# Environmental Assessment

**ATTACHMENT 3**

ENVIRONMENTAL ASSESSMENT

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## APPENDICES

# 3 ENVIRONMENTAL ASSESSMENT

## 3.1 INTRODUCTION

Ottawa County Landfill, Inc. is proposing to construct an expansion of the Ottawa County Farms (OCF) Landfill. The proposed expansion will provide 51.1 acres of lateral expansion to the east of the current fill and 152 acres of vertical expansion. The total waste footprint with the proposed expansion area is 242.12 acres.

The expansion will net 31,823,000 cubic yards of additional disposal capacity for Type II. The total net airspace volume of the landfill including the expansion is 56,975,000 cubic yards.

OCF Landfill is located in Sections 26 and 27 of Polkton Township, Ottawa County, Michigan. OCF Landfill facility boundary is approximately 321.54 acres which is bordered by I-96 to the north, 60th Avenue to the east, Garfield Street to the south and 68th Avenue to the west. The facility is near Coopersville, MI. Figures 3-1 and 3-2 show the general location of the site, within the state and region.

## 3.2 CONSISTENCY WITH THE COUNTY SOLID WASTE PLAN

OCF requested a determination on whether the proposed expansion was consistent with the newly adopted Solid Waste Management Plan. On April 28, 2016, Ottawa County provided written affirmation that the expansion is consistent with the Ottawa County Solid Waste Management Plan of 2000 as amended and subsequently approved by the Michigan Department of Environmental Quality (MDEQ) on December 2, 2015. Copies of correspondence are provided in Appendix 3-II-A.

## 3.3 REQUIRED STATE AND FEDERAL PERMITS

The primary regulating authority for the OCF Landfill is a construction permit and operating license pursuant to Part 115 of the Natural Resources And Environmental Protection Act, 1994 PA 451, as amended. In addition, the following permits have been obtained by the facility in accordance with other regulating authorities.

### *3.3.1 County Erosion Permit and General NPDES Permit*

Discharge of surface water runoff from industrial activities is permitted under the Ottawa County Drain Commissioner and the MDEQ Surface Water Quality Division. The OCF Landfill has coverage under a General Permit for Discharge from Industrial Activities (MIS110000). This

permit allows discharge of storm water from the existing sedimentation basins. No additional discharge points are proposed for this expansion.

A Soil Erosion and Sedimentation Control Permit is obtained from the Ottawa County Drain Commissioner for stockpiling projects in the borrow area.

### *3.3.2 Individual NPDES Permit*

Discharge to surface waters from storm water discharge points are permitted under a certificate of coverage (COC). In accordance with this permit, the site conducts reporting on the quantity and quality of the discharge. No additional individual permitting will be required for point discharge of water since the quantity and quality will not change with the submittal of the expansion permit application.

### *3.3.3 Title V Air Permit (Renewable Operating Permit)*

OCF Landfill maintains a Title V - Renewable Operating Permit Application to the MDEQ - Air Quality Division. This permit covers fugitive gas and dust emissions from the landfill. The ROP Application was determined to be administratively complete and on June 24, 2013, Renewable Operating Permit MI-ROP-N3294-2013 was issued to the site. This ROP expires June 24, 2018.

### *3.3.4 MDEQ Water Resources Division Permit (Pond Construction Permit)*

An unnamed tributary is located northeast of the expansion area as indicated on Figure 3-2. OCF Landfill plans to construct a new sedimentation basin within 400 feet of this creek. A joint permit application was prepared and submitted to MDEQ to obtain a permit for the construction of the proposed basin. This permit was issued on May 2, 2016 (Permit No. WRP002366). A copy of the permit is attached in Appendix 3-II.

## 3.4 LOCATION STANDARDS

### *3.4.1 Groundwater Isolation per Rule 411*

Compliance with the groundwater isolation distances as defined in Rule 411 will be met on the site. A minimum of 10 foot of isolation from the natural groundwater to the base of the liner system will be maintained. This is demonstrated in the Hydrogeologic Investigation Report Figures 8 through 12. These figures show that current base grades reach elevations between 620 and 650, and proposed base grades reach minimum elevations between 590 and 620. Figures 8 through 19 also show groundwater elevations (base of confining bed in confined conditions) ranging from 510 to 580 across the site. The Hydrogeologic Investigation Report thoroughly explores the minimum 10 foot isolation from natural groundwater and demonstrates this

isolation distance will be maintained.

### *3.4.2 Horizontal Isolation Distances per Rule 412*

Horizontal isolation distances, as mandated in Rule 412, have been established to minimize nuisance and environmental impact of the facility. The following sections identify compliance with the horizontal isolation distances. Plan Sheets 3 through 9 illustrate the locations of features that affect the limits of waste.

