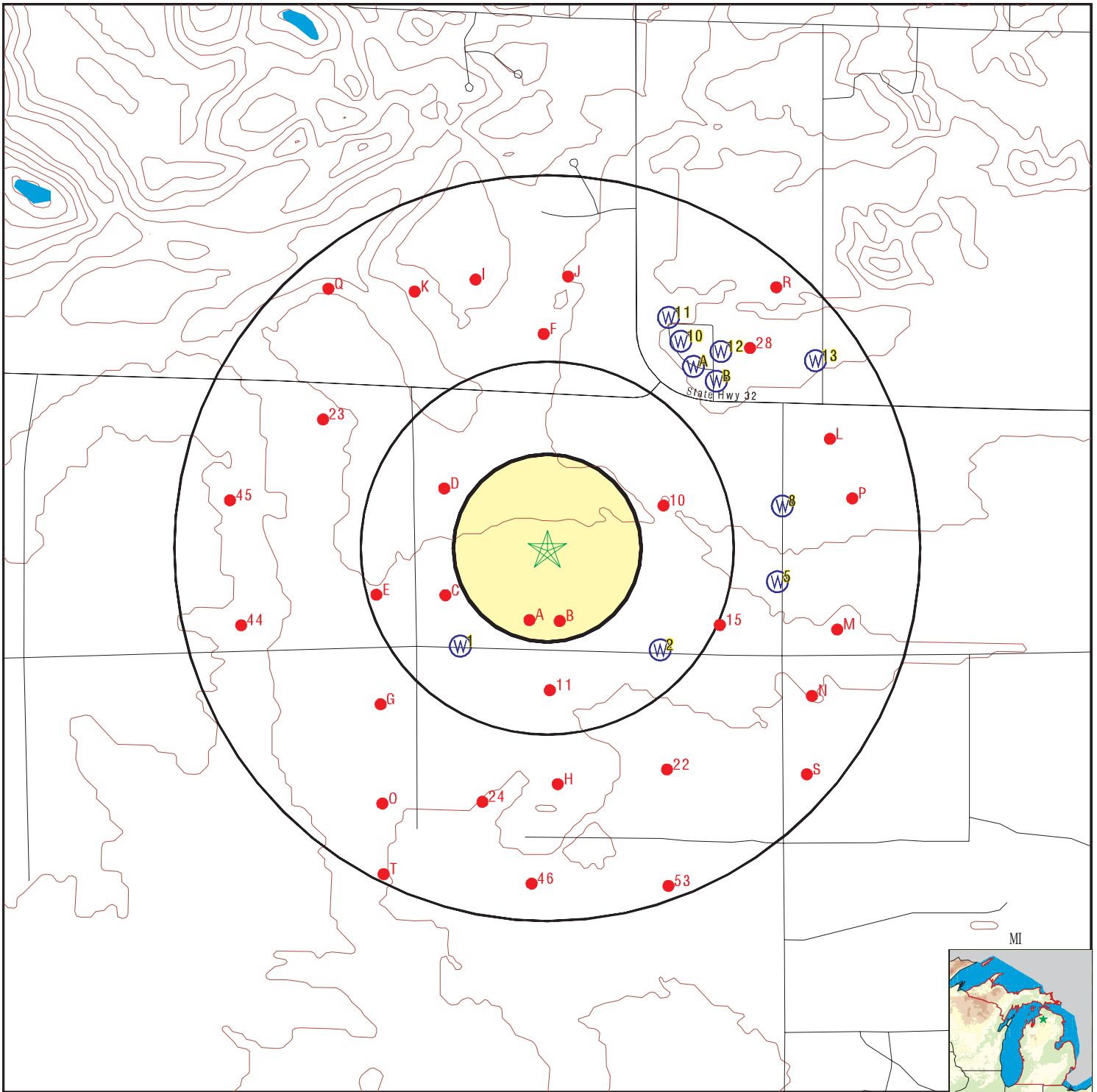
MAP ID	WELL ID	LOCATION FROM TP
A1	MIOG80000057672	1/8 - 1/4 Mile SSW
B2	MIOG80000057664	1/8 - 1/4 Mile South
B3	MIOG80000057665	1/8 - 1/4 Mile South
A4	MIOG80000057650	1/8 - 1/4 Mile SSW
C6	MIOG80000057713	1/4 - 1/2 Mile WSW
C5	MIOG80000057712	1/4 - 1/2 Mile WSW
D8	MIOG80000057957	1/4 - 1/2 Mile WNW
D7	MIOG80000057956	1/4 - 1/2 Mile WNW
D9	MIOG80000057964	1/4 - 1/2 Mile WNW
10	MIOG80000057904	1/4 - 1/2 Mile ENE
11	MIOG80000057465	1/4 - 1/2 Mile South
E12	MIOG80000057719	1/4 - 1/2 Mile WSW
E14	MIOG80000057708	1/4 - 1/2 Mile WSW
E13	MIOG80000057707	1/4 - 1/2 Mile WSW
15	MIOG80000057645	1/2 - 1 Mile ESE
F16	MIOG80000058307	1/2 - 1 Mile North
F17	MIOG80000058308	1/2 - 1 Mile North
G18	MIOG80000057435	1/2 - 1 Mile SW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
G19	MIOG80000057427	1/2 - 1 Mile SW
H21	MIOG80000057214	1/2 - 1 Mile South
H20	MIOG80000057213	1/2 - 1 Mile South
22	MIOG80000057260	1/2 - 1 Mile SSE
23	MIOG80000058120	1/2 - 1 Mile WNW
24	MIOG80000057177	1/2 - 1 Mile SSW
I25	MIOG80000058397	1/2 - 1 Mile NNW
J27	MIOG80000058438	1/2 - 1 Mile North
J26	MIOG80000058437	1/2 - 1 Mile North
28	MIOG80000058285	1/2 - 1 Mile NE
I29	MIOG80000058453	1/2 - 1 Mile NNW
K30	MIOG80000058379	1/2 - 1 Mile NNW
K31	MIOG80000058386	1/2 - 1 Mile NNW
L32	MIOG80000058089	1/2 - 1 Mile ENE
M33	MIOG80000057627	1/2 - 1 Mile ESE
M34	MIOG80000057632	1/2 - 1 Mile ESE
M35	MIOG80000057633	1/2 - 1 Mile ESE
N36	MIOG80000057450	1/2 - 1 Mile ESE
N37	MIOG80000057451	1/2 - 1 Mile ESE
O39	MIOG80000057174	1/2 - 1 Mile SSW
O38	MIOG80000057173	1/2 - 1 Mile SSW
L41	MIOG80000058083	1/2 - 1 Mile ENE
L40	MIOG80000058082	1/2 - 1 Mile ENE
P42	MIOG80000057930	1/2 - 1 Mile East
P43	MIOG80000057931	1/2 - 1 Mile East
44	MIOG80000057642	1/2 - 1 Mile WSW
45	MIOG80000057926	1/2 - 1 Mile West
46	MIOG80000056953	1/2 - 1 Mile South
Q47	MIOG80000058398	1/2 - 1 Mile NW
Q48	MIOG80000058390	1/2 - 1 Mile NW
R49	MIOG80000058372	1/2 - 1 Mile NE
S50	MIOG80000057242	1/2 - 1 Mile SE
S51	MIOG80000057243	1/2 - 1 Mile SE
R52	MIOG80000058433	1/2 - 1 Mile NE
53	MIOG80000056948	1/2 - 1 Mile SSE
T56	MIOG80000056984	1/2 - 1 Mile SSW
T54	MIOG80000056982	1/2 - 1 Mile SSW
T55	MIOG80000056983	1/2 - 1 Mile SSW

PHYSICAL SETTING SOURCE MAP - 4318863.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons



- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells



SITE NAME: Hayes Township Property
 ADDRESS: 100-199 COPPINS RD
 Gaylord MI 49735
 LAT/LONG: 45.0223 / 84.7807

CLIENT: Compliance, Inc.
 CONTACT: Jim Rossi
 INQUIRY #: 4318863.2s
 DATE: June 09, 2015 9:42 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

1
SW
1/4 - 1/2 Mile
Higher

MI WELLS MI3000000286296

Wellid:	69000000839	Import id:	Not Reported
County:	Otsego	Township:	Hayes
Town range:	30N 04W	Section:	3
Owner name:	JERRY L LARGE		
Well addr:	5940 VANTYLE ROAD		
Well depth:	119		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	617
Const date:	2000-08-10 00:00:00.000	Case type:	Steel-black
Case dia:	4		
Case depth:	115		
Screen frm:	115		
Screen to:	119		
Swl:	90		
Test depth:	91		
Test hours:	1		
Test rate:	16	Test methd:	Test Pump
Grouted:	1	Pmp cpcity:	20
Latitude:	45.01849568		
Longitude:	-84.78545232		
Methd coll:	Address Matching-House Number		
Elevation:	1371		
Elev methd:	Topographoc Map Interpolation	Depth flag:	Not Reported
Elev flag:	ELEV_DIF > 20 feet -- Abs(Elevation feet DEM_Elevation) > 20 feet		
Swl flag:	Not Reported		
Elev dem:	1348	Elev dif:	23
Elev miv:	1371	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	99		
Pct aq d:	99	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	1
Pct na d:	1	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	.200000002980232
A thicknes:	29	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	29	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Coarse	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	95
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	5

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	29		
Horiz Conduct:	165.51724		
Vert Conduct:	148.71795		
T2:	4800		
D50plek:	223.50385		

2
SE
1/4 - 1/2 Mile
Lower

MI WELLS MI3000000286290

Wellid:	69000001435	Import id:	Not Reported
County:	Otsego	Township:	Hayes
Town range:	30N 04W	Section:	3
Owner name:	TAMI HILL		
Well addr:	5258 VAN TYLE RD		
Well depth:	88		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1522
Const date:	2002-02-27 00:00:00.000	Case type:	Steel-black
Case dia:	4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Case depth:	84		
Screen frm:	84		
Screen to:	88		
Swl:	67		
Test depth:	67		
Test hours:	.5		
Test rate:	10	Test methd:	Unknown
Grouted:	1	Pmp cpcity:	10
Latitude:	45.01834784		
Longitude:	-84.77451018		
Methd coll:	Address Matching-House Number		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1345	Elev dif:	1345
Elev miv:	1345	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	100		
Pct aq d:	100	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	21	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	21	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Not Reported	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	100
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0
Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	0
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	21		
Horiz Conduct:	100		
Vert Conduct:	100		
T2:	2100		
D50plek:	73.8099		

**A3
NE
1/2 - 1 Mile
Higher**

MI WELLS MI3000000286598

Wellid:	69000001491	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	FRED BAKER		
Well addr:	60 OLD COLONY RD		
Well depth:	108		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1522
Const date:	2002-06-19 00:00:00.000	Case type:	Steel-black
Case dia:	4		
Case depth:	108		
Screen frm:	105		
Screen to:	108		
Swl:	86		
Test depth:	86		
Test hours:	.5		
Test rate:	10	Test methd:	Unknown
Grouted:	1	Pmp cpcity:	10
Latitude:	45.02916947		
Longitude:	-84.77277252		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1361	Elev dif:	1361
Elev miv:	1361	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	100		
Pct aq d:	100	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	22	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	22	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Not Reported	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	100
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0
Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	22		
Horiz Conduct:	100		
Vert Conduct:	100		
T2:	2200		
D50plek:	80.81401		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

B4
NE
1/2 - 1 Mile
Higher

MI WELLS MI3000000286580

Wellid:	69000000699	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	Susan Denholm		
Well addr:	243 Old Colony		
Well depth:	108		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	2255
Const date:	2000-03-21 00:00:00.000	Case type:	Steel-black
Case dia:	4		
Case depth:	108		
Screen frm:	104		
Screen to:	108		
Swl:	74		
Test depth:	74		
Test hours:	3		
Test rate:	60	Test methd:	Plunger
Grouted:	1	Pmp cpcity:	10
Latitude:	45.02841232		
Longitude:	-84.77152999		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1361	Elev dif:	1361
Elev miv:	1361	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	99		
Pct aq d:	99	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	1
Pct na d:	1	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	.800000011920929
A thicknes:	34	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	34	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand & Gravel
A sc lmod1:	Wet/Moist	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	95
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	5

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	34		
Horiz Conduct:	100		
Vert Conduct:	100		
T2:	3400		
D50plek:	188.8139		

**5
East
1/2 - 1 Mile
Lower**

MI WELLS MI3000000286374

Wellid:	69000000680	Import id:	Not Reported
County:	Otsego	Township:	Hayes
Town range:	30N 04W	Section:	3
Owner name:	KENNETH PAYTON		
Well addr:	Not Reported		
Well depth:	100		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1267
Const date:	2000-05-15 11:40:57.000	Case type:	Steel-black
Case dia:	4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Case depth:	96		
Screen frm:	96		
Screen to:	100		
Swl:	65		
Test depth:	65		
Test hours:	.5		
Test rate:	10	Test methd:	Test Pump
Grouted:	1	Pmp cpcity:	18
Latitude:	45.02099559		
Longitude:	-84.76808652		
Methd coll:	Address Matching-House Number		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1335	Elev dif:	1335
Elev miv:	1335	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	99		
Pct aq d:	99	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	1
Pct na d:	1	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	.200000002980232
A thicknes:	35	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	35	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Coarse	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	95
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	5
Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	35		
Horiz Conduct:	200		
Vert Conduct:	200		
T2:	7000		
D50plek:	386.21155		

**A6
NE
1/2 - 1 Mile
Higher**

MI WELLS MI3000000286611

Wellid:	69000000718	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	DEANORTERANCE JOHNSON		
Well addr:	94 BRANDYWINE LANE		
Well depth:	124		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1617
Const date:	2000-08-15 00:00:00.000	Case type:	Steel-Galvanized
Case dia:	4		
Case depth:	120		
Screen frm:	120		
Screen to:	124		
Swl:	87		
Test depth:	0		
Test hours:	.5		
Test rate:	22	Test methd:	Test Pump
Grouted:	1	Pmp cpcity:	12
Latitude:	45.0295396		
Longitude:	-84.77260728		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1361	Elev dif:	1361
Elev miv:	1361	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	100		
Pct aq d:	100	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	37	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	37	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Water Bearing	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	100
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0
Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	37		
Horiz Conduct:	100		
Vert Conduct:	100		
T2:	3700		
D50plek:	222.66184		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

B7
NE
1/2 - 1 Mile
Higher

MI WELLS MI3000000286587

Wellid:	69000000755	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	ROBERT DEVOS		
Well addr:	Not Reported		
Well depth:	109		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1267
Const date:	2000-07-14 00:00:00.000	Case type:	Steel-black
Case dia:	4		
Case depth:	105		
Screen frm:	105		
Screen to:	109		
Swl:	85		
Test depth:	85		
Test hours:	.5		
Test rate:	10	Test methd:	Test Pump
Grouted:	1	Pmp cpcity:	10
Latitude:	45.02882076		
Longitude:	-84.77146882		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1361	Elev dif:	1361
Elev miv:	1361	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	99		
Pct aq d:	99	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	1
Pct na d:	1	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	.100000001490116
A thicknes:	24	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	24	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Coarse	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	95
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	5

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	24		
Horiz Conduct:	200		
Vert Conduct:	200		
T2:	4800		
D50plek:	184.9687		

8
East
1/2 - 1 Mile
Lower

MI WELLS MI3000000286466

Wellid:	69000001125	Import id:	Not Reported
County:	Otsego	Township:	Hayes
Town range:	30N 04W	Section:	3
Owner name:	GREG PUNG		
Well addr:	550 HAYES TOWER ROAD		
Well depth:	131		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1267
Const date:	2001-06-12 00:00:00.000	Case type:	Steel-black
Case dia:	4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Case depth:	119		
Screen frm:	119		
Screen to:	131		
Swl:	86		
Test depth:	86		
Test hours:	1		
Test rate:	18	Test methd:	Test Pump
Grouted:	1	Pmp cpcity:	230
Latitude:	45.02393528		
Longitude:	-84.76781943		
Methd coll:	Address Matching-House Number		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1345	Elev dif:	1345
Elev miv:	1345	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	99		
Pct aq d:	99	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	1
Pct na d:	1	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	.200000002980232
A thicknes:	45	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	45	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Coarse	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	95
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	5
Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	100	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	45		
Horiz Conduct:	200		
Vert Conduct:	200		
T2:	9000		
D50plek:	630.77532		

**B9
NE
1/2 - 1 Mile
Higher**

MI WELLS MI3000000286596

Wellid:	69000000727	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	BONNIE RITTER		
Well addr:	61 OLD COLONY		
Well depth:	102		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1522
Const date:	2000-05-16 00:00:00.000	Case type:	Steel-black
Case dia:	4		
Case depth:	102		
Screen frm:	99		
Screen to:	102		
Swl:	78		
Test depth:	78		
Test hours:	.5		
Test rate:	10	Test methd:	Unknown
Grouted:	1	Pmp cpcity:	10
Latitude:	45.02911652		
Longitude:	-84.77130517		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1364	Elev dif:	1364
Elev miv:	1364	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	100		
Pct aq d:	100	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	24	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	24	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Not Reported	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	100
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0
Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	24		
Horiz Conduct:	100		
Vert Conduct:	100		
T2:	2400		
D50plek:	95.74916		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

10
NNE
1/2 - 1 Mile
Higher

MI WELLS MI3000000286637

Wellid:	69000001052	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	DONALD MILLER		
Well addr:	Not Reported		
Well depth:	130		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1526
Const date:	2001-02-01 00:00:00.000	Case type:	Steel-black
Case dia:	4		
Case depth:	126		
Screen frm:	126		
Screen to:	130		
Swl:	88		
Test depth:	92		
Test hours:	1		
Test rate:	30	Test methd:	Test Pump
Grouted:	1	Pmp cpcity:	10
Latitude:	45.03032886		
Longitude:	-84.77337714		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1361	Elev dif:	1361
Elev miv:	1361	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	100		
Pct aq d:	100	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	.300000011920929
A thicknes:	42	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	42	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Water Bearing	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	100
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	100	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	42		
Horiz Conduct:	100		
Vert Conduct:	100		
T2:	4200		
D50plek:	285.10611		

**11
NNE
1/2 - 1 Mile
Higher**

MI WELLS MI3000000286659

Wellid:	69000000807	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	ROBERT CLIFTON		
Well addr:	245 BRANDYWINE LANE		
Well depth:	105		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1522
Const date:	2000-08-03 00:00:00.000	Case type:	Steel-black
Case dia:	4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Case depth:	105		
Screen frm:	102		
Screen to:	105		
Swl:	78		
Test depth:	78		
Test hours:	.5		
Test rate:	20	Test methd:	Unknown
Grouted:	1	Pmp cpcity:	18
Latitude:	45.03125566		
Longitude:	-84.77405559		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1355	Elev dif:	1355
Elev miv:	1355	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	71		
Pct aq d:	71	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	27	A pct aq:	0
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	100
A thickns2:	27	A pct aq2:	0
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	100
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	See Comments
A sc lmod1:	Not Reported	A sc lmaq1:	NA
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	100
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0
Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	75	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	25	Pct aq 5:	0
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	100
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	Not Reported		
Hit swl:	Not Reported		
Athk2:	0		
Horiz Conduct:	0		
Vert Conduct:	0		
T2:	0		
D50plek:	0		

**12
NE
1/2 - 1 Mile
Higher**

MI WELLS MI3000000286620

Wellid:	69000001299	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	SCOTT PULOSKI		
Well addr:	Not Reported		
Well depth:	120		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1522
Const date:	2001-10-19 00:00:00.000	Case type:	Steel-black
Case dia:	4		
Case depth:	120		
Screen frm:	117		
Screen to:	120		
Swl:	76		
Test depth:	76		
Test hours:	.5		
Test rate:	10	Test methd:	Unknown
Grouted:	1	Pmp cpcity:	10
Latitude:	45.0299334		
Longitude:	-84.77118283		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1364	Elev dif:	1364
Elev miv:	1364	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	100		
Pct aq d:	100	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	44	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	44	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Not Reported	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	100
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0
Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	44		
Horiz Conduct:	100		
Vert Conduct:	100		
T2:	4400		
D50plek:	312.18643		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

13
NE
1/2 - 1 Mile
Higher

MI WELLS MI3000000286612

Wellid:	69000000862	Import id:	Not Reported
County:	Otsego	Township:	Elmira
Town range:	31N 04W	Section:	35
Owner name:	CHRISTOPHER BURGER		
Well addr:	526 BURDO ROAD		
Well depth:	127		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1617
Const date:	2000-11-02 00:00:00.000	Case type:	Steel-black
Case dia:	4		
Case depth:	123		
Screen frm:	123		
Screen to:	127		
Swl:	100		
Test depth:	0		
Test hours:	.5		
Test rate:	20	Test methd:	Test Pump
Grouted:	1	Pmp cpcity:	10
Latitude:	45.02957507		
Longitude:	-84.76600858		
Methd coll:	Address Matching-House Number		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	1358	Elev dif:	1358
Elev miv:	1358	Aq code:	Drift Well
Aq flag:	Not Reported		
Pct aq:	100		
Pct aq d:	100	Pct aq r:	0
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	0	Pct pcm d:	0
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	27	A pct aq:	100
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	27	A pct aq2:	100
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	T	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Water Bearing	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	100
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pct aq 2:	100	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	100
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	100	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	100
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	100	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	D		
Hit swl:	T		
Athk2:	27		
Horiz Conduct:	100		
Vert Conduct:	100		
T2:	2700		
D50plek:	120.45994		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