Property Lines and Road Right-of-Ways

The lateral expansion area maintains a minimum isolation distance of 100 feet from adjacent property lines and right-of-ways as shown on Figure 3-2 and Sheet 2 on the Engineering Drawings. Rule 412(4) requires that an eight-foot berm or suitable screening be maintained if the limit of waste is less than 200 foot from the property line. Therefore, berms were incorporated into the design on the east and south sides of the vertical expansion area, and sufficient trees as well as a wooded area provide screening along the north side of the facility.

As shown on Sheets 4 through 9 on the Engineering Drawings, the lateral expansion area also maintains a minimum isolation distance of 300 feet from domiciles as required by Rule 412(4). In order to meet this requirement, the well and electrical service has been removed from 15420 60$^{th}$ Avenue, rendering the structure uninhabitable and no longer considered a domicile. See Appendix 3-IV for Well Abandonment Logs submitted to the County.

Inland Lakes, Streams and Great Lakes

The proposed solid waste boundary of the OCF Landfill is not located within 400 feet of inland lakes and streams nor is it within 2,000 feet of the Great Lakes.

Well Isolation

The active work area is not within 2,000 feet of wells that serve type I or IIa water supplies. Further, the active work area is not within 800 feet of wells that serve type IIb and type III public water supplies. The nearest domestic wells were located east and northeast of the expansion area with buildings owned by the facility. These wells have been abandoned. See Appendix 3-IV for Well Abandonment Logs submitted to the County.

### *3.4.3 Sensitive Areas per Rule 413*

Critical Dune Area

According to the Atlas of Critical Dune Areas, critical dunes are not located on or adjacent to

the OCF Landfill property.

High Risk Erosion Area

High-risk erosion areas are located on shorelines of the Great Lakes and connecting waters where the rate of erosion is greater than one foot per year. The OCF Landfill property does not contain waterways that meet this definition.

Historic Places

No historic sites were found to be located on or adjacent to the expansion area based on a review of the State Historical Preservation office website (www.michigan.cov/mshda). In addition, email correspondence dated January 5, 2016, from the Office of the State archaeologist indicates no archeological sites on or near the site.

Endangered Species

According to correspondence from the Michigan Natural Features Inventory, the Indiana Bat, Northern Long-eared Bat, Rufa Red Knot, and Pitcher's Thistle have range that includes the OCF Landfill property. Documentation from the Michigan Natural Features Inventory is included in Appendix 3-II-D. Their report indicates there is no suitable habitat for the Indiana Bat, Rufa Red Knot, or Pitcher's Thistle in the project area. There is suitable habitat for the Northern Long-eared Bat within the project area. However, in accordance with the dichotomous key referenced in their report, no known hibernacula or roost trees are located within 1.5 miles of the project area, and tree cutting activities for this project are expected to be minimal. Therefore, no impact is expected.

### *3.4.4 Airport Safety per Rule 414*

The nearest airport to the OCF Landfill property is the DeYoung Airport in Allendale, Michigan which is more than 8 miles from the site. Figure 3-3 shows the location of the surrounding airports. This exceeds the required setback distance of 10,000 feet as described in Rule 414; therefore, a study demonstrating that the facility will not cause a bird strike hazard is not required. Further, since the facility is greater than *5* miles from the airport, notification to the airport authority is not required.

### *3.4.5 Floodplains per Rule 415*

A review of the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps shows that no flood hazard areas have been identified in the vicinity of the OCF Landfill property. FEMA's interactive map indicates the nearest 100-year flood plain is approximately

1,600 feet east of the site on Mosquito and Deer Creeks as shown on Figure 3-7. The expansion area will not be located within the 100-year flood plain.

*3.4.6 Wetlands per Rule 416*

A survey conducted by a qualified wetlands specialist identified a wetland to the north and a wetland to the east of the expansion area. A report describing the result of the wetlands survey is included in Appendix 3-II-E. The expansion area will not be located within the identified wetlands.

*3.4.7 Fault Areas and Seismic Impact Zones per Rule 417*

New Type II landfill units and lateral expansions of existing units shall not be located within 200 feet of a fault that has had displacement in Holocene time. According to the Hydrogeologic Atlas of Michigan, no faults that were active in Holocene Epoch have been located and mapped in Michigan.

New Type II landfill units and lateral expansions of existing units shall not be located in a Seismic Impact Zone where there is a 10 percent or greater probability that the maximum horizontal acceleration in lithified material will not exceed 0.10G in 250 years. According to USGS 2008 probabilistic seismic hazard mapping, the maximum acceleration for this area is 0.031G for an earthquake event with 2% probability of exceedance in 50 years.

*3.4.8 Unstable Areas per Rule 418*

Unstable areas are defined as (1) areas with active or inactive karst formations, (2) areas susceptible to sinkholes, (3) areas susceptible to mass movement of soil by gravity and (4) areas where groundwater and soil conditions may result in liquefaction or differential settlement.