A1
SSW
1/8 - 1/4 Mile

OIL_GAS MIOG80000057672

Api wellno:	21137482160000		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	48216		
Lease name:	WILD WEST		
Well no:	D2-3 SWD		
Deepestfmtn:	DUND	Obj fmtn:	BILD
Drillerstd:	2335	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Brine Disposal Well	Well status:	Active
Source loc:	g	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rgn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	SE
Wh q:	SW		
Wh lat:	45.0196394		
Wh long:	-84.7816782		
Wh georef x:	595828.11		
Wh georef y:	497158.2		
Bh georef x:	595828.11		
Bh georef y:	497158.2		
Bh sourceloc:	C		
Bh lat:	45.0196394		
Bh long:	-84.7816782		
Site id:	MIOG80000057672		

B2
South
1/8 - 1/4 Mile

OIL_GAS MIOG80000057664

Api wellno:	21137446960000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44696		
Lease name:	EBLING		
Well no:	D2-3		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	3
Wh twpn:	30	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	SE
Wh q:	SW		
Wh lat:	45.01947		
Wh long:	-84.78002		
Wh georef x:	595959.26		
Wh georef y:	497141.76		
Bh georef x:	595959.26		
Bh georef y:	497141.76		
Bh sourceloc:	C		
Bh lat:	45.01947		
Bh long:	-84.78002		
Site id:	MIOG80000057664		

B3
South
1/8 - 1/4 Mile

OIL_GAS MIOG80000057665

Api wellno:	21137469610000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46961		
Lease name:	EBLING		
Well no:	D2-3		
Deepestfntn:	Not Reported	Obj fmntn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	SE
Wh q:	SW		
Wh lat:	45.01947		
Wh long:	-84.78002		
Wh georef x:	595959.26		
Wh georef y:	497141.76		
Bh georef x:	595959.26		
Bh georef y:	497141.76		
Bh sourceloc:	C		
Bh lat:	45.01947		
Bh long:	-84.78002		
Site id:	MIOG80000057665		

A4
SSW
1/8 - 1/4 Mile

OIL_GAS MIOG80000057650

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137482150000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	48215		
Lease name:	WILD WEST		
Well no:	D2-3		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR4
Drillerstd:	1635	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	SE
Wh q:	SW		
Wh lat:	45.0193697		
Wh long:	-84.7816749		
Wh georef x:	595829.35		
Wh georef y:	497128.22		
Bh georef x:	595829.35		
Bh georef y:	497128.22		
Bh sourceloc:	C		
Bh lat:	45.0193697		
Bh long:	-84.7816749		
Site id:	MIOG80000057650		

C6
WSW
1/4 - 1/2 Mile

OIL_GAS

MIOG80000057713

Api wellno:	21137469630000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46963		
Lease name:	EBLING		
Well no:	D1-3		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	SW
Wh q:	SW		
Wh lat:	45.02047		
Wh long:	-84.78628		
Wh georef x:	595464.14		
Wh georef y:	497244.58		
Bh georef x:	595464.14		
Bh georef y:	497244.58		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.02047
 Bh long: -84.78628
 Site id: MIOG80000057713

C5
WSW
 1/4 - 1/2 Mile

OIL_GAS **MIOG80000057712**

Api wellno:	21137446940000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44694		
Lease name:	EBLING		
Well no:	D1-3		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NW	Wh qq:	SW
Wh q:	SW		
Wh lat:	45.02047		
Wh long:	-84.78628		
Wh georef x:	595464.14		
Wh georef y:	497244.58		
Bh georef x:	595464.14		
Bh georef y:	497244.58		
Bh sourceloc:	C		
Bh lat:	45.02047		
Bh long:	-84.78628		
Site id:	MIOG80000057712		

D8
WNW
 1/4 - 1/2 Mile

OIL_GAS **MIOG80000057957**

Api wellno:	21137469620000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46962		
Lease name:	EBLING		
Well no:	C1-3		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	3
Wh twpn:	30	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	NW
Wh q:	SW		
Wh lat:	45.02457		
Wh long:	-84.78638		
Wh georef x:	595449.78		
Wh georef y:	497700.67		
Bh georef x:	595449.78		
Bh georef y:	497700.67		
Bh sourceloc:	C		
Bh lat:	45.02457		
Bh long:	-84.78638		
Site id:	MIOG80000057957		

**D7
WNW
1/4 - 1/2 Mile**

OIL_GAS MIOG80000057956

Api wellno:	21137446930000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44693		
Lease name:	EBLING		
Well no:	C1-3		
Deepestfntn:	Not Reported	Obj fmntn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	NW
Wh q:	SW		
Wh lat:	45.02457		
Wh long:	-84.78638		
Wh georef x:	595449.78		
Wh georef y:	497700.67		
Bh georef x:	595449.78		
Bh georef y:	497700.67		
Bh sourceloc:	C		
Bh lat:	45.02457		
Bh long:	-84.78638		
Site id:	MIOG80000057956		

**D9
WNW
1/4 - 1/2 Mile**

OIL_GAS MIOG80000057964

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137478030000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	47803		
Lease name:	WILD WEST		
Well no:	C1-3		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR4
Drillerstd:	1576	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	NW
Wh q:	SW		
Wh lat:	45.0247028		
Wh long:	-84.7862711		
Wh georef x:	595458.07		
Wh georef y:	497714.86		
Bh georef x:	595458.07		
Bh georef y:	497714.86		
Bh sourceloc:	C		
Bh lat:	45.0247028		
Bh long:	-84.7862711		
Site id:	MIOG80000057964		

**10
ENE
1/4 - 1/2 Mile**

OIL_GAS

MIOG80000057904

Api wellno:	21137482020000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	48202		
Lease name:	WILD WEST		
Well no:	C3-3		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR4
Drillerstd:	1594	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	NW
Wh q:	SE		
Wh lat:	45.0239538		
Wh long:	-84.7743342		
Wh georef x:	596399.95		
Wh georef y:	497645.7		
Bh georef x:	596399.95		
Bh georef y:	497645.7		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.0239538
 Bh long: -84.7743342
 Site id: MIOG80000057904

11
South
1/4 - 1/2 Mile

OIL_GAS MIOG80000057465

Api wellno:	21137423580000		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	42358		
Lease name:	STATE HAYES		
Well no:	3-10		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR2
Drillerstd:	1417	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	10
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NE	Wh qq:	NE
Wh q:	NW		
Wh lat:	45.0167815		
Wh long:	-84.7805622		
Wh georef x:	595921.12		
Wh georef y:	496841.83		
Bh georef x:	595921.12		
Bh georef y:	496841.83		
Bh sourceloc:	C		
Bh lat:	45.0167815		
Bh long:	-84.7805622		
Site id:	MIOG80000057465		

E12
WSW
1/4 - 1/2 Mile

OIL_GAS MIOG80000057719

Api wellno:	21137478040000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	47804		
Lease name:	WILD WEST		
Well no:	D4-4		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR4
Drillerstd:	1565	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	4
Wh twpn:	30	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	SE
Wh q:	SE		
Wh lat:	45.0205675		
Wh long:	-84.7900514		
Wh georef x:	595167.14		
Wh georef y:	497251.64		
Bh georef x:	595167.14		
Bh georef y:	497251.64		
Bh sourceloc:	C		
Bh lat:	45.0205675		
Bh long:	-84.7900514		
Site id:	MIOG80000057719		

E14
WSW
1/4 - 1/2 Mile

OIL_GAS MIOG80000057708

Api wellno:	21137469600000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46960		
Lease name:	EBLING		
Well no:	D4-4		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	4
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	SE
Wh q:	SE		
Wh lat:	45.02045		
Wh long:	-84.79006		
Wh georef x:	595166.81		
Wh georef y:	497238.11		
Bh georef x:	595166.81		
Bh georef y:	497238.11		
Bh sourceloc:	C		
Bh lat:	45.02045		
Bh long:	-84.79006		
Site id:	MIOG80000057708		

E13
WSW
1/4 - 1/2 Mile

OIL_GAS MIOG80000057707

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137446950000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44695		
Lease name:	EBLING		
Well no:	D4-4		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	4
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	SE
Wh q:	SE		
Wh lat:	45.02045		
Wh long:	-84.79006		
Wh georef x:	595166.81		
Wh georef y:	497238.11		
Bh georef x:	595166.81		
Bh georef y:	497238.11		
Bh sourceloc:	C		
Bh lat:	45.02045		
Bh long:	-84.79006		
Site id:	MIOG80000057707		

**15
ESE
1/2 - 1 Mile**

OIL_GAS

MIOG80000057645

Api wellno:	21137568410000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	56841		
Lease name:	WILD WEST		
Well no:	D4-3		
Deepestfmtn:	TRVR4	Obj fmtn:	Not Reported
Drillerstd:	1515	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	3
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	SE
Wh q:	SE		
Wh lat:	45.0193167		
Wh long:	-84.7712527		
Wh georef x:	596650.38		
Wh georef y:	497135.05		
Bh georef x:	596650.38		
Bh georef y:	497135.05		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.0193167
 Bh long: -84.7712527
 Site id: MIOG80000057645

F16
North
1/2 - 1 Mile

OIL_GAS MIOG80000058307

Api wellno:	21137420550000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	42055		
Lease name:	BRANDENBURG		
Well no:	D4-34		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR
Drillerstd:	1447	Truetd:	0
County:	OTSEGO	Slant:	D
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NW	Wh qq:	SE
Wh q:	SE		
Wh lat:	45.0306136		
Wh long:	-84.7808889		
Wh georef x:	595872.03		
Wh georef y:	498377.72		
Bh georef x:	596150.41		
Bh georef y:	498353.64		
Bh sourceloc:	C		
Bh lat:	45.03036		
Bh long:	-84.77736		
Site id:	MIOG80000058307		

F17
North
1/2 - 1 Mile

OIL_GAS MIOG80000058308

Api wellno:	21137420540000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	42054		
Lease name:	BRANDENBURG		
Well no:	D3-34		
Deepestfmtn:	TRVR2	Obj fmtn:	TRVR
Drillerstd:	1442	Truetd:	1253
County:	OTSEGO	Slant:	D
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	SW
Wh q:	SE		
Wh lat:	45.0306138		
Wh long:	-84.7809079		
Wh georef x:	595870.46		
Wh georef y:	498377.7		
Bh georef x:	595683.18		
Bh georef y:	498384.27		
Bh sourceloc:	C		
Bh lat:	45.03069		
Bh long:	-84.78329		
Site id:	MIOG80000058308		

G18
SW
1/2 - 1 Mile

OIL_GAS MIOG80000057435

Api wellno:	21137469580000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	46958		
Lease name:	EBLING		
Well no:	A4-9		
Deepestfmtn:	TRVR4	Obj fmtn:	ANRM
Drillerstd:	1571	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	9
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	NE
Wh q:	NE		
Wh lat:	45.0162839		
Wh long:	-84.7898239		
Wh georef x:	595192.36		
Wh georef y:	496775.37		
Bh georef x:	595192.36		
Bh georef y:	496775.37		
Bh sourceloc:	C		
Bh lat:	45.0162839		
Bh long:	-84.7898239		
Site id:	MIOG80000057435		

G19
SW
1/2 - 1 Mile

OIL_GAS MIOG80000057427

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137446970000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44697		
Lease name:	EBLING		
Well no:	A4-9		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	9
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	SE	Wh qq:	NE
Wh q:	NE		
Wh lat:	45.01619		
Wh long:	-84.78983		
Wh georef x:	595192.08		
Wh georef y:	496765.76		
Bh georef x:	595192.08		
Bh georef y:	496765.76		
Bh sourceloc:	C		
Bh lat:	45.01619		
Bh long:	-84.78983		
Site id:	MIOG80000057427		

**H21
South
1/2 - 1 Mile**

OIL_GAS

MIOG80000057214

Api wellno:	21137423590100		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	42359		
Lease name:	STATE HAYES		
Well no:	6-10		
Deepestfmtn:	DUND	Obj fmtn:	DUND
Drillerstd:	2493	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	10
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NE	Wh qq:	SE
Wh q:	NW		
Wh lat:	45.0131337		
Wh long:	-84.7801295		
Wh georef x:	595961.1		
Wh georef y:	496436.89		
Bh georef x:	595961.1		
Bh georef y:	496436.89		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.0131337
 Bh long: -84.7801295
 Site id: MIOG80000057214

H20
South
1/2 - 1 Mile

OIL_GAS MIOG80000057213

Api wellno:	21137423590000		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	42359		
Lease name:	STATE HAYES		
Well no:	6-10		
Deepestfmtn:	DUND	Obj fmtn:	TRVR2
Drillerstd:	1416	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas & Brine Disposal	Well status:	Plugged Back
Source loc:	g	Wh sec:	10
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NE	Wh qq:	SE
Wh q:	NW		
Wh lat:	45.0131337		
Wh long:	-84.7801295		
Wh georef x:	595961.1		
Wh georef y:	496436.89		
Bh georef x:	595961.1		
Bh georef y:	496436.89		
Bh sourceloc:	C		
Bh lat:	45.0131337		
Bh long:	-84.7801295		
Site id:	MIOG80000057213		

22
SSE
1/2 - 1 Mile

OIL_GAS MIOG80000057260

Api wellno:	21137423600000		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	42360		
Lease name:	STATE HAYES		
Well no:	7-10		
Deepestfmtn:	TRVR2	Obj fmtn:	TRVR2
Drillerstd:	1410	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	10
Wh twpn:	30	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	SW
Wh q:	NE		
Wh lat:	45.0137042		
Wh long:	-84.774147		
Wh georef x:	596431.33		
Wh georef y:	496507.31		
Bh georef x:	596431.33		
Bh georef y:	496507.31		
Bh sourceloc:	C		
Bh lat:	45.0137042		
Bh long:	-84.774147		
Site id:	MIOG80000057260		

23
WNW
1/2 - 1 Mile

OIL_GAS MIOG80000058120

Api wellno:	21137526070000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	52607		
Lease name:	WILD WEST		
Well no:	B4-4		
Deepestfntn:	TRVR4	Obj fntn:	TRVR4
Drillerstd:	1552	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	4
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	SE
Wh q:	NE		
Wh lat:	45.0272972		
Wh long:	-84.7929803		
Wh georef x:	594925.17		
Wh georef y:	497995.79		
Bh georef x:	594925.17		
Bh georef y:	497995.79		
Bh sourceloc:	C		
Bh lat:	45.0272972		
Bh long:	-84.7929803		
Site id:	MIOG80000058120		

24
SSW
1/2 - 1 Mile

OIL_GAS MIOG80000057177

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137491210000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	49121		
Lease name:	WILD WEST		
Well no:	B1-10		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR4
Drillerstd:	1591	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	10
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	SW
Wh q:	NW		
Wh lat:	45.012448		
Wh long:	-84.7842532		
Wh georef x:	595637.6		
Wh georef y:	496356.48		
Bh georef x:	595637.6		
Bh georef y:	496356.48		
Bh sourceloc:	C		
Bh lat:	45.012448		
Bh long:	-84.7842532		
Site id:	MIOG80000057177		

**I25
NNW
1/2 - 1 Mile**

OIL_GAS

MIOG80000058397

Api wellno:	21137418280000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	41828		
Lease name:	BRANDENBURG SWD		
Well no:	1-34		
Deepestfmtn:	DRRV	Obj fmtn:	DRRV
Drillerstd:	2261	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Brine Disposal Well	Well status:	Active
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	NW
Wh q:	SE		
Wh lat:	45.0323775		
Wh long:	-84.7846308		
Wh georef x:	595574.49		
Wh georef y:	498569.92		
Bh georef x:	595574.49		
Bh georef y:	498569.92		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.0323775
 Bh long: -84.7846308
 Site id: MIOG80000058397

J27
North
1/2 - 1 Mile

OIL_GAS MIOG80000058438

Api wellno:	21137420530100		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	42053		
Lease name:	BRANDENBURG		
Well no:	C4-34		
Deepestfmrtn:	DUND	Obj fmrtn:	DUND
Drillerstd:	2208	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	SW	Wh qq:	NE
Wh q:	SE		
Wh lat:	45.0328453		
Wh long:	-84.779564		
Wh georef x:	595973.05		
Wh georef y:	498628.13		
Bh georef x:	595973.05		
Bh georef y:	498628.13		
Bh sourceloc:	C		
Bh lat:	45.0328453		
Bh long:	-84.779564		
Site id:	MIOG80000058438		

J26
North
1/2 - 1 Mile

OIL_GAS MIOG80000058437

Api wellno:	21137420530000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	42053		
Lease name:	BRANDENBURG		
Well no:	C4-34		
Deepestfmrtn:	DUND	Obj fmrtn:	TRVR
Drillerstd:	2088	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	NE
Wh q:	SE		
Wh lat:	45.0328453		
Wh long:	-84.779564		
Wh georef x:	595973.05		
Wh georef y:	498628.13		
Bh georef x:	595973.05		
Bh georef y:	498628.13		
Bh sourceloc:	C		
Bh lat:	45.0328453		
Bh long:	-84.779564		
Site id:	MIOG80000058437		

**28
NE
1/2 - 1 Mile**

OIL_GAS MIOG80000058285

Api wellno:	21137565920000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	56592		
Lease name:	STATE ELMIRA ET AL		
Well no:	D2-35		
Deepestfmtn:	TRVR4	Obj fmtn:	Not Reported
Drillerstd:	1768	Truetd:	1742
County:	OTSEGO	Slant:	D
Well type:	Gas	Well status:	Producing
Source loc:	C	Wh sec:	35
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	SE
Wh q:	SW		
Wh lat:	45.03007		
Wh long:	-84.7696		
Wh georef x:	596762.12		
Wh georef y:	498331.26		
Bh georef x:	596702.45		
Bh georef y:	498326.04		
Bh sourceloc:	C		
Bh lat:	45.03003		
Bh long:	-84.77036		
Site id:	MIOG80000058285		

**129
NNW
1/2 - 1 Mile**

OIL_GAS MIOG80000058453

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137420490000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	42049		
Lease name:	GAYLORD COUNTRY CLUB		
Well no:	C3-34		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR
Drillerstd:	1255	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	NW
Wh q:	SE		
Wh lat:	45.0330758		
Wh long:	-84.7846195		
Wh georef x:	595574.11		
Wh georef y:	498647.69		
Bh georef x:	595574.11		
Bh georef y:	498647.69		
Bh sourceloc:	C		
Bh lat:	45.0330758		
Bh long:	-84.7846195		
Site id:	MIOG80000058453		

K30
NNW
1/2 - 1 Mile

OIL_GAS

MIOG80000058379

Api wellno:	21137420560000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	42056		
Lease name:	PRICE		
Well no:	D2-34		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR
Drillerstd:	1503	Truetd:	0
County:	OTSEGO	Slant:	D
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	SE
Wh q:	SW		
Wh lat:	45.0322178		
Wh long:	-84.7879655		
Wh georef x:	595311.67		
Wh georef y:	498548.21		
Bh georef x:	595290.89		
Bh georef y:	498328.4		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.03024
 Bh long: -84.78828
 Site id: MIOG80000058379

**K31
 NNW
 1/2 - 1 Mile**

OIL_GAS MIOG80000058386

Api wellno:	21137420570000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	42057		
Lease name:	PRICE		
Well no:	C2-34		
Deepestfmtn:	TRVR2	Obj fmtn:	TRVR
Drillerstd:	1474	Truetd:	1288
County:	OTSEGO	Slant:	D
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	SE	Wh qq:	NE
Wh q:	SW		
Wh lat:	45.0323025		
Wh long:	-84.787961		
Wh georef x:	595312.32		
Wh georef y:	498557.11		
Bh georef x:	595305.59		
Bh georef y:	498734.24		
Bh sourceloc:	C		
Bh lat:	45.0339		
Bh long:	-84.78801		
Site id:	MIOG80000058386		

**L32
 ENE
 1/2 - 1 Mile**

OIL_GAS MIOG80000058089

Api wellno:	21137481490000		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	48149		
Lease name:	COACHES		
Well no:	B1-2		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR4
Drillerstd:	1565	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	2
Wh twpn:	30	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	SW
Wh q:	NW		
Wh lat:	45.0265645		
Wh long:	-84.7657553		
Wh georef x:	597070.67		
Wh georef y:	497945.86		
Bh georef x:	597070.67		
Bh georef y:	497945.86		
Bh sourceloc:	C		
Bh lat:	45.0265645		
Bh long:	-84.7657553		
Site id:	MIOG80000058089		

M33
ESE
1/2 - 1 Mile

OIL_GAS MIOG80000057627

Api wellno:	21137481630000		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	48163		
Lease name:	STATE HAYES COACHES		
Well no:	D1-2		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR4
Drillerstd:	1615	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	2
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	SW
Wh q:	SW		
Wh lat:	45.0191135		
Wh long:	-84.7648815		
Wh georef x:	597152.59		
Wh georef y:	497119.34		
Bh georef x:	597152.59		
Bh georef y:	497119.34		
Bh sourceloc:	C		
Bh lat:	45.0191135		
Bh long:	-84.7648815		
Site id:	MIOG80000057627		

M34
ESE
1/2 - 1 Mile

OIL_GAS MIOG80000057632

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137446680000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44668		
Lease name:	STATE HAYES		
Well no:	D1-2		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	2
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	SE	Wh qq:	SW
Wh q:	SW		
Wh lat:	45.01915		
Wh long:	-84.7648		
Wh georef x:	597158.79		
Wh georef y:	497123.38		
Bh georef x:	597158.79		
Bh georef y:	497123.38		
Bh sourceloc:	C		
Bh lat:	45.01915		
Bh long:	-84.7648		
Site id:	MIOG80000057632		

M35
ESE
1/2 - 1 Mile

OIL_GAS

MIOG80000057633

Api wellno:	21137469860000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46986		
Lease name:	STATE HAYES		
Well no:	D1-2		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	2
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	SE	Wh qq:	SW
Wh q:	SW		
Wh lat:	45.01915		
Wh long:	-84.7648		
Wh georef x:	597158.79		
Wh georef y:	497123.38		
Bh georef x:	597158.79		
Bh georef y:	497123.38		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.01915
 Bh long: -84.7648
 Site id: MIOG80000057633

N36
ESE
 1/2 - 1 Mile

OIL_GAS **MIOG80000057450**

Api wellno:	21137446790000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44679		
Lease name:	CUSTER		
Well no:	A1-11		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	11
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NW	Wh qq:	NW
Wh q:	NW		
Wh lat:	45.01656		
Wh long:	-84.76621		
Wh georef x:	597052.4		
Wh georef y:	496834.86		
Bh georef x:	597052.4		
Bh georef y:	496834.86		
Bh sourceloc:	C		
Bh lat:	45.01656		
Bh long:	-84.76621		
Site id:	MIOG80000057450		

N37
ESE
 1/2 - 1 Mile

OIL_GAS **MIOG80000057451**

Api wellno:	21137470020000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	47002		
Lease name:	CUSTER		
Well no:	A1-11		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	11
Wh twpn:	30	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	NW
Wh q:	NW		
Wh lat:	45.01656		
Wh long:	-84.76621		
Wh georef x:	597052.4		
Wh georef y:	496834.86		
Bh georef x:	597052.4		
Bh georef y:	496834.86		
Bh sourceloc:	C		
Bh lat:	45.01656		
Bh long:	-84.76621		
Site id:	MIOG80000057451		

O39
SSW
1/2 - 1 Mile

OIL_GAS MIOG80000057174

Api wellno:	21137469640000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46964		
Lease name:	EBLING		
Well no:	B4-9		
Deepestfntn:	Not Reported	Obj fmntn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	9
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	SE
Wh q:	NE		
Wh lat:	45.01238		
Wh long:	-84.78973		
Wh georef x:	595205.56		
Wh georef y:	496342.02		
Bh georef x:	595205.56		
Bh georef y:	496342.02		
Bh sourceloc:	C		
Bh lat:	45.01238		
Bh long:	-84.78973		
Site id:	MIOG80000057174		

O38
SSW
1/2 - 1 Mile

OIL_GAS MIOG80000057173

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137446980000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44698		
Lease name:	EBLING		
Well no:	B4-9		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	9
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	SE
Wh q:	NE		
Wh lat:	45.01238		
Wh long:	-84.78973		
Wh georef x:	595205.56		
Wh georef y:	496342.02		
Bh georef x:	595205.56		
Bh georef y:	496342.02		
Bh sourceloc:	C		
Bh lat:	45.01238		
Bh long:	-84.78973		
Site id:	MIOG80000057173		

**L41
ENE
1/2 - 1 Mile**

OIL_GAS

MIOG80000058083

Api wellno:	21137469990000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46999		
Lease name:	HIRD		
Well no:	B1-2		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	2
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	SW
Wh q:	NW		
Wh lat:	45.02653		
Wh long:	-84.76496		
Wh georef x:	597133.86		
Wh georef y:	497943.43		
Bh georef x:	597133.86		
Bh georef y:	497943.43		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.02653
 Bh long: -84.76496
 Site id: MIOG80000058083

**L40
ENE
1/2 - 1 Mile**

OIL_GAS MIOG80000058082

Api wellno:	21137446760000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44676		
Lease name:	HIRD		
Well no:	B1-2		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	2
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	SE	Wh qq:	SW
Wh q:	NW		
Wh lat:	45.02653		
Wh long:	-84.76496		
Wh georef x:	597133.86		
Wh georef y:	497943.43		
Bh georef x:	597133.86		
Bh georef y:	497943.43		
Bh sourceloc:	C		
Bh lat:	45.02653		
Bh long:	-84.76496		
Site id:	MIOG80000058082		

**P42
East
1/2 - 1 Mile**

OIL_GAS MIOG80000057930

Api wellno:	21137446640000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44664		
Lease name:	MILLER		
Well no:	C1-2		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	2
Wh twpn:	30	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	NW
Wh q:	SW		
Wh lat:	45.02423		
Wh long:	-84.764		
Wh georef x:	597213.41		
Wh georef y:	497689.69		
Bh georef x:	597213.41		
Bh georef y:	497689.69		
Bh sourceloc:	C		
Bh lat:	45.02423		
Bh long:	-84.764		
Site id:	MIOG80000057930		

**P43
East
1/2 - 1 Mile**

OIL_GAS MIOG80000057931

Api wellno:	21137469820000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46982		
Lease name:	MILLER		
Well no:	C1-2		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	2
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	NW
Wh q:	SW		
Wh lat:	45.02423		
Wh long:	-84.764		
Wh georef x:	597213.41		
Wh georef y:	497689.69		
Bh georef x:	597213.41		
Bh georef y:	497689.69		
Bh sourceloc:	C		
Bh lat:	45.02423		
Bh long:	-84.764		
Site id:	MIOG80000057931		

**44
WSW
1/2 - 1 Mile**

OIL_GAS MIOG80000057642

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137482100000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	48210		
Lease name:	WILD WEST		
Well no:	D3-4		
Deepestfmtn:	TRVR4	Obj fmtn:	TRVR4
Drillerstd:	1596	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	4
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	SW
Wh q:	SE		
Wh lat:	45.0193037		
Wh long:	-84.7974597		
Wh georef x:	594585.44		
Wh georef y:	497101.89		
Bh georef x:	594585.44		
Bh georef y:	497101.89		
Bh sourceloc:	C		
Bh lat:	45.0193037		
Bh long:	-84.7974597		
Site id:	MIOG80000057642		

**45
West
1/2 - 1 Mile**

OIL_GAS

MIOG80000057926

Api wellno:	21137568420000		
Opno:	6461		
Operator Name:	LINN OPERATING INC		
Operator Status:	Active-		
Operator City:	HOUSTON	Operator State:	TX
Permit no:	56842		
Lease name:	WILD WEST		
Well no:	C3-4		
Deepestfmtn:	TRVR4	Obj fmtn:	Not Reported
Drillerstd:	1450	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	4
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	NW
Wh q:	SE		
Wh lat:	45.0241567		
Wh long:	-84.7980738		
Wh georef x:	594529.38		
Wh georef y:	497641.04		
Bh georef x:	594529.38		
Bh georef y:	497641.04		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.0241567
 Bh long: -84.7980738
 Site id: MIOG80000057926

46
South
1/2 - 1 Mile

OIL_GAS

MIOG80000056953

Api wellno:	21137423620000		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	42362		
Lease name:	STATE HAYES		
Well no:	11-10		
Deepestfmrtn:	TRVR4	Obj fmrtn:	TRVR2
Drillerstd:	1430	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	10
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	NE
Wh q:	SW		
Wh lat:	45.0092708		
Wh long:	-84.781557		
Wh georef x:	595854.86		
Wh georef y:	496006.42		
Bh georef x:	595854.86		
Bh georef y:	496006.42		
Bh sourceloc:	C		
Bh lat:	45.0092708		
Bh long:	-84.781557		
Site id:	MIOG80000056953		

Q47
NW
1/2 - 1 Mile

OIL_GAS

MIOG80000058398

Api wellno:	21137416610000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	41661		
Lease name:	WARD LAND TRUST		
Well no:	C1-34		
Deepestfmrtn:	ANRM	Obj fmrtn:	TRVR
Drillerstd:	1329	Truetd:	0
County:	OTSEGO	Slant:	D
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	SE	Wh qq:	NW
Wh q:	SW		
Wh lat:	45.0323938		
Wh long:	-84.7925624		
Wh georef x:	594949.84		
Wh georef y:	498561.7		
Bh georef x:	594944.48		
Bh georef y:	498688.79		
Bh sourceloc:	C		
Bh lat:	45.03353		
Bh long:	-84.7926		
Site id:	MIOG80000058398		

Q48
NW
1/2 - 1 Mile

OIL_GAS **MIOG80000058390**

Api wellno:	21137416600000		
Opno:	4777		
Operator Name:	O I L ENERGY CORP		
Operator Status:	Active-		
Operator City:	TRAVERSE CITY	Operator State:	MI
Permit no:	41660		
Lease name:	WARD LAND TRUST		
Well no:	D1-34		
Deepestfntn:	TRVR2	Obj fmntn:	TRVR
Drillerstd:	1431	Truetd:	1293
County:	OTSEGO	Slant:	D
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	34
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	SW
Wh q:	SW		
Wh lat:	45.0323479		
Wh long:	-84.7928094		
Wh georef x:	594930.22		
Wh georef y:	498556.96		
Bh georef x:	594939.87		
Bh georef y:	498373.4		
Bh sourceloc:	C		
Bh lat:	45.0307		
Bh long:	-84.79272		
Site id:	MIOG80000058390		

R49
NE
1/2 - 1 Mile

OIL_GAS **MIOG80000058372**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137421480000		
Opno:	6417		
Operator Name:	TERRA ENERGY CO LLC		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	42148		
Lease name:	WALKER		
Well no:	7-35 SWD		
Deepestfmtn:	DRRV	Obj fmtn:	DUND
Drillerstd:	2400	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Brine Disposal Well	Well status:	Active
Source loc:	g	Wh sec:	35
Wh twpn:	31	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	NE
Wh q:	SW		
Wh lat:	45.0321453		
Wh long:	-84.7681511		
Wh georef x:	596872.97		
Wh georef y:	498563.95		
Bh georef x:	596872.97		
Bh georef y:	498563.95		
Bh sourceloc:	C		
Bh lat:	45.0321453		
Bh long:	-84.7681511		
Site id:	MIOG80000058372		

S50
SE
1/2 - 1 Mile

OIL_GAS

MIOG80000057242

Api wellno:	21137446750000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44675		
Lease name:	GURA		
Well no:	B1-11		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	11
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NW	Wh qq:	SW
Wh q:	NW		
Wh lat:	45.01352		
Wh long:	-84.76649		
Wh georef x:	597034.93		
Wh georef y:	496496.16		
Bh georef x:	597034.93		
Bh georef y:	496496.16		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.01352
 Bh long: -84.76649
 Site id: MIOG80000057242

**S51
SE**

OIL_GAS

MIOG80000057243

1/2 - 1 Mile

Api wellno:	21137469980000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46998		
Lease name:	GURA		
Well no:	B1-11		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	11
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NW	Wh qq:	SW
Wh q:	NW		
Wh lat:	45.01352		
Wh long:	-84.76649		
Wh georef x:	597034.93		
Wh georef y:	496496.16		
Bh georef x:	597034.93		
Bh georef y:	496496.16		
Bh sourceloc:	C		
Bh lat:	45.01352		
Bh long:	-84.76649		
Site id:	MIOG80000057243		

R52

NE

OIL_GAS

MIOG80000058433

1/2 - 1 Mile

Api wellno:	21137419920000		
Opno:	6417		
Operator Name:	TERRA ENERGY CO LLC		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	41992		
Lease name:	WALKER		
Well no:	6-35		
Deepestfmtn:	ANRM	Obj fmtn:	ANRM
Drillerstd:	1210	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	35
Wh twpn:	31	Wh twpd:	N

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wh rngn:	4	Wh rngd:	W
Wh qq:	SW	Wh qq:	NE
Wh q:	SW		
Wh lat:	45.0327067		
Wh long:	-84.7681732		
Wh georef x:	596870.45		
Wh georef y:	498626.14		
Bh georef x:	596870.45		
Bh georef y:	498626.14		
Bh sourceloc:	C		
Bh lat:	45.0327067		
Bh long:	-84.7681732		
Site id:	MIOG80000058433		

53
SSE
1/2 - 1 Mile

OIL_GAS **MIOG80000056948**

Api wellno:	21137423610000		
Opno:	6371		
Operator Name:	BREITBURN OPERATING LIMITED PARTNERSHIP		
Operator Status:	Active-		
Operator City:	LOS ANGELES	Operator State:	CA
Permit no:	42361		
Lease name:	STATE HAYES		
Well no:	10-10		
Deepestfntn:	TRVR4	Obj fmntn:	TRVR2
Drillerstd:	1441	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Gas	Well status:	Producing
Source loc:	g	Wh sec:	10
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	NW
Wh q:	SE		
Wh lat:	45.0091828		
Wh long:	-84.7740649		
Wh georef x:	596446.01		
Wh georef y:	496005.32		
Bh georef x:	596446.01		
Bh georef y:	496005.32		
Bh sourceloc:	C		
Bh lat:	45.0091828		
Bh long:	-84.7740649		
Site id:	MIOG80000056948		

T56
SSW
1/2 - 1 Mile

OIL_GAS **MIOG80000056984**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Api wellno:	21137478080000		
Opno:	5017		
Operator Name:	MERCURY EXPLORATION CO		
Operator Status:	Inactive-no active wells at present		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	47808		
Lease name:	WILD WEST		
Well no:	C4-9		
Deepestfmtn:	Not Reported	Obj fmtn:	TRVR4
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	9
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NE	Wh qq:	NE
Wh q:	SE		
Wh lat:	45.00964		
Wh long:	-84.78966		
Wh georef x:	595215.76		
Wh georef y:	496038.05		
Bh georef x:	595215.76		
Bh georef y:	496038.05		
Bh sourceloc:	C		
Bh lat:	45.00964		
Bh long:	-84.78966		
Site id:	MIOG80000056984		

T54
SSW
1/2 - 1 Mile

OIL_GAS

MIOG80000056982

Api wellno:	21137446990000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	44699		
Lease name:	EBLING		
Well no:	C4-9		
Deepestfmtn:	Not Reported	Obj fmtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	9
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qqg:	NE	Wh qq:	NE
Wh q:	SE		
Wh lat:	45.00964		
Wh long:	-84.78966		
Wh georef x:	595215.76		
Wh georef y:	496038.05		
Bh georef x:	595215.76		
Bh georef y:	496038.05		
Bh sourceloc:	C		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Bh lat: 45.00964
 Bh long: -84.78966
 Site id: MIOG80000056982

T55
SSW
1/2 - 1 Mile

OIL_GAS

MIOG80000056983

Api wellno:	21137469590000		
Opno:	4745		
Operator Name:	BELDEN AND BLAKE CORP DBA WARD LAKE ENERGY		
Operator Status:	Active-		
Operator City:	GAYLORD	Operator State:	MI
Permit no:	46959		
Lease name:	EBLING		
Well no:	C4-9		
Deepestfmrtn:	Not Reported	Obj fmrtn:	ANRM
Drillerstd:	0	Truetd:	0
County:	OTSEGO	Slant:	V
Well type:	Location only	Well status:	Terminated Permit
Source loc:	C	Wh sec:	9
Wh twpn:	30	Wh twpd:	N
Wh rngn:	4	Wh rngd:	W
Wh qq:	NE	Wh qq:	NE
Wh q:	SE		
Wh lat:	45.00964		
Wh long:	-84.78966		
Wh georef x:	595215.76		
Wh georef y:	496038.05		
Bh georef x:	595215.76		
Bh georef y:	496038.05		
Bh sourceloc:	C		
Bh lat:	45.00964		
Bh long:	-84.78966		
Site id:	MIOG80000056983		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal Area Radon Information for Zip Code: 49735

Number of sites tested: 7

<u>Area</u>	<u>Average Activity</u>	<u>% <4 pCi/L</u>	<u>% 4-20 pCi/L</u>	<u>% >20 pCi/L</u>
Living Area - 1st Floor	1.800 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.900 pCi/L	71%	29%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory

Source: Department of Natural Resources

Telephone: 517-241-2254

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Data

Source: Department of Environmental Quality

Telephone: 517-335-9218

The data in this file was obtained from Wellogis, the Michigan Department of Environmental Quality Statewide Groundwater Database (SGWD). Wellogis contains approximately 425,000 water well records found within the State of Michigan, and although it represents the best available data, it cannot be considered a complete database of all the wells or well records in existence.

OTHER STATE DATABASE INFORMATION

Michigan Oil and Gas Wells

Source: Department of Environmental Quality

Telephone: 517-241-1528

Locations of oil and gas wells are compiled from permit records on file at the Geological Survey Division (GSD), Michigan Department of Natural Resources.

RADON

State Database: MI Radon

Source: Department of Environmental Quality

Telephone: 517-335-9551

Radon Test Results

Michigan Radon Test Results

Source: Department of Environmental Quality

Telephone: 517-335-8037

These results are from test kits distributed by the local health departments and used by Michigan residents. There is no way of knowing whether the devices were used properly, whether there are duplicates (or repeat verification) test (i.e., more than one sample per home), etc.

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

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Appendix D

Natural Gas Well Records

APPLICATION FOR PERMIT TO: DRILL DEEPEN REWORK OR OPERATE A WELL

742

GEOLOGICAL SURVEY
PERMITS & Bonding Unit
DEC 9 7 1993

MAIL TO:
 MICHIGAN DEPARTMENT OF NATURAL RESOURCES
 GEOLOGICAL SURVEY DIVISION
 BOX 30028, LANSING, MICHIGAN 48209
 NON-SUBMISSION AND/OR FALSIFICATION OF THIS INFORMATION
 MAY RESULT IN FINES AND/OR IMPRISONMENT

BY AUTHORITY OF:

1a. <input checked="" type="checkbox"/> Act 61, P.A. 1939, as amended <input checked="" type="checkbox"/> Oil & Gas <input type="checkbox"/> Brine Disposal <input type="checkbox"/> Hydrocarbon Storage <input type="checkbox"/> Secondary Recovery	1b. <input type="checkbox"/> Act 315, P.A. 1969, as amended <input type="checkbox"/> Disposal <input type="checkbox"/> Storage <input type="checkbox"/> Brine <input type="checkbox"/> <input type="checkbox"/> Test Well Type <input type="checkbox"/> Single <input type="checkbox"/> Blanket
--	---

2. Application to: (no fee required if permit is valid)
 Deepen Revise Application Cancel and Transfer Convert to
 3. Fee enclosed: No Yes
 4. Do prior permits exist? No Yes Drilled Abandoned/Terminated

5. List each permit number: 46962, 44693 (47803)
 6. Fed. Employer Ident. No. or Soc. Security No.: 75-1608586

7. Surety Bond: Blanket Single Well
 8. Attached On File
 9. Bond No.: C.D.#748412111
 10. Bond Amount: \$50,000.00

11. Applicant: (name each "owner" as they are bonded)
 Mercury Exploration Company

12. Address: (operator only if more than one "owner")
 P.O. Box 1256, Gaylord, MI 49735
 Phone: (517) 732-0020

13. Lease or well name: (be as brief as possible)
 Wild West
 Well number: C1-3

14. Surface owner:
 Virginia Ebeling
 Phone: 313-628-3276

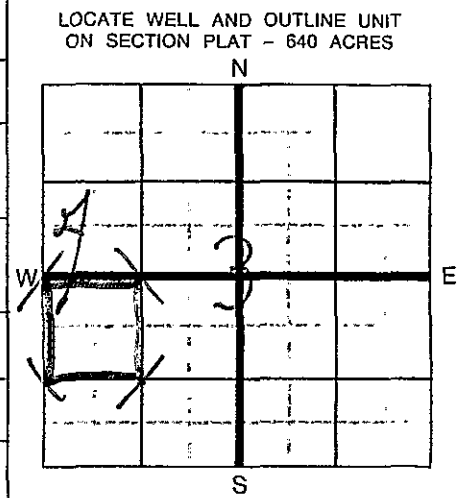
15. Address:
 2999 Lake George Rd., Oxford, MI 48370
 Phone:

16. Surface location (See instructions)
 NW 1/4 NW 1/4 of SW 1/4 of Sec. 3 T. 30N R. 4W
 Township: Hayes County: Otsego

17. Bottom hole location if directional drill (See instructions)
 1/4 1/4 of 1/4 of Sec. T. R.
 Township: County:

18. LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT. (See instructions)

a. Location: Surface 414 ft. from (N/S) North Line of quarter section. AND 455 ft. from (E/W) West Line of quarter section.
 b. Location: Bot. Hole _____ ft. from (N/S) _____ Line of quarter section. AND _____ ft. from (E/W) _____ Line of quarter section.
 c. Unit: Drilling 414 ft. from (N/S) North Line of drilling unit. AND 455 ft. from (E/W) West Line of drilling unit.



19. Drilling contractor: Undetermined
 20. Kind of tools (Rotary, cable, combination): Rotary
 21. Is sour oil or gas expected? No Yes
 22. Blowout control diagram enclosed? No Yes

23. Blowout control (Detail equipment type, size, trim, rating, testing, choke manifold, etc. See instructions)
 See Attached

24. Intended Total Depth: *1700'
 25. Formation at Total Depth: *Traverse Line
 26. Producing Formation: Antrim
 27. Objective Pool or Field: Antrim

28. 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.	
48'	Drift	Driven	13 3/8"	48# Conductor New	48'						
900	Cl dwtr.	12 1/4"	8 5/8"	24# J-55 New	@ 900	394	12	8.8	50	NC	
1700	Trav. Lm	7 7/8"	5 1/2"	15.5# J-55 Used	1700	294	NA	8.6	28	NC	

29. Send correspondence and permit to: Address
 Mercury Exploration Company, P.O. Box 1256, Gaylord, MI 49735

FOR DNR USE ONLY

Permit	Date Issued	Number
Act 61	12-29-93	47803
Act 315		

30. Application Prepared By: (Print) Tom Roach, Jr. Phone: (616) 947-0406
 31. Signature: Tom Roach, Jr. Date: 2 Dec 93

DEC 20 1993
11:00 AM
BENTON & BOWLES

12/20/93

Company has lost
original permit tag. WRL

13316

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 (M.C.L. 319.1 to 319.27)

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.

PERMIT	ISSUED	TYPE OF WELL
47803	07/23/93	OIL OR GAS
CANCEL AND TRANSFER		FORMATION
47803	12/29/93	*TRAVERSE LIMESTONE
DEEPENING PERMIT		DEPTH
		* 1700'
PERMIT EXPIRES		KIND OF TOOLS
	07/23/94	ROTARY
ISSUED TO		
MERCURY EXPLORATION COMPANY PO BOX 1256 720 S. OTSEGO RD. GAYLORD, MI 49735		

WELL NAME
WILD WEST #C1-3

LOCATION AND FOOTAGES:
SHL: NW 1/4 NW 1/4 SW 1/4, Sec 03, 30N 04W, HAYES Twp, OTSEGO Co.
414 ft. from North and 455 ft. from West line of quarter section.
414 ft. from North and 455 ft. from West line of drilling unit.

CASING AND SEALING REQUIREMENTS

O.D. SIZE	WT./FT.	CASING GRADE	CONDITION	DEPTH	CEMENT SACKS	W.O.C. (HRS.)
13 3/8"	48#	CONDUCTOR	NEW	48'	DRIVEN	
8 5/8"	24#	J-55	NEW	@ 900'	394	12
5 1/2"	15.5#	J-55	USED	1700'	294	N/A

- @ Surface casing shall be set at least 100' into competent bedrock or below all fresh water zones, whichever is deeper, and circulated to surface.
- * The "Rat Hole" in the Traverse Lime shall be cased and sealed such that no brine from the Antrim Formation or any other formation is disposed of in the Traverse Lime.
- District Geologist shall be notified prior to pit encapsulation.
- Tubulars or downhole equipment that are classified as NORM materials by Order No. 3-6-92 SHALL NOT be used for the construction of this well.

OFFICE TO BE NOTIFIED BEFORE DRILLING/DEEPENING STARTS
GAYLORD (517) 7323541

BY William Lee
WILLIAM LEE (517) 3346974
PERMIT COORDINATOR

FOR THE SUPERVISOR OF WELLS

SEE REVERSE SIDE FOR ADDITIONAL REQUIREMENTS

THIS PERMIT IS SUBJECT TO THESE GENERAL CONDITIONS

1. Drilling operations shall not start until 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 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 changes 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 SOURCE 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 flares 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 Sulfide 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 manufacture's minimum operational specifications. This certification shall include proper operation of the closing unit valving, pressure gauges, and manufacture'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 Sulfide 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.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION

TRANSMITTAL AND FIELD REVIEW
FOR PROPOSED WELL SITE



- Act 61 PA 1939 as amended.
 Act 315 PA 1969 as amended.

1a. App. No. 118	1b. Revision <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1c. Coordinator K. JEFERTILLER	1d. District Sent To GAYLORD	1e. Date 2-26-91
2. Applicant WARD LAKE DRILLING MERCURY EXPLORATION				
3a. Well Name & No. EBLING *C1-3			3b. For Redrills: Original Permit No.	
4a. Surface Location NW 1/4 NW 1/4 SW 1/4 Sec. 3 T30N R4W HAYES OTSEGO				
4b. Footages 414 ft. from N line of 1/4 sec. 455 ft. from W line of 1/4 sec.				
5a. Mineral Ownership <input checked="" type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal		5b. Surface Ownership <input checked="" type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal <input type="checkbox"/> DJ <input type="checkbox"/> PR		5c. State Lease: No.
5d. Lease Restrictions:		5e. Wellsite Area Local Zoning: <input type="checkbox"/> Residential: Date _____ <input checked="" type="checkbox"/> Other: FOREST RECREATIONAL SEPT. 75		
6. Information and requests: (Spacing, problem areas, etc.) REISSUED: NO NEW REVIEW NEEDED PER M. CROMELL 10-21-92 BITTD 12/9/93 FOR C+T OF PN 47803				

FIELD REVIEW AND RECOMMENDATIONS: Date Received

7. Field Inspected By: Name and Date Mark Cromell 4-19-91	8a. Land use: <input checked="" type="checkbox"/> Crops <input type="checkbox"/> Forests <input type="checkbox"/> Recreation <input checked="" type="checkbox"/> Vacant <input type="checkbox"/> Other _____	8b. Cover Type/Density: Open Field
9. Topography Nearly Level	10. Acreage Involved: Drill Pad: 1.0 Acres Access Road: .10 Acres	
11. Soil type and drainage, field tiles, etc.	Well drained sand	
12. Are soil erosion and sedimentation control measures adequate? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
13. Type, direction & distance to surface waters and waterways including wet lands within 1/4 mile.	none	
14. Nearby scenic, historical or recreational areas:	none	
15. Structures, pipelines, other utility lines within 300 feet of proposed well site.	none	
16. Is proposed method of disposal of produced and drilling brine acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>RECEIVED</p> <p>APR 26 1991</p> <p>DNR - REGION II</p>	
17. Is casing and sealing adequate? Conductor <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Surface <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intermediate <input type="checkbox"/> Yes <input type="checkbox"/> No Production <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
18. Is Special Order #2-73 exception recommended? <input type="checkbox"/> Yes <input type="checkbox"/> No		
19a. H ₂ S Contingency Plan: <input checked="" type="checkbox"/> "Sweet". Plan not required. <input type="checkbox"/> "Sour". Plan required. Complete and accurate? <input type="checkbox"/> Yes <input type="checkbox"/> No	<p>NA</p> <p>FEB 28 91</p>	
19b. H ₂ S production Facilities & Flare Stack S.I. No. 2-87 apply? <input type="checkbox"/> Yes <input type="checkbox"/> No Other? <input type="checkbox"/> Yes <input type="checkbox"/> No		
20. Pumping Jack Prime Mover: Require electric? <input type="checkbox"/> Yes <input type="checkbox"/> No	<p>NA</p>	

Discuss RECOMMENDATIONS with applicant before forwarding to Lansing

<p>21. Source of freshwater: (Describe if other)</p> <input type="checkbox"/> Surface Water <input checked="" type="checkbox"/> Exclusive Use <input type="checkbox"/> Potable Well <input type="checkbox"/> Municipal <input type="checkbox"/> Other	<p>1. Surface water from lakes, streams, wetlands, or other sources shall not be utilized for drilling fluids.</p>	
<p>22. Drilling pit requirements:</p> <p>a. Forbidden! Use mud tanks only? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>2. The annulus of the washhole and mousehole shall be backfilled with soil and at least the top two feet sealed with bentonite or an approved equivalent.</p>	
<p>b. Specific placement required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>3. Pans or 20-mil PVC liners with perimeter dikes shall be placed under the rig, mud system and storage tanks; and constructed and maintained such that contained fluids do not discharge to the ground.</p>	
<p>c. Relocate pit for burial? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>		
<p>d. Pit liner exception? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>		
<p>e. Salt cuttings to be: (Give Details)</p> <input type="checkbox"/> Dissolved <input type="checkbox"/> Removed for disposal <input checked="" type="checkbox"/> None		
<p>f. District Geologist to be notified prior to:</p> <p>Excavation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Liner installation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Encapsulation <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>		
<p>23. Wildlife/Fisheries/Forest Management's comments:</p>		
<p>24. Items continued and/or not covered above (attach additional sheets if needed): (B.O.P.'s etc.)</p>		
<p>25a. Permits Needed:</p> <input type="checkbox"/> Wetlands <input type="checkbox"/> Inland lakes and streams <input type="checkbox"/> County drain crossing <input type="checkbox"/> Other _____		
<p>25b. Company Agent contacted regarding recommendations/deficiencies/non Act 61 requirements:</p>	<p>Date</p>	<p>Telephone No.</p>
<p>26. Revisions En Route? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>		
<p>27. District: Recommend a permit: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Memo:</p> <p style="text-align: center;">  <i>Area Geologist</i> 4-23-91 Signature Title Date </p>		
<p>28. Land Manager: Recommend a permit: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Memo:</p> <p style="text-align: center;"> _____ Signature Title Date </p>		
<p>29. Region: Recommend a permit: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Memo:</p> <p style="text-align: center;">  ASSISTANT DEPUTY DIRECTOR APR 30 1991 Signature Title Date </p>		

SURVEY RECORD OF WELL LOCATION

Act 61, P.A. 1939, as amended. Act 315, P.A. 1969, as amended.
 Filing of Survey Record, Plat or Plot Plan and Environmental Impact Assessment with Application
 for Permit to Drill are REQUIRED by the above listed Acts, in order to obtain a Permit.

APPLICANT Ward Lake Drilling, Inc. Mercury Expl.	WELL NAME AND NUMBER EBLING NO. C1-3
SURFACE LOCATION NW 1/4 of NW 1/4 of SW 1/4 of Section 3 T 30N R 4W Hayes	TOWNSHIP COUNTY Utsyo
BOTTOM HOLE LOCATION % of % of % of Section T R	COUNTY

Instructions: Outline drilling unit and spot well location on Plat shown below (1). 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 (whichever applies). Outline the Unit and locate the well in two directions from NEAREST quarter section and unit lines (For Act 61, P.A. 1939, as amended).

2. Location of well in two directions from NEAREST quarter section and unit lines is (For Act 61, P.A. 1939, as amended):

Surface Location:

414 ft. from North line of Quarter Section
(north-south)

455 ft. from West line of Quarter Section
(east-west)

Bottom Hole Location:

_____ ft. from _____ line of Quarter Section
(north-south)

_____ ft. from _____ line of Quarter Section
(east-west)

Bottom Hole Will Be:

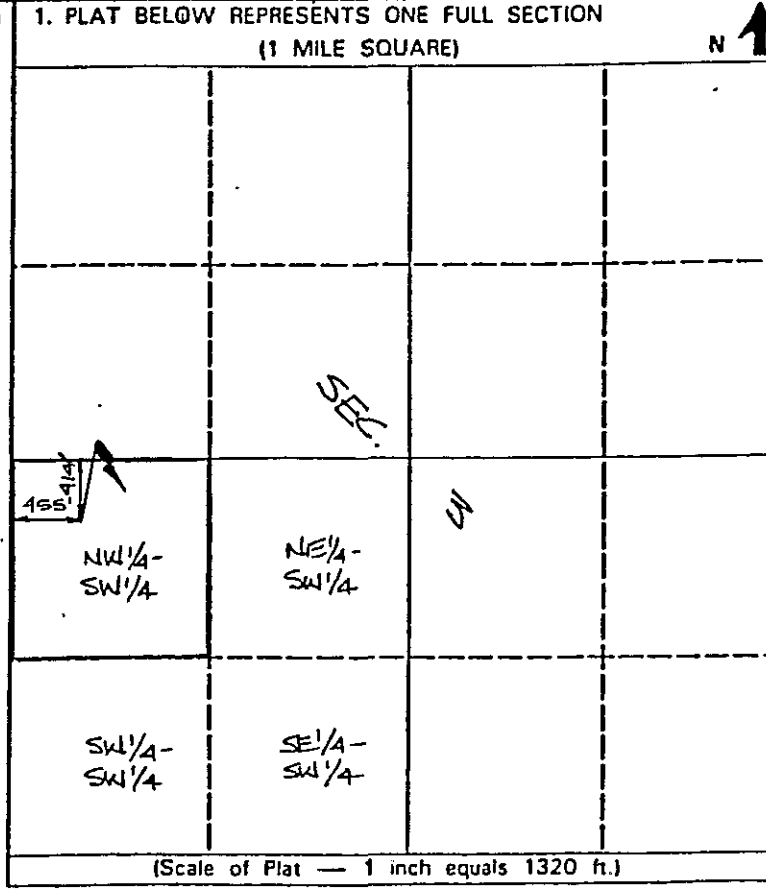
414 ft. from North line of unit/property (Act 315) lease
(north-south)

455 ft. from West line of unit/property (Act 315) lease
(east-west)

3a. Describe wellsite marker. Show or describe access route if it is not readily accessible.
Wellsite is marked with a wooden stake with an orange survey ribbon. Access can be made from the West off Coppens Road to the proposed location.
 (SEE SUPPLEMENTAL PLAT)

3b. Zoning. Residential Other: FOREST RECREATIONAL

3c. Effective date: 9/75



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

A. All roads, power lines, residences, farm buildings, and other structures within 300 feet of the stake.

B. 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 on detailing plans, for hazards prevention and erosion control (See instructions and guidelines for preparation of an environmental impact assessment).

NAME OF INDIVIDUAL WHO SURVEYED TITLE DATE

Robert F. Mitchell *[Signature]* February 8, 1991

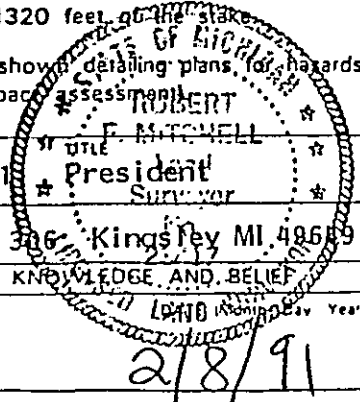
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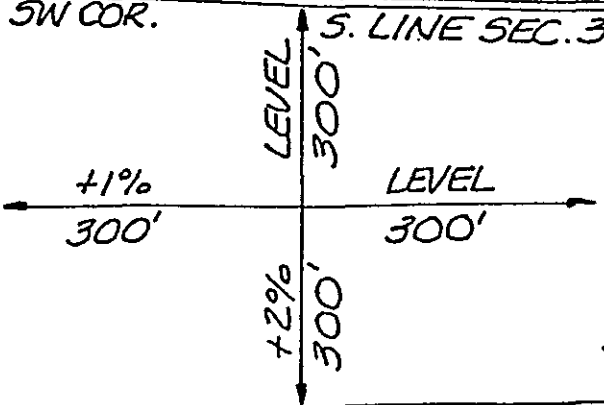
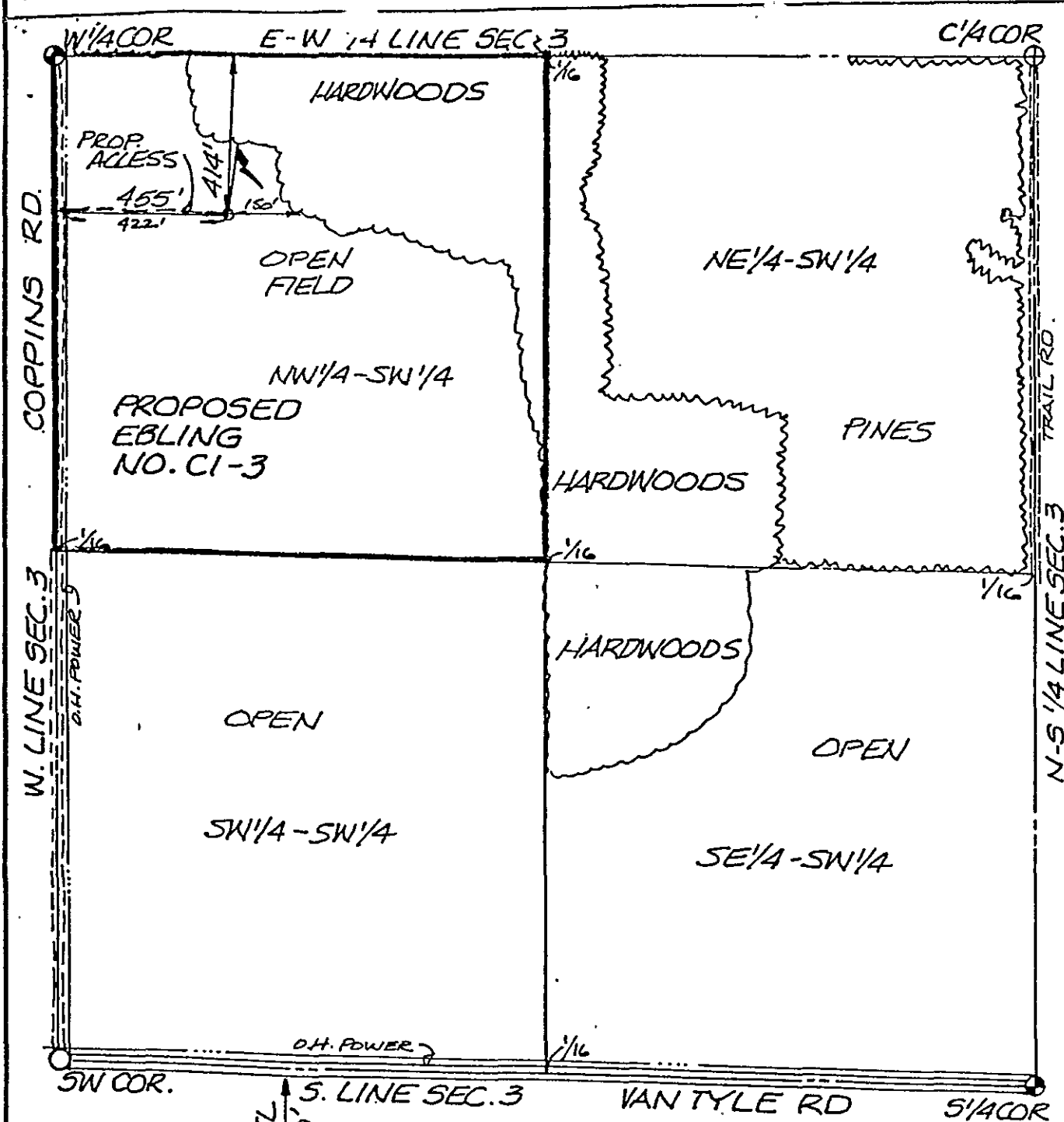
MITCHELL & ASSOCIATES, P.C., 4961 Garfield Road So., P.O. Box 306 Kingsley MI 49689

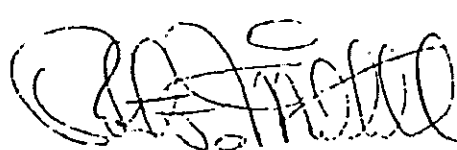
I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF

SIGNATURE (Applicant or authorized representative) ADDRESS (if different than Lessee)

[Signature] _____






ROBERT F. MITCHELL
 L.L.S. NO. 28417



MITCHELL & ASSOCIATES, P.C.

LAND SURVEYORS & ENGINEERS
 P.O. BOX 308
 4041 GARFIELD ROAD SOUTH
 KINGSLEY, MICHIGAN 49640
 (616) 263-5483
 (800) 533-8627
 FAX (616) 263-7021

CLIENT: **WARD LAKE DRILLING, INC.**

PROPOSED "EBLING NO. CI-3"
SEC. 3, T30N-R4W, HAYES
TWP, OTSEGO CO, MI
HAYES 3 LEASE

FILE NO. 90850
PK. 141 PG. 10
DRAWN BY: [Signature]
DATE: 10-19-99
OR P.C. SHEET 1 of 1

OIL AND GAS OPERATIONS
STATE OF MICHIGAN
ENVIRONMENTAL IMPACT ASSESSMENT

Well Identification

Name of Applicant: Mercury Exploration Company
Address: P.O. Box 1256
Gaylord, Michigan 49735

Well Name and Number: Wild West #C1-3
Location: NW NW SW Section 3
T 30 N, R 4 W, Hayes Twp.
Otsego Co., MI

I. Description Of Project

Applicant proposes to drill the above well for the purpose indicated below involving the following site-specific information:

Purpose: Testing and possible production of natural gas from the Antrim formation.

Surface and Bottom Hole Footages: Same as indicated on attached Application For Permit To Drill. Surface elevation to be provided to Lansing DNR within first 14 days of drilling.

Drilling and Producing Unit: Same as indicated on attached Application For Permit To Drill.

Surface Ownership: Same as indicated on attached Application For Permit To Drill.

Mineral Ownership: Private

Statement of Notification: Landowners have been advised by phone of our intention to drill this well. See attached contact sheet.

Access to Location and Anticipated Pipeline Routes: Same as indicated on attached Project Plan Map and/or Supplemental Plat.

Wellsite Topography: See attached Supplemental Plat.

II. ENVIRONMENTAL IMPACT ASSESSMENT

A cleared and level area, approximately 200 feet by 200 feet, will be required for drilling and producing this well. Trees of timber or firewood quality which must be cut will be stacked at the edge of the location, and any associated brush and stumps will be buried onsite. All retrievable topsoil will be stripped and saved. Earthen berms will be constructed along the fill sides of the site and all slopes will be maintained to minimize potential for offsite erosion and sedimentation. The reserve pit will be constructed in the cut portion of site. The construction and occupation of this site for drilling and production should not cause significant or irreparable offsite erosion and sedimentation.

Upon determination by the applicant that the well is either non-productive or no longer capable of economic production, the well will be plugged and abandoned in accordance with DNR instructions. If the well is productive, all production will be transported offsite via pipeline and/or truck. As soon as the well is plugged and conditions are favorable, site contours will be restored to as near original condition as is practical. Any retrievable topsoil will be redistributed, seeded and stabilized as needed in accordance with DNR seeding specifications.

The proposed wellsite is isolated from human habitation and regional surface water features. There are no threatened or endangered species known to exist in the immediate area. Drilling and production operations will be conducted prudently and in accordance with all applicable rules and regulations. The drilling and operation of a well at this location should result in negligible adverse environmental impact of the surrounding environment. Drilling and operation of a producing well at this site should have no effect on human health, welfare and future population patterns.

III. PROCEDURES FOR HANDLING DRILLING FLUIDS AND SOLIDS

To protect soil and groundwater from possible contamination during drilling, a single 20 mil PVC lined reserve pit, sealed cellar and rat hole will be utilized to contain all drilling fluids and solids in conformance with Supervisor of Wells Instruction 1-84. All salt cuttings will be dissolved in water and circulated as brine to the reserve pit. Following completion of drilling operations, all retrievable liquids will be removed by a licensed industrial waste hauler and transported to an approved salt water disposal well.

All residual fluids, muds and cuttings will be encapsulated by folding in the reserve pit liner, overlying the pit with a 10 mil PVC top liner to shed precipitation, and burying to a minimum depth of four feet below finished grade.

Chlorinated fresh water will be used while drilling and setting casing through all fresh water aquifers. Chlorinated fresh water will be either trucked in from a commercial source or made up onsite using a temporary water well. Installation of a temporary water well would be intended for drilling purposes only, not human consumption, and would be installed, plugged and abandoned pursuant to DNR guidelines.

IV. METHOD OF BRINE WATER DISPOSAL AND SECONDARY CONTAINMENT

Brines and liquid hydrocarbons produced from this well will be either stored onsite or transported via pipeline to a central production and/or disposal facility. Loading areas, tanks and associated piping for storage of brines and liquid hydrocarbons will be constructed, operated and monitored in accordance with Supervisor of Wells Instruction 1-89. Brines will be either transported directly to an approved salt water disposal well via pipeline or trucked by a licensed industrial waste hauler to either an approved salt water disposal well or other location as approved by the Supervisor of Wells.

V. POSSIBLE ALTERNATIVE TO PROPOSED WELL LOCATION

The proposed location was selected based on geological interpretation, DNR well spacing requirements and site reconnaissance. There are no alternate sites available which are superior to the proposed location for maximum potential for geological success and minimal waste and surface disturbance.

VI. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Hydrocarbon exploration and production remains a necessary pursuit and responsibility. As a non-renewable resource, the consumption of hydrocarbons results in the irreversible and irretrievable commitment of resources. However, surface lands involved in drilling and producing the proposed well will not be irreversibly or irretrievably committed beyond the productive life of the well, nor will use of adjacent lands be significantly affected or limited.

VII. SUMMARY

The proposed location was selected as the best site available to drill and operate the proposed well. The well will be drilled and operated in compliance with all applicable DNR rules and regulations. Every effort will be made to safeguard the environment during operations. The overall, longterm environmental impact of this project should be minimal.

Respectfully submitted,



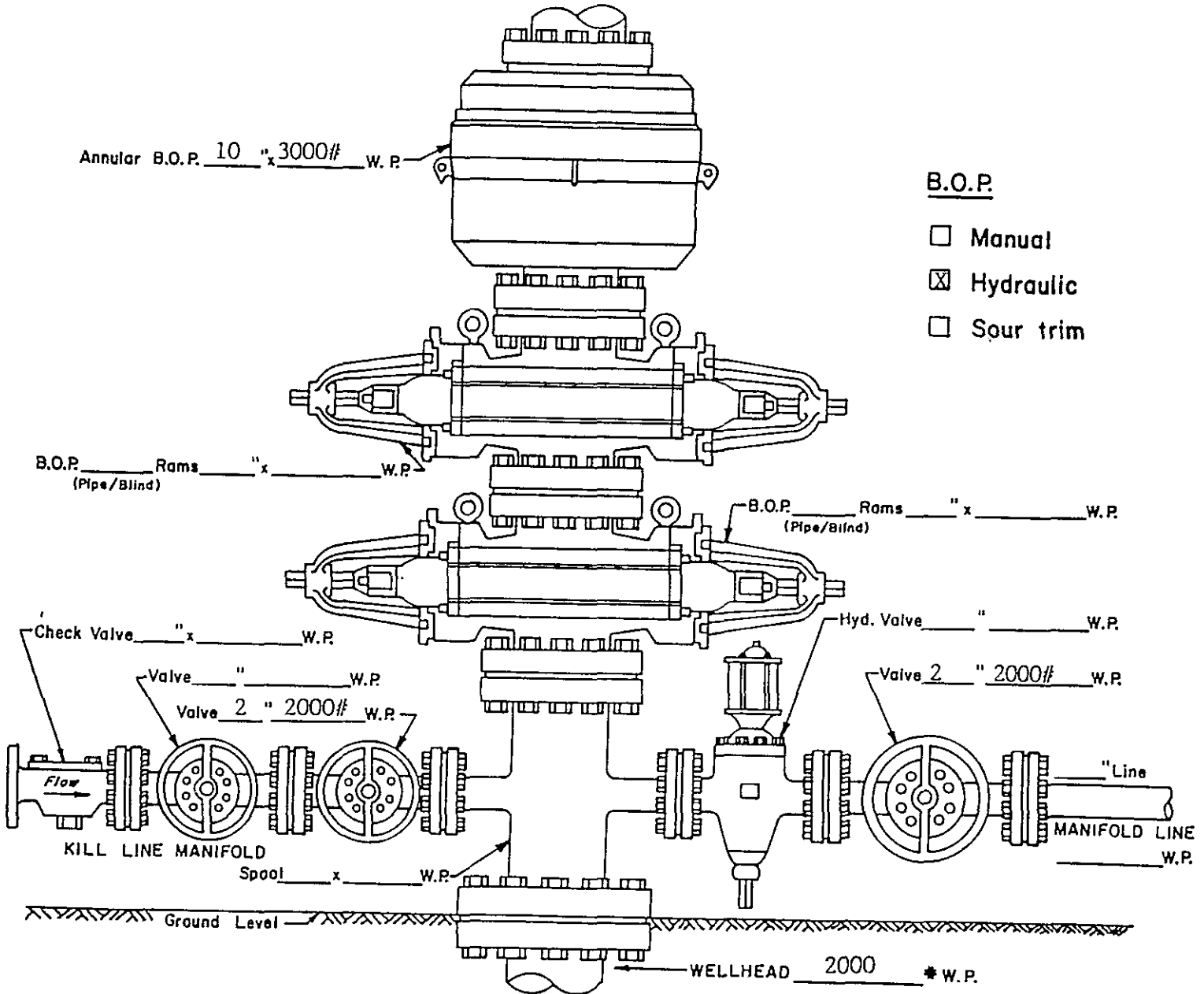
Tom Roach, Jr.
Applicant's Representative

WELLHEAD BLOWOUT CONTROL SYSTEM

Optional worksheet supplement for "Application For Permit to Drill Deepen Rework, or Operate a Well By Authority of Act 61 P.A. 1939 as amended or Act 315. P.A. 1969, as amended"

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

COMPANY Mercury Exploration Company	WELL NAME AND NUMBER Wild West #C1-3
LOCATION NW NW SW Section 3 , T 30 N, R 4 W, Hayes Twp., Otsego Co., MI	



Fill blanks with applicable information. If not applicable, enter "N.A." or cross-out item shown. Enter other pertinent information below.

MERCURY'S "WILD WEST" PROSPECT

CONTACT SHEET

Township 30 North - Range 4 West
Sections 3, 4, 5, 9, 10 and

Township 31 North - Range 4 West
Section 33

Otsego County, Michigan

1. C3-3 Surface owner: Thomas Drysdale
Mineral owner: as above
Date first contacted - 8/24/93
Contacted by: Rodney Schoolcraft
2. ✓ C1-3 Surface owner: Virginia Ebeling
D2-3 Mineral owner: as above
C4-9 Date first contacted - 8/24/93
D1-10 Contacted by: Rodney Schoolcraft
3. D3-4 Surface owner: Stanley Sanders
Mineral owner: as above
Date first contacted - 8/27/93
Contacted by: Rodney Schoolcraft
4. C1-4 Surface owner: Edwin Estelle
B1-5 Mineral owner: as above
D1-33 Date first contacted - 8/24/93
Contacted by: Rodney Schoolcraft
5. D4-5 Surface owner: Arthur Surprenant
Mineral owner: L&L Verville Partnership
Date first contacted - 8/25/93 (SURFACE OWNER)
Contacted by: Rodney Schoolcraft
6. C2-5 Surface owner: Clare Warner
Mineral owner: as above
Date first contacted - 8/24/93
Contacted by: Rodney Schoolcraft
7. D1-5 Surface owner: Chester Skop
Mineral owner: Clare Warner
Date first contacted - 8/24/93 (SURFACE OWNER)
Contacted by: Rodney Schoolcraft
8. D2-9 Surface owner: Northern Michigan Exploration Company
Mineral owner: as above
Date first contacted - 9/17/93
Contacted by: Todd Limbocker
9. B1-9 Surface owner: Martha Barbara, fna Martha Stearns
Mineral owner: as above
Date first contacted - 8/24/93
Contacted by: Rodney Schoolcraft
10. D3-33 Surface owner: Arthur Estelle
D4-33 Mineral owner: as above
Date first contacted - 8/25/93
Contacted by: Rodney Schoolcraft

CJT

DRILLING PERMIT APPLICATION FLOW SHEET

APPLICANT Mercury Exploration NUMBER 742
WELL NAME Wild West C1-3 DATE REC'D 12-7-93
VENDOR # 5017 NEW VENDOR [] ORGANIZATIONAL CHART REC'D []

[] Ck cashier (Ch#/Bank/City) _____
FEE [] Deepening
[] Revision
[] C & T Tag enclosed 47803 - TAG LOST!
SAME SURFACE AS PN 46962 (WARD LAKE - TERM 11-3-92)

BOND [] Single Well [] Surety [] C.D. [] L.C. [] Cash
[] Blanket Bond Number 0740412111

DRILLING UNIT [] S.O. 1-73 [] S.O. 1-86 [] Statement of control of unit
[] 10-12-87 [] Sub 330
[] General Rules Conflicts _____
[] Field Spacing Order _____
[] Voluntary pooling [] Admin. Approval [] Pooling Doc's

LOCATION [] Survey [] Certification of Elevation to be Run
[] Directional Plans
[] Posted on Map Zoning FOREST/RECREATIONAL [] S.I. 2-37

CASING SEALING [] Rotary [] Cable [] Combination
[] Int. Csg. S.O. 2-73 [] 30% Exception [] Short Int Exc
[] Through Gas Storage S.O. 1-87
[] BOP

SURFACE/MINERAL OWNERSHIP [] Private Surface, Notified by [] Statement ^{by phone} [] Letter
[] State Surface
[] State Minerals Lease # _____ Restrictions _____
[] Real Estate Emp. Contacted _____ Date _____
[] Real Estate Approval by _____ Date _____
[] Federal [] Copy to MMS [] Copy to USFS [] USFS Approval

H₂S [] Copy to H₂S Unit [] Sweet [] Sour
[] Contingency Plan Acceptable _____

EIA REVIEW [] Special Order 1-81 [] Supervisor Letter 1-84 _____
[] Remote Pit Required [] Landowner Approval _____
[] Water Well [] Temp. [] Perm. [] Surface [] Trucked
[] EIA Acceptable Deficiencies _____
[] Field Review Rec'd
No new review necessary per M. Connor 12-9-93

DISTRIE. [] Confidential Request [] Copy to Northville, Plymouth, Canton Twp
[] Copy to Subsurface and Petroleum Geology Unit
[] Transmittal to District GAYLORD Copy to _____
[] Transmittal to Region _____

Ready to
CJT
12/10/93

MISC. [] Public Hearing Pending _____
[] Permits Hold [] Other Compliance _____
[] Other Problems _____

REVIEWER: WRL DATE SENT TO FIELD: Issued 12-29-93 [] F.T. ENTRY

APPLICATION FOR PERMIT TO: DRILL DEEPEN REWORK OR OPERATE A WELL

1368

MAIL TO:
MICHIGAN DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
BOX 30028, LANSING, MICHIGAN 48909

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

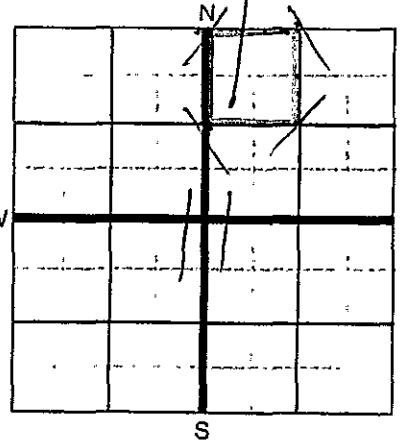
BY AUTHORITY OF:

- 1a. Act 61, P.A. 1939, as amended
 Oil & Gas
 Brine Disposal
 Hydrocarbon Storage
 Secondary Recovery
- 1b. Act 315, P.A. 1969, as amended
 Disposal Storage
 Brine
 Test Well Type
 Single Blanket

2. Application to: (no fee required if permit is valid)
 Deepen Revise Application Cancel and Transfer Convert to
 3. Fee enclosed: No Yes
 4. Do prior permits exist? No Yes Drilled Abandoned/Terminated

5. List each permit number
 6. Fed. Employer Ident. No. or Soc. Security No.
 75-1608586
 7. Surety Bond:
 Blanket Single Well
 8. Attached On File
 9. Bond No.
 C.D. #748412111
 10. Bond Amount:
 \$50,000.00

LOCATE WELL AND OUTLINE UNIT
ON SECTION PLAT, 640 ACRES



11. Applicant: (name each "owner" as they are bonded)
Mercury Exploration Company
 12. Address: (operator only if more than one "owner")
P.O. Box 1256, Gaylord, MI 49735
 Phone: **(517) 732-0020**

13. Lease or well name: (be as brief as possible)
Frederic V
 Well number: **A3-11**
 14. Surface owner:
George Hamilton
 15. Address:
10437 Fairview, Taylor, MI 48180
 Phone: **313-291-0813**

16. Surface location (See instructions)
SW 1/4 NW 1/4 of NE 1/4 of Sec. 11 T.28N R.4W
 Township **Frederic** County **Crawford**
 17. Bottom hole location if directional drill (See instructions)
 Township County

18. LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT. (See instructions)
 Surface **990** ft. from (N/S) **North** Line of quarter section. AND **625** ft. from (E/W) **West** Line of quarter section.
 Bot. Hole
 b. Location: _____ ft. from (N/S) _____ Line of quarter section. AND _____ ft. from (E/W) _____ Line of quarter section.
 Drilling **330** ft. from (N/S) **South** Line of drilling unit. AND ~~625~~ **625** ft. from (E/W) ~~West~~ **West** Line of drilling unit.

19. Drilling contractor:
Indril
 20. Kind of tools (Rotary, cable, combination)
Rotary
 21. Is sour oil or gas expected?
 No Yes
 22. Blowout control diagram enclosed?
 No Yes

23. Blowout control (Detail equipment type, size, trim, rating, testing, choke manifold, etc. See instructions)
See Attached

24. Intended Total Depth ***2400'**
 25. Formation at Total Depth ***Traverse Lime**
 26. Producing Formation **Antrim**
 27. Objective Pool or Field **Antrim**

28. 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.
48'	Drift	Driven	13 3/8"	48# Conductor New	48'	Driven				
985	Cldwtr.	12 1/4"	8 5/8"	24# J-55 New	985	414	12	8.8	50	NC
2400	Trav. Lm	7 7/8"	5 1/2"	15.5# J-55 Used	2400	411	NA	8.6	28	NC

29. Send correspondence and permit to: Address
Mercury Exploration Company, P.O. Box 1256, Gaylord, MI 49735

FOR DNR USE ONLY
 Permit _____ Date Issued **7-23-93** Number **47803**
 30. Application Prepared By: (Print) **Tom Roach, Jr.** Phone: **(616) 947-0406**
 31. Signature: *Tom Roach, Jr.* Date: **7/18/93**

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

DEPOSITED
 IN THE
 OFFICE OF THE
 CLERK OF THE
 SUPERIOR COURT
 IN THE COUNTY OF
 CRAWFORD
 MICHIGAN
 JULY 23 1993

12947

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 (M.C.L. 319.1 to 319.27)

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.

PERMIT	ISSUED	TYPE OF WELL
47803	07/23/93	OIL OR GAS
CANCEL AND TRANSFER		FORMATION
		*TRAVERSE LIMESTONE
DEEPENING PERMIT		DEPTH
		* 2400'
PERMIT EXPIRES		KIND OF TOOLS
	07/23/94	ROTARY
ISSUED TO		
MERCURY EXPLORATION COMPANY		
PO BOX 1256		
1260 OLD HIGHWAY 27 SOUTH (REAR)		
GAYLORD, MI 49735		

WELL NAME

FREDERIC V #A3-11

LOCATION AND FOOTAGES:

SHL: SW 1/4 NW 1/4 NE 1/4, Sec 11, 28N 04W, FREDERIC Twp, CRAWFORD Co.
990 ft. from North and 625 ft. from West line of quarter section.
330 ft. from South and 625 ft. from West line of drilling unit.

CASING AND SEALING REQUIREMENTS

O.D. SIZE	WT./FT.	CASING GRADE	CONQITION	DEPTH	SACKS	CEMENT	W.O.C. (HRS.)
13 3/8"	48#	CONDUCTOR	NEW	48'	DRIVEN		
8 5/8"	24#	J-55	NEW	@ 985'	414		12
5 1/2"	15.5#	J-55	USED	2400'	411		N/A

- @ Surface casing shall be set at least 100' into competent bedrock or below all fresh water zones, whichever is deeper, and circulated to surface.
- * The "Rat Hole" in the Traverse Lime shall be cased and sealed such that no brine from the Antrim Formation or any other formation is disposed of in the Traverse Lime.
- District Geologist shall be notified prior to pit encapsulation.
- 2'-3' Perimeter dikes are to be constructed around pad and maintained for the life of the well if productive.
- Tubulars or downhole equipment that are classified as NORM materials by Order No. 3-6-92 SHALL NOT be used for the construction of this well.

OFFICE TO BE NOTIFIED BEFORE DRILLING/DEEPENING STARTS

HOUGHTON LAKE (517) 4225192

BY

William Lee

WILLIAM LEE (517) 3346974 PERMIT COORDINATOR

FOR THE SUPERVISOR OF WELLS

SEE REVERSE SIDE FOR ADDITIONAL REQUIREMENTS

THIS PERMIT IS SUBJECT TO THESE GENERAL CONDITIONS

1. Drilling operations shall not start until 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 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 changes 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 SOURCE 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 flares 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 Sulfide 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 manufacture's minimum operational specifications. This certification shall include proper operation of the closing unit valving, pressure gauges, and manufacture'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 Sulfide 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.

1a. App. No. 1368	1b. Revision <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1c. Coordinator LEE	1d. District Sent To GAYLORD	1e. Date 9-28-92
2. Applicant MERCURY EXPLORATION Co.				
3a. Well Name & No. FREDERIC V #A3-11			3b. For Redrill: Original Permit No.	
4a. Surface Location SW 1/4 NW 1/4 NE 1/4 Sec. 11 T28N R4W FREDERIC CRAWFORD				
4b. Footages 990 ft. from N1/8 line of 1/4 sec. 625 ft. from W1/4 line of 1/4 sec.				
5a. Mineral Ownership <input checked="" type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal		5b. Surface Ownership <input checked="" type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal <input type="checkbox"/> DJ <input type="checkbox"/> PR		5c. State Lease: No.
6. Information and requests: (Spacing, problem areas, etc.) FRED 5		5d. Wellsite Area Local Zoning: <input type="checkbox"/> Residential: Date _____ <input checked="" type="checkbox"/> Other: RESOURCE DEV. - EXTRACTION		

FIELD REVIEW AND RECOMMENDATIONS: Date Received

7. Field Inspected By: Name and Date J. DEXTER 7/1/93	8a. Land use: <input type="checkbox"/> Crops <input checked="" type="checkbox"/> Forests <input type="checkbox"/> Recreation <input type="checkbox"/> Vacant <input type="checkbox"/> Other _____	8b. Cover Type/Density: MED DENSE ASPEN AND BALSAM
9. Topography GENTLY ROLLING	10. Acreage Involved: Drill Pad: 200' x 200' Acres Access Road: 10' x 300' Acres	
11. Soil type and drainage, field tiles, etc.	SANDY, WELL-DRAINED	
12. Are soil erosion and sedimentation control measures adequate? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
13. Type, direction & distance to surface waters and waterways including wet lands within 1/4 mile.	CREEK 450' WEST	
14. Nearby scenic, historical or recreational areas:	NONE	
15. Structures, pipelines, other utility lines within 300 feet of proposed well site.	NONE	
16. Is proposed method of disposal of produced and drilling brine acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
17. Is casing and sealing adequate? Conductor <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Surface <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intermediate <input type="checkbox"/> Yes <input type="checkbox"/> No Production <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	RECEIVED Permits & Bonding Unit JUL 22 1993	
18. Is Special Order #2-73 exception recommended? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	RECEIVED JUL 2 1993 DNR - REGION II	
19a. H ₂ S Contingency Plan: <input checked="" type="checkbox"/> "Sweet". Plan not required. <input type="checkbox"/> "Sour". Plan required. Complete and accurate? <input type="checkbox"/> Yes <input type="checkbox"/> No	RECEIVED SEP 30 1992 GAYLORD OFFICE	
19b. H ₂ S production Facilities & Flare Stack S.I. No. 2-87 apply? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Other? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
20. Pumping Jack Prime Mover: Require electric? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

Discuss RECOMMENDATIONS with applicant before forwarding to Lansing

21. Source of freshwater: (Describe if other)
 Surface Water Exclusive Use
 Potable Well Municipal
 Other

22. Drilling pit requirements:
a. Forbidden! Use mud tanks only?
 Yes No

b. Specific placement required?
 Yes No

c. Relocate pit for burial?
 Yes No

d. Pit liner exception?
 Yes No

e. Salt cuttings to be: (Give Details)
 Dissolved
 Removed for disposal
 None

f. District Geologist to be notified prior to:
Excavation Yes No
Liner installation Yes No
Encapsulation Yes No

23. Wildlife/Fisheries/Forest Management's comments:

Recommend silt/pad containment of drilling fluids to prevent stream contamination.
~~Pad~~ Pad construction should not encroach any further to stream. ⁷⁻¹⁴⁻⁹³
Abeuel fish bio

24. Items continued and/or not covered above (attach additional sheets if needed): (B.O.P.'s etc.)

Perimeter DIKING SHALL BE MAINTAINED FOR the life of the well.

25a. Permits Needed:
 Wetlands
 Inland lakes and streams
 County drain crossing
 Other _____

NONE

25b. Company Agent contacted regarding recommendations/deficiencies/non Act 61 requirements:

Date

Telephone No.

26. Revisions En Route?
 Yes No

27. District: Recommend a permit: Yes No See Memo:

Jeffrey A. Duth
Signature

AREA GEOLOGIST
Title

7-1-93
Date

28. Land Manager: Recommend a permit: Yes No See Memo:

Signature

Title

Date

29. Region: Recommend a permit: Yes No See Memo:

D. J. [Signature]
Signature

DEPUTY DIRECTOR
Title

JUL 20 1993
Date

STATE OF MICHIGAN
SURVEY RECORD OF WELL LOCATION

Act 61, P.A. 1939, as amended. Act 315, P.A. 1969, as amended.

Filing of Survey Record, Plat or Plot Plan and Environmental Impact Assessment with Application for Permit to Drill are REQUIRED by the above listed Acts, in order to obtain a Permit.

APPLICANT <u>MERCURY EXPLORATION</u>	WELL NAME AND NUMBER <u>FREDERIC II NO. A3-11</u>
SURFACE LOCATION <u>SE 1/4 of NW 1/4 of NE 1/4 of Section 3</u> T <u>28N</u> R <u>4W</u>	TOWNSHIP COUNTY <u>FREDERIC CRAWFORD</u>
BOTTOM HOLE LOCATION 1/4 of 1/4 of 1/4 of Section T R	TOWNSHIP COUNTY

Instructions: Outline drilling unit and spot well location on Plat shown below (1.). 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 (whichever applies). Outline the Unit and locate the well in two directions from NEAREST quarter section and unit lines (For Act 61, P.A. 1939, as amended).

2. Location of well in two directions from NEAREST quarter section and unit lines is (For Act 61, P.A. 1939, as amended):

Surface Location:

990' ft. from NORTH line of Quarter Section
(north-south)

625' ft. from West line of Quarter Section
(east-west)

Bottom Hole Location:

_____ ft. from _____ line of Quarter Section
(north-south)

_____ ft. from _____ line of Quarter Section
(east-west)

Bottom Hole Will Be:

330' ft. from SOUTH line of unit/property (Act 315) lease
(north-south)

625' ft. from West line of unit/property (Act 315) lease
(east-west)

3a. Describe wellsite marker. Show or describe access route if it is not readily accessible.

1 WOOD HUB # 3 LATH

RESOURCE - DEVELOPMENT - EXTRACTION

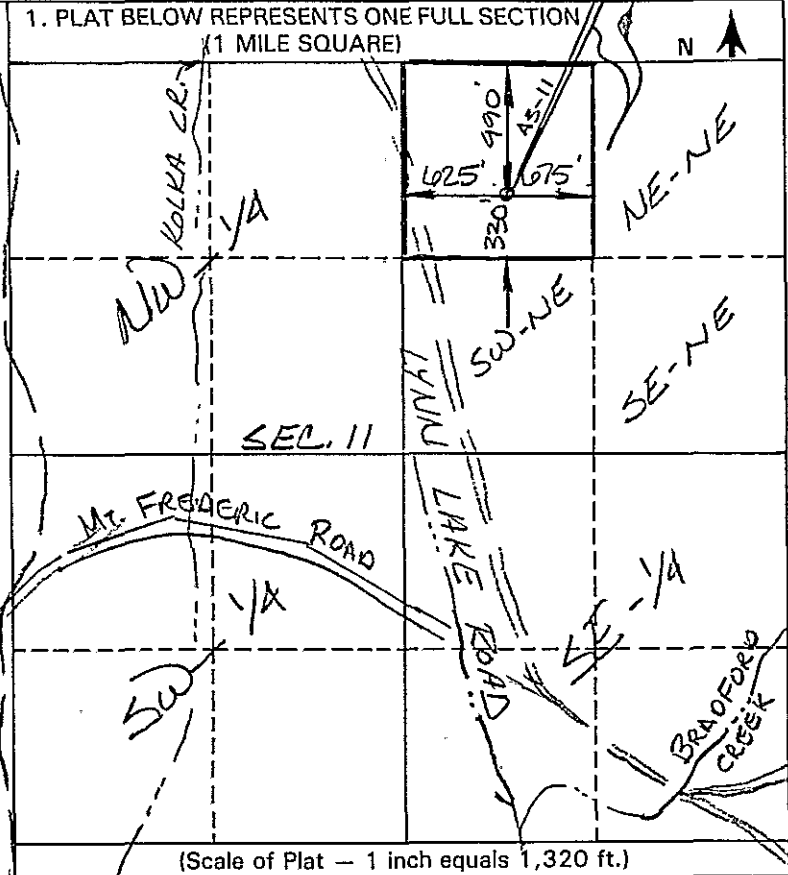
3b. Zoning Residential Other: _____

3c. Effective date: MAY 1990

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

- A. All roads, power lines, residences, farm buildings, and other structures within 300 feet of the stake.
- B. All lakes, streams, swamps, drainage-ways or any other surface water features within 1,320 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).

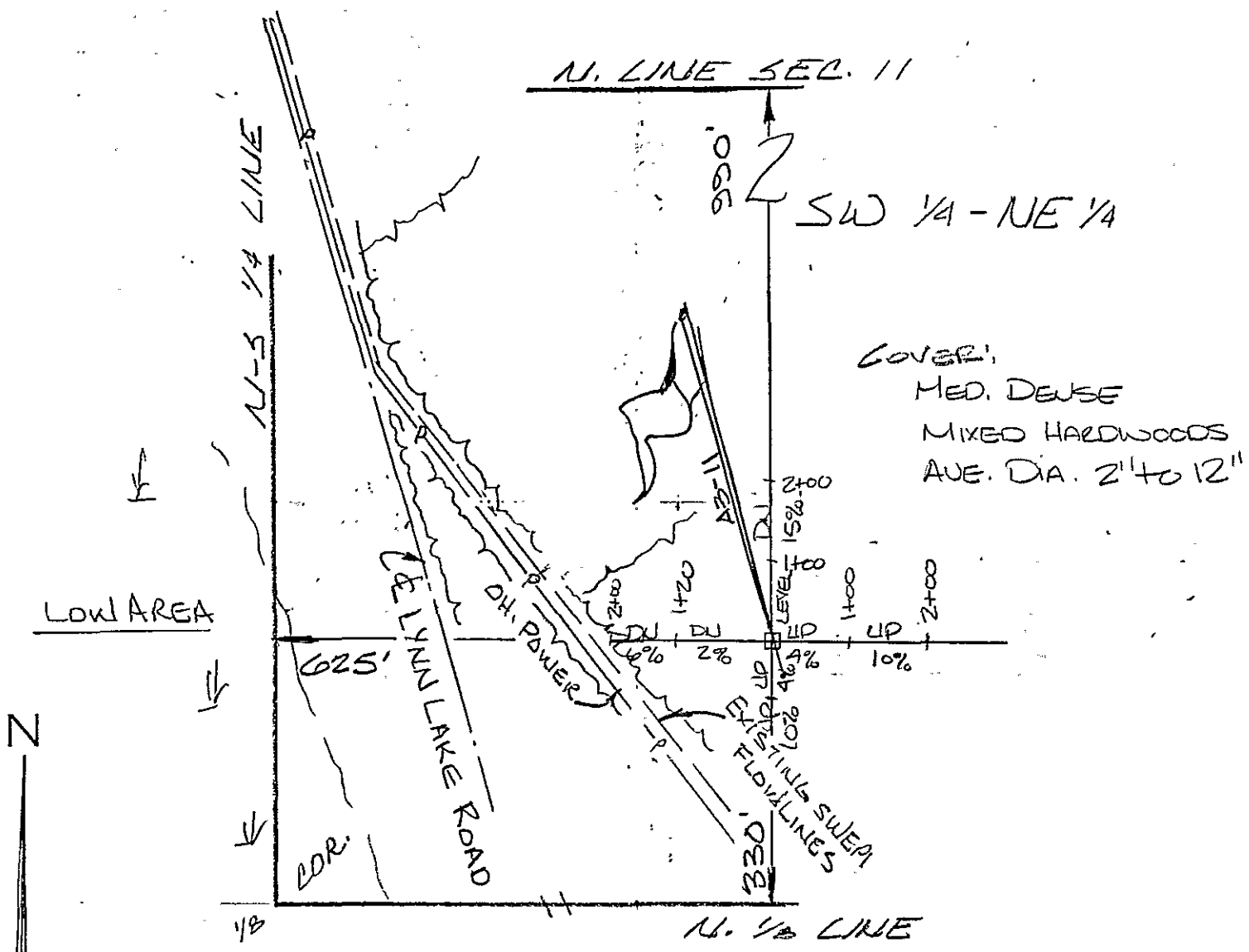


NAME OF INDIVIDUAL WHO SURVEYED SITE <u>GOSLING CZUBAK ASSOCIATES, P.C.</u>	DATE <u>5-4-1992</u>	TITLE <u>ENGINEERS/SURVEYORS</u>
--	-------------------------	-------------------------------------

ADDRESS
525 W. 14TH, TRAVERSE CITY, MI 49684

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

SIGNATURE (Applicant or authorized representative) <u>Corey J. Wiegman</u>	LLS NO. <u>20706</u>
---	-------------------------



NOTE: GROUND ELEVATION AT WELL STAKE IS 1360 U.S.G.S. (QUAD)

PLOT PLAN
MERCURY EXPLORATION

PROPOSED WELL: FREDERICK IV No. A3-11
 Location: 990' feet from the NORTH line and
625' feet from the WEST line of the NORTHEAST
 quarter of Section 11, T 28N, R 4W
FREDERIC Township, CRAWFORD County, Michigan

Scale: 1" = 200'
 Date: 5-4-1992
 Job No.: 92100.91
 REV: 8.12.92

Gosling Czubak Associates



Engineers
Surveyors

Gosling Czubak Associates, P.C.
 525 West Fourteenth
 Traverse City, MI 49684-4093
 616 946-9191

Proposed MERCURY EXPLORATION FREDERIC V No. A3-11

990 Ft. from NORTH Line, 625 Ft. from WEST Line of NE Quarter

Section 11, T 20N, R 4W, FREDERIC Twp., CRAWFORD Co., Michigan

Surface Owner(s) and Address: _____
(If other than Mineral Owner) _____

Topography: ROLLING HILLS

Cover Type/Density: MED. DENSE MIXED HARDWOODS AVE. DIA. 2" TO 12"

Land Utilization: Drill Site Area: FOREST REC.

Adjacent Area: SAME

Zoning: RESOURCE-DEVELOPMENT-EXTRACTION Eff. Date: MAY, 1990

Is there any surface water nearer than one-quarter mile? (If so, specify direction and distance.): YES,

Creek, OLD BEAVER FLOODING WESTERLY 450'±

Structures (Direction and Distance): O.H. POWER and U.G. SWEEP PIS

S45W 230'± FROM PROP. LOCATION.

Existing Roads and/or Trails: LYNN LAKE RD. WEST 400'±

Proposed Drill Site Access: AT INT. OF MT. FREDERIC RD. & LYNN LAKE RD.

GO NORTHERLY 0.60 MILES± TO AN ARROW POINTING EASTERLY.

FOLLOW ORANGE FLAGGING EAST 400'± TO PROPOSED LOCATION.

Special Drill Site Construction and/or Restrictions: NONE

Prepared by J. Pina

Date 8-12-92

File No. 92100, 91

OIL AND GAS OPERATIONS
STATE OF MICHIGAN
ENVIRONMENTAL IMPACT ASSESSMENT

Well Identification

Name of Applicant: Mercury Exploration Company
Address: P.O. Box 1256
Gaylord, Michigan 49735

Well Name and Number: Frederic V # A3-11
Location: SE NW NE Section 11
T 28 N, R 4 W, Frederic Twp.
Crawford Co., MI

I. Description Of Project

Applicant proposes to drill the above well for the purpose indicated below involving the following site-specific information:

Purpose: Testing and possible production of natural gas from the Antrim formation.

Surface and Bottom Hole Footages: Same as indicated on attached Application For Permit To Drill. Surface elevation to be provided to Lansing DNR within first 14 days of drilling.

Drilling and Producing Unit: Same as indicated on attached Application For Permit To Drill.

Surface Ownership: Same as indicated on attached Application For Permit To Drill.

Mineral Ownership: Private

Statement of Notification: Surface owners have been advised by letter of our intention to drill this well.

Access to Location: See attached Supplemental Plat and Project Map.

Wellsite Topography: See attached Supplemental Plat.

II. ENVIRONMENTAL IMPACT ASSESSMENT

A cleared and level area, approximately 200 feet by 200 feet, will be required for drilling and producing this well. Trees of timber or firewood quality which must be cut will be stacked at the edge of the location, and any associated brush and stumps will be buried onsite. All retrievable topsoil will be stripped and saved. Earthen berms will be constructed along the fill sides of the site and all slopes will be maintained to minimize potential for offsite erosion and sedimentation. The reserve pit will be constructed in the cut portion of site. The construction and occupation of this site for drilling and production should not cause significant or irreparable offsite erosion and sedimentation.

Upon determination by the applicant that the well is either non-productive or no longer capable of economic production, the well will be plugged and abandoned in accordance with DNR instructions. If the well is productive, all production will be transported offsite via pipeline and/or truck. As soon as the well is plugged and conditions are favorable, site contours will be restored to as near original condition as is practical. Any retrievable topsoil will be redistributed, seeded and stabilized as needed in accordance with DNR seeding specifications.

The proposed wellsite is isolated from human habitation and regional surface water features. There are no threatened or endangered species known to exist in the immediate area. Drilling and production operations will be conducted prudently and in accordance with all applicable rules and regulations. The drilling and operation of a well at this location should result in negligible adverse environmental impact of the surrounding environment. Drilling and operation of a producing well at this site should have no effect on human health, welfare and future population patterns.

III. PROCEDURES FOR HANDLING DRILLING FLUIDS AND SOLIDS

To protect soil and groundwater from possible contamination during drilling, a single 20 mil PVC lined reserve pit, sealed cellar and rat hole will be utilized to contain all drilling fluids and solids in conformance with Supervisor of Wells Instruction 1-84. All salt cuttings will be dissolved in water and circulated as brine to the reserve pit. Following completion of drilling operations, all retrievable liquids will be removed by a licensed industrial waste hauler and transported to an approved salt water disposal well.

All residual fluids, muds and cuttings will be encapsulated by folding in the reserve pit liner, overlying the pit with a 10 mil PVC top liner to shed precipitation, and burying to a minimum depth of four feet below finished grade.

Chlorinated fresh water will be used while drilling and setting casing through all fresh water aquifers. Chlorinated fresh water will be either trucked in from a commercial source or made up onsite using a temporary water well. Installation of a temporary water well would be intended for drilling purposes only, not human consumption, and would be installed, plugged and abandoned pursuant to DNR guidelines.

IV. METHOD OF BRINE WATER DISPOSAL AND SECONDARY CONTAINMENT

Brines and liquid hydrocarbons produced from this well will be either stored onsite or transported via pipeline to a central production and/or disposal facility. Loading areas, tanks and associated piping for storage of brines and liquid hydrocarbons will be constructed, operated and monitored in accordance with Supervisor of Wells Instruction 1-89. Brines will be either transported directly to an approved salt water disposal well via pipeline or trucked by a licensed industrial waste hauler to either an approved salt water disposal well or other location as approved by the Supervisor of Wells.

V. POSSIBLE ALTERNATIVE TO PROPOSED WELL LOCATION

The proposed location was selected based on geological interpretation, DNR well spacing requirements and site reconnaissance. There are no alternate sites available which are superior to the proposed location for maximum potential for geological success and minimal waste and surface disturbance.

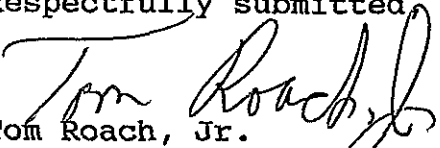
VI. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Hydrocarbon exploration and production remains a necessary pursuit and responsibility. As a non-renewable resource, the consumption of hydrocarbons results in the irreversible and irretrievable commitment of resources. However, surface lands involved in drilling and producing the proposed well will not be irreversibly or irretrievably committed beyond the productive life of the well, nor will use of adjacent lands be significantly affected or limited.

VII. SUMMARY

The proposed location was selected as the best site available to drill and operate the proposed well. The well will be drilled and operated in compliance with all applicable DNR rules and regulations. Every effort will be made to safeguard the environment during operations. The overall, longterm environmental impact of this project should be minimal.

Respectfully submitted,

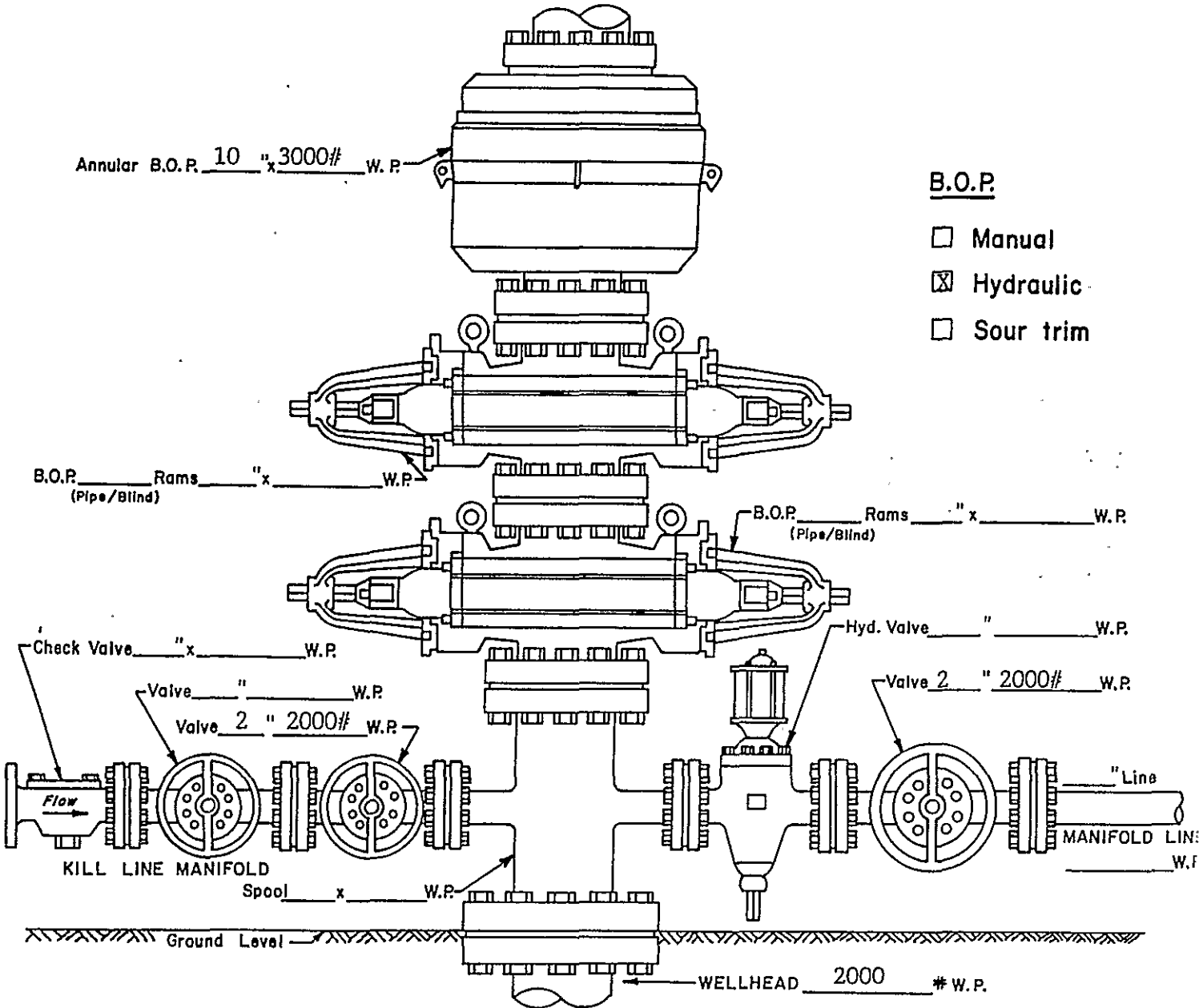

Tom Roach, Jr.
Applicant's Representative

WELLHEAD BLOWOUT CONTROL SYSTEM

Optional worksheet supplement for "Application For Permit to Drill, Deepen, Rework, or Operate a Well." By Authority of Act 61, P.A. 1939, as amended or Act 315, P.A. 1969, as amended.

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

COMPANY Mercury Exploration Company	WELL NAME AND NUMBER Frederic V #A3-11
LOCATION SE NW NE Section 11, T 28 N, R 4 W, Frederic Twp., Crawford Co., MI	



Fill blanks with applicable information. If not applicable, enter "N.A." or cross-out item shown. Enter other pertinent information below.

DRILLING PERMIT APPLICATION FLOW SHEET

APPLICANT Mercury Exploration Co. NUMBER 1368
WELL NAME Frederic A3-11 DATE REC'D 9-24-92
VENDOR # 5017 NEW VENDOR [] ORGANIZATIONAL CHART REC'D []

FEE [X] [] Ck cashier (Ch#/Bank/City) #002282 (*2,200 for 22 wells)
[] Jefferis Commerce Bank, Fort Worth, TX 76101
[] Deepening
[] Revision
[] C & T Tag enclosed

BOND [X] [] Single Well [] Surety [X] C.D. [] L.C. [] Cash
[] Blanket Bond Number 0748412.111

DRILLING UNIT [X] [] S.O. 1-73 [] S.O. 1-86 [] Statement of control of unit
[] 10-12-87 [] Sub 330
[] General Rules Conflicts
[] Field Spacing Order
[] Voluntary Pooling [] Admin. Approval [] Pooling Doc's

LOCATION [X] [X] Survey [X] Certification of Elevation to be Run
[] Directional Plans
[X] Posted on Map Zoning Resource Dev - Extraction [] S.I. 2-87

CASING SEALING [X] [X] Rotary [] Cable [] Combination
[] Int. Csg. S.O. 2-73 [] 30% Exception [] Short Int Exc
[] Through Gas Storage S.O. 1-87
[X] BOP

SURFACE/MINERAL OWNERSHIP [X] [X] Private Surface, Notified by [X] Statement [] Letter
[] State Surface
[] State Minerals Lease # _____ Restrictions _____
[] Real Estate Emp. Contacted _____ Date _____
[] Real Estate Approval by _____ Date _____
[] Federal [] Copy to MMS [] Copy to USFS [] USFS Approval

H₂S [X] [X] Copy to H₂S Unit [X] Sweet [] Sour
[] Contingency Plan Acceptable

EIA REVIEW [X] [X] Special Order 1-31 [X] Supervisor Letter 1-34
[] Remote Pit Required [] Landowner Approval
[X] Water Well [X] Temp. [] Perm. [] Surface [X] Trucked
[X] EIA Acceptable Deficiencies
[X] Field Review Rec'd

DISTRIB. [X] [] Confidential Request [] Copy to Northville, Plymouth, Canton Twp
[X] Copy to Subsurface and Petroleum Geology Unit
[X] Transmittal to District CAYENNE HOUGHTON LAKE Copy to MIO
[X] Transmittal to Region II

MISC. [X] [] Public Hearing Pending
[] Permits Hold [] Other Compliance no - pm
[] Other Problems

REVIEWER: WRL DATE SENT TO FIELD: 9-28-92 [X] F.T. ENTRY

Ready to issue
WRL

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. 47803	TYPE OF WELL (after completion) ANTRIM GAS
FIELD/FACILITY NAME	
WELL NAME & NUMBER Wild West C1-3	
SURFACE LOCATION NW 1/4 of NW 1/4 of SW 1/4 Section 3 T30N R4W	
TOWNSHIP Hayes	COUNTY Otsego
FOOTAGES: NORTH/SOUTH EAST/WEST 414 Ft. from North Line and 455 Ft. from West Line of 1/4 S	
SUBSURFACE LOCATION (if directionally drilled) NA 1/4 of 1/4 of 1/4 Section T R	
TOWNSHIP NA	COUNTY
FOOTAGES: NORTH/SOUTH EAST/WEST NA Ft. from Line and Ft. from Line of 1/4 S	
FEET DRILLED - CABLE TOOLS FEET DRILLED - ROTARY TOOLS From "NA" To "NA" From SURF To 1576	
ELEVATIONS K.B. 1338 ft. R.F. 1336 ft. R.T. 1337 ft. Grd. 1327	

NAME AND ADDRESS OF OWNER MERCURY EXPLORATION COMPANY P.O. Box 1256 Gaylord, MI 49735		
NAME AND ADDRESS OF DRILLING CONTRACTOR Indril, Inc. 2113 Enterprise Drive Mt. Pleasant, MI 48858		
DATE DRILLING BEGAN 4-5-94	DATE DRILL. COMPLETED 4-8-94	DATE WELL COMPLETED 5-16-94
TOTAL DEPTH OF WELL Order 1576 Log 1574	FORMATION AT T.D. Traverse	PROD. FORMATION(S) Antrim
DATE OF FIRST INJECTION "N.A."	INJECTED FORMATION "N.A."	SOLUTION FORMATION "N.A."

CASING, CASING LINERS AND CEMENTING, OPERATING STRINGS

PERFORATIONS

SIZE	WHERE SET	CEMENT	FT. PULLED	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEI YES
13 3/8"	53	DRIVEN	"NONE"				
8 5/8"	922	365 sx HLC 3% CaCl 175 sx Class A 3% CaCl		5-9-94	72	1242 - 1260	x
5 1/2"	1563	235 sx HLC 2% CaCl 175 sx Class A 2% CaCl		5-9-94	296	1124 - 1198	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.
ANTRIM-SHALE	GAS	1124	1260	"N. R."							

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
5-9-94	1242 - 1260	30,000# SD in 70 QUALITY FOAM	"NONE"				
5-9-94	1124 - 1198	60,000# SD in 70 QUALITY FOAM					

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	DEPT
Schlumberger	X	DUAL INDUCTION SFL Surf	-1574	"NONE"		511	1	x		1542
Birdwell						1012	1			
						1575	1/2			

PRODUCTION TEST DATA

OIL -- Bbls/day "N.A."	GRAVITY -- °API 0	COND. Bbls/day 0	GAS -- MCF/day 80	WATER -- Bbls/day 242	H ₂ S -- Grains/100 cu. ft. 0	B.H.P. AND DEPTH "N.T."
---------------------------	----------------------	---------------------	----------------------	--------------------------	---	----------------------------

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

DATE 7-11-94	NAME AND TITLE (PRINT) JEFF COOK, MANAGER OF OPERATIONS	SIGNATURE <i>Jeff Cook</i>
-----------------	--	-------------------------------

FORMATION RECORD
(ATTACH ADDITIONAL SHEETS IF NECESSARY)

#47803

ELEVATION USED: Ground	GEOLOGIST NAME: David Savage	TOPS TAKEN FROM: <input type="checkbox"/> DRILLERS LOG <input type="checkbox"/> SAMPLE LOG <input checked="" type="checkbox"/> ELECTRIC LOG
---------------------------	---------------------------------	--

FROM	TO	FORMATION (TYPE, COLOR, HARDNESS)	FROM	TO	FORMATION (TYPE, COLOR, HARDNESS)
NOTE: IF WELL DIRECTIONALLY DRILLED, ADD TRUE VERTICAL DEPTH FORMATION TOPS WHERE APPROPRIATE.					
<u>DRIFT</u>	758	Sand, gravel and clay beds			
<u>SUNBURY</u>		Shale, black-very dark brown, carbonaceous, fissle.			
NA	NA				
<u>ANTRIM SHALE</u>					
1122	1200	Shale, black-very dark brown, very carbonaceous,, non-calcareous, graniny texture, fissle, tracé disseminated pyrite.			
1200	1240	Shale, gray brown-gray gray-green, limy in part, clay rich, carbonaceous in part.			
IF WELL WAS CORED, ATTACH CORE DESCRIPTION					
DRILL STEM TEST DATA					
1240	1260	Shale, black, very carbonaceous, non-calcareous, grainy texture, fissle, minor disseminated pyrite.			
<u>TRAVERSE FORMATION</u>					
1260	1312	Shale, brown-gray, mostly calcareous, limy in part.			
<u>TRAVERSE LIMESTONE</u>					
1312	TD	Limestone, brown-gray, argillaceous, fossiliferous, microcrystalline, pyrite inclusions, dense.			
LIST ATTACHMENTS:					
Dual Induction					
GEOLOGICAL SURVEY USE ONLY					
REVIEWED BY:					
DATE OF REVIEW:					

FEB 17 1994

STATE OF MICHIGAN
DNR DEPARTMENT of NATURAL RESOURCES

GEOLOGICAL SURVEY DIVISION
PO BOX 30256
LANSING MICHIGAN 48909 - 7756

CERTIFICATION OF CASING AND SEALING
OF SURFACE HOLE

REQUIRED BY AUTHORITY OF: ACT 61, P.A. 1939, AS
AMENDED NON-SUBMISSION AND/OR FALSIFICATION OF THIS
INFORMATION MAY RESULT IN FINES AND/OR IMPRISONMENT.

PERMIT NUMBER 47803	
WELL NAME WILD WEST # CI-3	
SURFACE LOCATION NW 1/4 OF NW 1/4 OF SW 1/4, SECTION 03 T 30N R 04W	
TOWNSHIP HAYES	COUNTY OTSEGO
NAME AND ADDRESS OF PERMITTEE Mercury Exploration Company P.O. Box 1256 / 720 S. Otsego Gaylord, MI 49735	
NAME AND ADDRESS OF DRILLING CONTRACTOR CH & P Drilling Co. 3124 Logan Valley Rd. / P.O. Box 1809 Traverse City, MI 49684	

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
12 1/4	787'		932	ELLSWORTH SH	6 FEB 94

NARRATIVE OF UNUSUAL DRILLING CIRCUMSTANCES OR PROBLEMS ENCOUNTERED

NONE

NAME AND ADDRESS OF GEOLOGIST/MUD LOGGER
**DAVID R SAUSAGE
1409 W. BROADWAY
MT. PLEASANT, MI 48858**

**C/O WELL-SITE LABS
4077 N. CENTON
SAGINAW, MI 48604**

DATE
6 FEBRUARY 94

SIGNATURE
[Signature]

SURFACE CASING

CASING O.D. (IN)	CASING DEPTH (FT)	CEMENT TYPE AND ADDITIVES	AMOUNT OF CEMENT (SKS)	VOLUME (BBLs)		PLUG DOWN DATE & TIME
				RUMPED	Returned To Surface	
8 5/8	922	POZ/10 STANDARD	350	105	28	1700
			100	21	0	7 FEB 94

NARRATIVE OF PROBLEMS ENCOUNTERED RUNNING OR CEMENTING CASING. NOTE ANY CEMENT FALLBACK OR GROUTING.

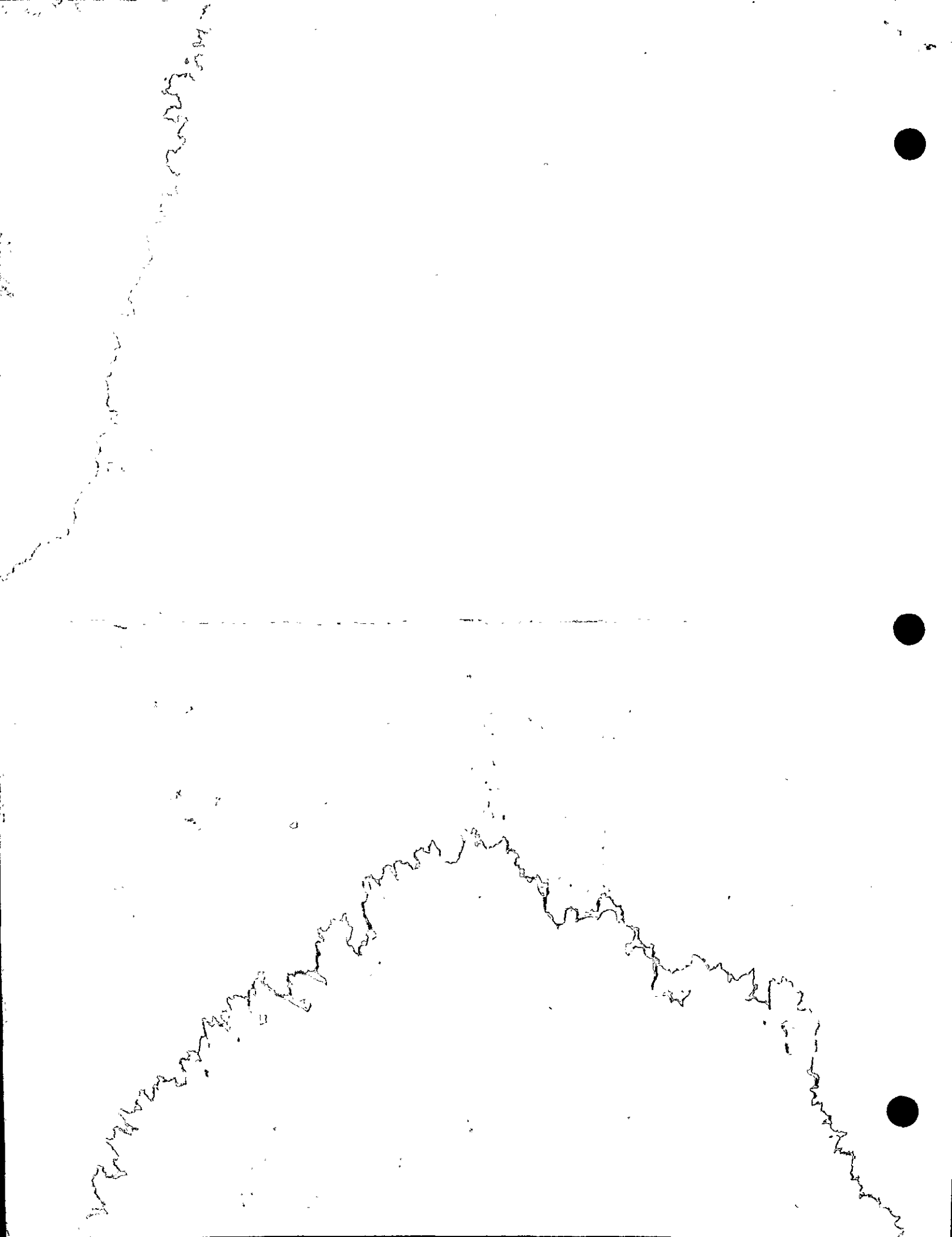
NONE

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

DATE
10 Feb 94

SIGNATURE OF PERMITTEE OR COMPANY OFFICER
Gary Hall / Drilling Foreman *[Signature]*

SUBMIT THE ORIGINAL AND ONE COPY, TYPEWRITTEN OR LEGIBLY PRINTED, WITHIN 30 DAYS AFTER DRILLING IS COMPLETED.



3-30N-04W
HAYES TWP. (OTSEGO CO.)

WILD WEST #C1-3

PERMIT NO. 47803

<u>SURFACE LOCATION:</u>	<u>QT</u>	<u>QT</u>	<u>QT</u>	<u>SEC</u>	<u>T</u>	<u>R</u>	<u>FT FROM QT</u>	<u>SEC</u>	<u>LINES</u>
	NW	NW	SW	3	30N	04W	414 N		455 W

THIS WELL RECORD ASSEMBLY IS A COMPILATION OF WELL DATA FILED BY OR ON BEHALF OF THE OPERATOR, AS REQUIRED BY ACT 61, P.A. 1939, AS AMENDED; FORMATION TOPS AND STRATIGRAPHIC INTERVALS DETERMINED OR CONFIRMED WHERE POSSIBLE BY GEOLOGICAL SURVEY DIVISION PERSONNEL FROM MECHANICAL LOGS AND PRELIMINARY INFORMATION COLLECTED WHILE DRILLING WAS IN PROGRESS. RECORDS COMPILED BY R C ELOWSKI, GEOLOGIST.

ELEVATIONS: 1338 KELLY BUSHING (DATUM), 1336 RIG FLOOR, 1327 GROUND
1337 ROTARY TABLE

FORMATION TOPS AND STRATIGRAPHIC INTERVALS DETERMINED OR CONFIRMED BY GEOLOGICAL SURVEY PERSONNEL FROM SCHLUMBERGER DUAL INDUCTION-SFL/GAMMA RAY LOGS AND RECORDS FILED BY OPERATOR.

	MD		MD
PLEISTOCENE:		DEVONIAN:	
GLACIAL DRIFT	759	TRAVERSE FORMATION	1260
MISSISSIPPIAN:		TRAVERSE LIMESTONE	1311
ANTRIM	759		
ANTRIM DARK	1123		

THE FOLLOWING DOCUMENTS ARE REPRODUCTIONS OF OFFICIAL RECORDS SUBMITTED BY:
JEFF COOK, ON BEHALF OF MERCURY EXPLORATION CO

08/17/94

GEOLOGICAL SURVEY

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - GEOLOGICAL SURVEY DIVISION

APR 2 1998

REQUEST FOR TRANSFER OF PERMIT

Permits & Bonding Unit

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 47803	Well type ANTRIM GAS	Current true vertical depth 1576
Well name and number WILD WEST C1-3		
Surface location NW 1/4 NW 1/4 SW 1/4 Section 3 T 30N R4W		
Township HAYES		County OTSEGO

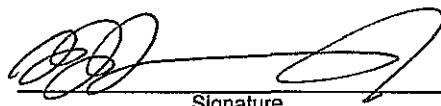
NOTE: Eligibility for permits is conditioned upon compliance with the statutes, rules and orders of the Department of Environmental Quality. Permits shall not be transferred to persons not in compliance. A permit for a well shall not be transferred if the permittee is under notice because of unsatisfactory 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.

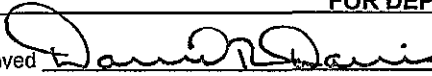
TRANSFER OF A PERMIT FROM:

Name(s) of Selling Permittee(s) MERCURY EXPLORATION COMPANY	Fed. I.D.# or S.S.# 75-1608586
Address: Number and Street, City or Town, State, ZIP Code P.O. BOX 1256 GAYLORD, MI 49734	Telephone 517-732-0020
All permits rights and responsibilities are discharged by:	
MERCURY EXPLORATION COMPANY, RODNEY L. SCHOOLCRAFT Permittee Authorized representative name	 Signature
	3/17/98 Date
Permittee Authorized representative name	Signature Date
Permittee Authorized representative name	Signature Date

TRANSFER OF A PERMIT TO:

Name(s) of Acquiring Permittee(s): DOMINION MIDWEST ENERGY, INC.	Fed. I.D.# or S.S.# 38-1710995
Address: Number and Street, City or Town, State, ZIP Code ONE RIVERFRONT PLAZA, 55 CAMPAU, N.W. GRAND RAPIDS, MI 49503-2616	Telephone 616-458-1150
(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: <input type="checkbox"/> Single Well <input type="checkbox"/> Attached Surety or Bank MICHIGAN NATIONAL BANK	
<input checked="" type="checkbox"/> Blanket <input checked="" type="checkbox"/> On File Bond Number LC 018403 Amount \$250,000.00	
<input type="checkbox"/> Statement of Financial Responsibility	
All permittee rights and responsibilities are assumed by:	
DOMINION MIDWEST ENERGY, INC., S.J. JANSMA, JR. Permittee Authorized representative name	 Signature
	3-26-98 Date
Permittee Authorized representative name	Signature Date
Permittee Authorized representative name	Signature Date

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

Approved  Signature	NOV 05 1998 Date	Distribution by DEQ <input checked="" type="checkbox"/> Lansing <input type="checkbox"/> Selling Owner <input type="checkbox"/> Acquiring Owner <input type="checkbox"/> Field
---	---------------------	--

EQP 7200-7 (Rev 10/96) Mail Original and 3 copies to: GEOLOGICAL SURVEY DIVISION
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY
PO BOX 30256
LANSING MI 48909-7756



CHECKLIST FOR WELL BOND

TERMINATION AND PERMIT/TRANSFER

APR 12 1998

Check ONE:

- Part 615, Supervisor of Wells as amended, Act 451 PA 1994
- Part 625, Mineral Wells as amended, Act 451 PA 1994

Permit number 47803	Well name and number Wild West C1-3
Permittee Maryann Egel Co.	Vendor number 5017
Surface location NW 1/4 NW 1/4 SW 1/4 Sec 3 T30N R 4W	
Township name Hayes	County name Otsego
Bond number 158416833	Bond type
Effective date	Amount
	Bank number

Check ONE of the following activities:

- Well plugged and abandoned
- Permit transfer requested
- Permit terminated
- Bond replaced/cancelled

Checklist start date:

This form is processed concurrently by both field and Lansing staff. Fill-in appropriate check boxes. Check if requirement has been met. Mark box N if the requirement does not apply, then forward this form to the next Unit in sequence listed in summary below. R208, R403 etc. refer to Part 625 NREPA rules.

PROCESSING SUMMARY

Plugged and Abandoned or Terminated Permit

1. Field: Complete section "A" below, return form to PB Unit
2. PGP Unit: Complete "Drilling Records" section on reverse
3. PGP Unit: Complete "...Production Records" section (plugged wells only)
4. Compliance Unit: Complete "Compliance" section
5. PB Unit: Complete "Permit..." section and terminate well bond if apparent final completion is achieved

Permit Transfer or Bonding Change

1. Field: Perform site inspection, attach copy of inspection Form EQ 7235; complete section "B" below, return form to PB Unit
2. PGP Unit: Complete "Drilling Records" section on reverse
3. PGP Unit: Complete "Engineering and Production Records" section
4. Compliance Unit: Complete "Compliance" section
5. PB Unit: Complete "Permit..." section and release well bond if compliance is achieved (transfers only)

FIELD COMPLETE SECTION A OR B BELOW:

A - for Plugged and Abandoned well or Terminated Permit

- | | |
|--|--|
| <input type="checkbox"/> R403 Water well plugged or permitted under Public Health Code | <input type="checkbox"/> Permit term elapsed as defined in R208 |
| <input type="checkbox"/> R407, R1003 Well cellar and all pits and excavations have been filled | <input type="checkbox"/> Well site construction has not occurred |
| <input type="checkbox"/> R422 Rat and mouse holes are properly abandoned | <input type="checkbox"/> R403 Water well log is filed |
| <input type="checkbox"/> R511 Change of Well Status records are filed | <input type="checkbox"/> R407 Pit plot is filed |
| <input type="checkbox"/> R902 Plugging Record received and reviewed | <input type="checkbox"/> R1003 Debris has been removed |
| <input type="checkbox"/> R902, R904 Surface casing properly abandoned | <input type="checkbox"/> R1118 H ₂ S analysis is filed |
| <input type="checkbox"/> R1003 Contour has been restored and erosion minimized | <input type="checkbox"/> Other well records are filed |
| <input type="checkbox"/> R1003, R1011 Flowlines and vessels have been properly abandoned | <input type="checkbox"/> Landowner's assumption of responsibility has been filed |

B - for Permit Transfer Requested or Bond Replaced Attach inspection form EQ 7235

- Well construction has not occurred
- R403 Water well log is filed
- R407 Pit plot is filed
- R511 Change of Well Status records are filed
- R1008 Loss reports are filed
- R1118 H₂S analysis is filed
- Other required records are filed

Comments/Exceptions:

OK to terminate the well bond YES NO (If NO, specify reason in comments, continue bond termination procedure)

Recommend approval of permit transfer YES NO (If NO, specify reason in comments, continue bond termination procedure)

Signature & Date *Mark Cronell* 10-26-98



CHECKLIST FOR WELL BOND

TERMINATION AND PERMIT TRANSFER

Permit number 47803	Well name and number Wild West C1-3
-------------------------------	---

Permittee Mercury Expl. Co.	Vendor number 5017
---------------------------------------	------------------------------

Check ONE:

Part 615, Supervisor of Wells as amended, Act 451 PA 1994

Part 625, Mineral Wells as amended, Act 451 PA 1994

Surface location NW 1/4 NW 1/4 SW 1/4 Sec 3 T30N R4W	
Township name Hages	County name Otsego

Check ONE of the following activities:

Well plugged and abandoned

Permit transfer requested

Permit terminated

Bond replaced/cancelled

Checklist start date:

Bond number 158416833	Bond type	
Effective date	Amount	Bank number

This form is processed concurrently by both field and Lansing staff. Fill-in appropriate check boxes. Check if requirement has been met. Mark box N if the requirement does not apply, then forward this form to the next Unit in sequence listed in summary below. R208, R403 etc. refer to Part 625 NREPA rules.

PROCESSING SUMMARY

- Plugged and Abandoned or Terminated Permit**
- Field: Complete section "A" below, return form to PB Unit
 - PGP Unit: Complete "Drilling Records" section on reverse
 - PGP Unit: Complete "...Production Records" section (plugged wells only)
 - Compliance Unit: Complete "Compliance" section
 - PB Unit: Complete "Permit..." section and terminate well bond if apparent final completion is achieved

- Permit Transfer or Bonding Change**
- Field: Perform site inspection, attach copy of inspection Form EQ 7235; complete section "B" below, return form to PB Unit
 - PGP Unit: Complete "Drilling Records" section on reverse
 - PGP Unit: Complete "Engineering and Production Records" section
 - Compliance Unit: Complete "Compliance" section
 - PB Unit: Complete "Permit..." section and release well bond if compliance is achieved (transfers only)

FIELD COMPLETE SECTION A OR B BELOW:

- A - for Plugged and Abandoned well or Terminated Permit**
- | | |
|--|--|
| <input type="checkbox"/> R403 Water well plugged or permitted under Public Health Code | <input type="checkbox"/> Permit term elapsed as defined in R208 |
| <input type="checkbox"/> R407, R1003 Well cellar and all pits and excavations have been filled | <input type="checkbox"/> Well site construction has not occurred |
| <input type="checkbox"/> R422 Rat and mouse holes are properly abandoned | <input type="checkbox"/> R403 Water well log is filed |
| <input type="checkbox"/> R511 Change of Well Status records are filed | <input type="checkbox"/> R407 Pit plot is filed |
| <input type="checkbox"/> R902 Plugging Record received and reviewed | <input type="checkbox"/> R1003 Debris has been removed |
| <input type="checkbox"/> R902, R904 Surface casing properly abandoned | <input type="checkbox"/> R1118 H2S analysis is filed |
| <input type="checkbox"/> R1003 Contour has been restored and erosion minimized | <input type="checkbox"/> Other well records are filed |
| <input type="checkbox"/> R1003, R1011 Flowlines and vessels have been properly abandoned | <input type="checkbox"/> Landowner's assumption of responsibility has been filed |

- B - for Permit Transfer Requested or Bond Replaced Attach inspection form EQ 7235**
- Well construction has not occurred
 - R403 Water well log is filed
 - R407 Pit plot is filed
 - R511 Change of Well Status records are filed
 - R1008 Loss reports are filed
 - R1118 H2S analysis is filed
 - Other required records are filed

Comments/Exceptions:

OK to terminate the well bond YES NO (If NO, specify reason in comments, continue bond termination procedure)

Recommend approval of permit transfer YES NO (If NO, specify reason in comments, continue bond termination procedure)

Signature & Date

DRILLING RECORDS

- R416 Service company records filed as requested
- R417, R420 Drill cuttings and cores have been delivered
- R418 Driller's log has been filed
- R418 Well elevations are filed

- R418, S.I. 1-94 Certification of surface casing filed
- R419 Electric logs have been filed
- R420 Deepening records have been filed
- R421 Directional surveys have been filed
- Other required records have been filed

Comments/Exceptions:

OK to terminate the well bond YES NO (If NO, specify reason in comments, continue bond termination procedure)

Recommend approval of permit transfer YES NO (If NO, specify reason in comments, continue bond termination procedure)

Signature and date *D. Michael Bricker 4-14-98*

ENGINEERING AND PRODUCTION RECORDS (skip this section if permit is terminated)

- R418 Well completion report has been filed
- R605 - R607 Well capacity tests have been filed
- R609 Reservoir evaluation test data has been filed

- R510 & 610 Gas and oil production has been reported
- R612 Secondary recovery records have been filed
- R806 Injection well operating reports are filed
- Other required records have been filed.

Comments/Exceptions:

OK to terminate the well bond YES NO (If NO, specify reason in comments, continue bond termination procedure)

Recommend approval of permit transfer YES NO (If NO, specify reason in comments, continue bond termination procedure)

Signature and date *Leuther Schmitt APR 28 1998*

COMPLIANCE

- No compliance cases initiated for this well
- Consent order signed by acquiring owner

- All field level cases for this well are closed
- Compliance unit cases for this well are closed.
- R205 Acquiring owner eligible for permit

Comments/Exceptions:

OK to terminate the well bond YES NO (If NO, specify reason in comments, continue bond termination procedure)

Recommend approval of permit transfer YES NO (If NO, specify reason in comments, continue bond termination procedure)

Signature and date *Peggy M. Comb. Powche 6/9/98*

PERMIT & BONDING UNIT RECORDS

- Bond in effect prior to September 20, 1996 rule changes
- One year has elapsed since PLGC date (Part 625 only)
- Affidavit of compliance is on file (Part 625 only)
- Final well on blanket bond

- Replaced by Bond No. _____
 - Bond cancelled per R213
 - Permit transferred
- Effective date of any of above _____

Comments

Recommend approval of permit transfer YES NO (If NO, specify reason in comments, continue bond termination procedure)

Liability for the subject well under the above specified bond has terminated as presently determined.

Signature and date

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

Stevens T. Mason Building, P.O. Box 30028, Lansing, MI 48909-7528

ROLAND HARMES, Director

GEOLOGICAL SURVEY DIVISION
P.O. Box 30256, Lansing, MI 48909-7756

September 1, 1994

NATURAL RESOURCES
COMMISSION

JERRY C. BARTNIK
LARRY DEVUYST
PAUL EISELE
JAMES HILL
DAVID HOLLI
JOEY M. SPANO
JORDAN B. TATTER

Mr. John King
Petroleum Engineering Section
Public Service Commission
Department of Commerce
6545 Mercantile Way
Lansing, Michigan 48909

Dear Mr. King:

Mercury Exploration Co. Inc.
Hayes Township, Otsego County
Wild West C1-3, P.N. 47803, PRU No. 18845
Wild West D4-4, P.N. 47804, PRU No. 18846
Wild West C3-3, P.N. 48202, PRU No. 18847
Wild West D3-4, P.N. 48210, PRU No. 18848
Wild West D2-9, P.N. 48211, PRU No. 18849

Based on information in our files, these wells are hereby transferred to the Public Service Commission for proration.

Sincerely,

Raymond Vugrinovich
Senior Geologist
Proration and Technical
Evaluation Unit
Geological Survey Division
517-334-6945

GEOLOGICAL SURVEY

SEP 02 1994

Permits & Bonding Unit

RV/bb

cc: Floyd Layton, DNR
Andrea Sullivan, DNR
Permits and Bonding, DNR
Subsurface and Petroleum Geology, DNR



Appendix E

Historic Aerial Photographs



INQUIRY #: 4318863.5

YEAR: 1938

| = 500'





INQUIRY #: 4318863.5

YEAR: 1952

| = 500'





INQUIRY #: 4318863.5

YEAR: 1963

| = 500'





INQUIRY #: 4318863.5

YEAR: 1981

| = 600'





INQUIRY #: 4318863.5

YEAR: 1993

| = 500'





INQUIRY #: 4318863.5

YEAR: 1994

| = 500'





INQUIRY #: 4318863.5

YEAR: 1994

|—————| = 500'





INQUIRY #: 4318863.5

YEAR: 2005

| = 500'





INQUIRY #: 4318863.5

YEAR: 2005

| = 500'





INQUIRY #: 4318863.5

YEAR: 2006

| = 500'





INQUIRY #: 4318863.5

YEAR: 2006

| = 500'





INQUIRY #: 4318863.5

YEAR: 2009

| = 500'





INQUIRY #: 4318863.5

YEAR: 2009

| = 500'





INQUIRY #: 4318863.5

YEAR: 2010

| = 500'





INQUIRY #: 4318863.5

YEAR: 2010

| = 500'





INQUIRY #: 4318863.5

YEAR: 2012

| = 500'





INQUIRY #: 4318863.5

YEAR: 2012

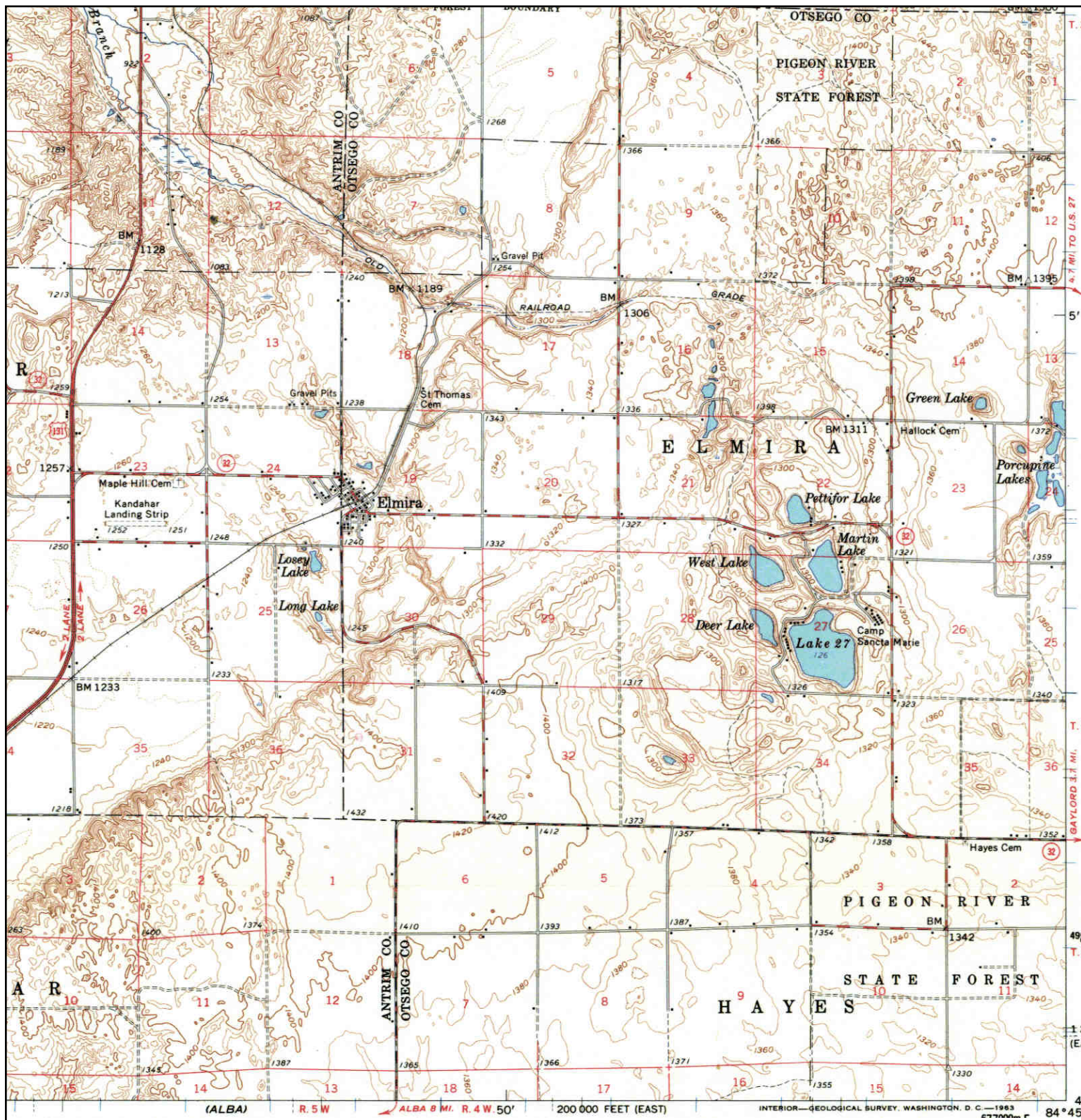
| = 500'




Appendix F

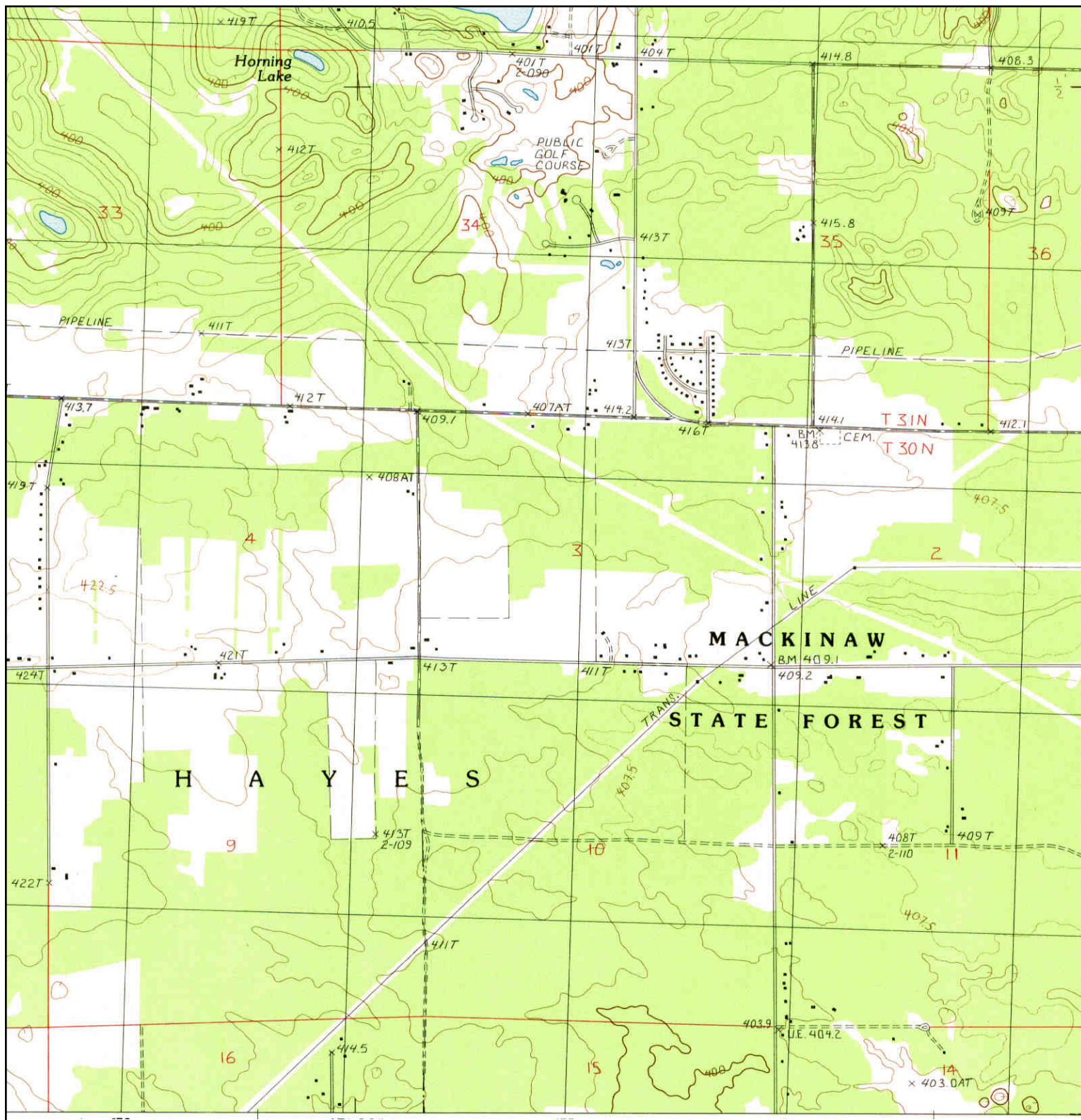
Historic Topographic Maps

Historical Topographic Map



 <p>N</p>	TARGET QUAD NAME: BOYNE FALLS MAP YEAR: 1961	SITE NAME: Hayes Township Property ADDRESS: 100-199 COPPINS RD Gaylord, MI 49735	CLIENT: Compliance, Inc. CONTACT: Jim Rossi INQUIRY#: 4318863.8
	SERIES: 15 SCALE: 1:62500	LAT/LONG: 45.0223 / -84.7807	RESEARCH DATE: 06/09/2015

Historical Topographic Map



	TARGET QUAD	SITE NAME: Hayes Township Property	CLIENT: Compliance, Inc.
	NAME: ELMIRA		CONTACT: Jim Rossi
	MAP YEAR: 1986	ADDRESS: 100-199 COPPINS RD	INQUIRY#: 4318863.8
	PROVISIONAL	Gaylord, MI 49735	RESEARCH DATE: 06/09/2015
	SERIES: 7.5	LAT/LONG: 45.0223 / -84.7807	
	SCALE: 1:24000		

Appendix G

Site Photographs



1. A view of the northern portion of the site.



2. A view of the southern portion of the site.



3. A view of the power line right-of-way on the south side of the site.



4. A view of the center part of the western portion of the site.



5. A view of the west central portion of the site and the location of a natural gas pipe line.



6. A view of natural gas well C1-3 on the northwest portion of the site.



7. A view of transformers near the C1-3 well site.



8. A view of the west side of the site along Coppins Road.



9. A view of brine storage and brine injection well on property south of the site.



10. A view of monitoring well southeast of the brine storage tank on property south of the site.



11. A view of residential property located west of the site.



12. A view of the residential property southwest of the site.

Appendix H

Resume of Key Personnel

Traverse City, Michigan
(231) 922-7400

Expertise

Environmental Due Diligence

*Environmental Compliance
Evaluation*

Environmental Investigation

Chemical Risk Assessment

Credentials

*M.P.H., Environmental and
Industrial Health, School of Public
Health, University of Michigan*

*B.S., Chemistry, University of
Michigan*

James E. Rossi

Senior Project Manager, Compliance, Inc.

Mr. Rossi has 27 years of environmental consulting experience focusing on environmental assessments, compliance evaluations, investigations and risk assessment. Mr. Rossi has completed these assessments and investigations at several hundred active and closed manufacturing sites, active and abandoned waste disposal facilities and impaired properties subject to redevelopment. His work has covered a variety of manufacturing sectors including petroleum refining and distribution, automotive parts manufacturing, medical device manufacturing, pharmaceutical production, pulp and paper, furniture manufacturing, textiles manufacturing, and consumer products production and distribution. These facilities have been regulated under a variety of federal, or state equivalent, programs including RCRA, CWA, TSCA, CERCLA, and the CAA. Many of these assessments have been completed as a part of multi-site compliance and liability evaluations to support property acquisitions and other financial transactions. Mr. Rossi has provided these services for clients located throughout the eastern United States with a particular focus for the past 20 years on Michigan site assessment and regulatory compliance.

Experience Highlights

- Conducted environmental compliance evaluations and assessments of industrial facilities in more than twenty states for a variety of manufacturing clients, financial institutions, and law firms. Typical work scopes for these evaluations have included a comprehensive inspection of facility operations, a review of facility environmental documents, interviews with key employees and contact with regulatory authorities.
- Conducted a multi-site environmental assessment/compliance evaluation for a major automotive parts supplier. These assessments included the quantification of regulatory compliance activity costs including supplementation of discharge control devices and the estimation of potential liabilities associated with known and potential sources of soil and groundwater impact.
- Conducted or led environmental compliance assessments and investigations, culminating in Baseline Environmental Assessment (BEA) preparation at more than 40 manufacturing and commercial sites. The BEA process allows for the acquisition of contaminated property without liability for prospective purchasers under Michigan Part 201 regulations.
- Managed the simultaneous environmental assessments, investigations, and liability evaluations of 26 petroleum distribution facilities for a national petroleum refiner to support their sale/acquisition
- Conducted environmental site investigation and remediation activities at ten orphaned sites of contamination for the Michigan Department of Environmental Quality (MDEQ) under multiple professional service contracts