According to the MDEQ GeoWebFace mapping site, no karst areas or sinkholes have been located within the vicinity of the OCF Landfill.

The OCF Landfill property is generally characterized as relatively flat topography that is not susceptible to mass movement. The only areas with relatively steep slopes are those created by construction or the placement of waste. Stability analyses have been performed for these slopes to demonstrate adequate factor of safety. The on-site soils and the fact that dynamic movement is highly improbable indicate that the area is not prone to liquefaction.

The installation of the overliner system and subsequent waste placement over the unlined portion of the landfill will cause settlement of the underlying waste. Analyses of waste

settlement and its effect on the overliner system have been analyzed for this Application and described in detail in Attachment 7.

Settlement analyses have been performed as part of this permit and projected settlement was found to be small. The small amount of expected differential settlement has been incorporated into the liner grade designs to insure that the site will function in accordance with regulations throughout its life.

*3.4.9 Vertical Expansion of Existing Units per Rule 419*

Rule 419 specifies requirements that must be made in order to vertically expand on the existing unit. This Construction Permit Application includes vertical expansion of existing units.

Rule 419 (1) Existing units meet the demonstration for airports, floodplains and unstable areas. Therefore vertical expansion is possible under Subrule (2).

Rule 419 (3) and 419 (4) The existing Phases 1-8 meet the liner requirements of Rule 421 (1) and 421 (2). The existing, older, pre-Subtitle D Cells A through E do not. An overliner system will be installed to provide a barrier between Cells A through E and vertical expansion fill. The liner system will be installed at a minimum proposed slope of 5% percent. The proposed slope evaluation was completed by CTI and is described in more detail in Attachment 7.

Rule 419 (5)(i) Existing units were constructed on natural soils which have been demonstrated to be stable. The leachate collection system for Cells A through E was constructed with schedule 80 PVC pipe. Phases 1-8 have been (or will be) constructed with SDR 11 HDPE in accordance with the previous design submittal. Attachment 7 provides demonstration that these materials can adequately withstand the additional overburden from the vertical expansion.

Rule 419 (5)(ii) Attachment 7.6 provides demonstration that the pipes for existing units will maintain a bottom slope of 0.5% or more, toward the sump, after consolidation settlement.

Attachment 7.2 provides settlement analyses and flow capacity calculations demonstrating that the leachate collection system for each unit will still function.

Rule 419 (5)(iii) Final cover will be in compliance with the requirements specified in Rule 425.

Rule 419 (5)(iv) This facility is in compliance with the act and there are currently no remedial actions required.

## 3.5 PERFORMANCE STANDARDS

### *3.5.1. Surface Water and Groundwater Standards per Rule 436*

Rule 436 specifies that in order to meet surface and groundwater performance standards, a landfill must not cause a point or non-point discharge.

Surface water runoff from active areas or areas under daily cover shall be routed to the leachate collection system. Areas under interim or final cover shall be routed to the sedimentation ponds. The discharge from the sedimentation ponds is monitored in accordance with the site's NPDES permit.

The landfill will be constructed with a geosynthetic liner system with leachate collection system to prevent migration of contaminants to groundwater. The groundwater will also be monitored in accordance with the Environmental Monitoring Plan (EMP) such that the improbable occurrence of groundwater contamination is recognized before leaving the site.

### *3.5.2. Air Quality Standards per Rule 434*

The landfill will conduct operations in accordance with Part 55 of the Act and Section 110 of the Clean Air Act. This will be accomplished by the utilization of an active gas extraction system and operational controls such as limiting the size of the active face and effectively utilizing daily, interim and final cover.

Burning of waste at the facility is prohibited in accordance with Rule 434 and burning of debris will only be conducted in designated areas in accordance with state and local requirements.

## 3.6 DESCRIPTION OF PROPOSED FACILITY

### *3.6.1. Site History*

Waste disposal at the site began in 1982. Cells A through E were permitted and constructed as a pre-Subtitle D landfill. These cells are at or near final permit grades and final cover has been installed over portions of Cells A and B. Cells A through E were constructed with a leachate collection system on a clay subgrade. The previous owner, Laidlaw Waste Systems, constructed and operated Cells A through E under Part 115 and former Act 641.

In 1995, the design of Phases 1 through 8 was upgraded to meet new Part 115 requirements. These phases were designed with clay or GCL soil barrier layer, a 60 mil HDPE geomembrane, and leachate collection/protective soil. As of April 2016, Phases 1 through 7A are constructed. Phase 7B will be constructed in 2016 and Phase 8 will not be constructed until after the lateral expansion and majority of the vertical expansion are constructed and filled.

### *3.6.2. Type and Size of Disposal Area*

The OCF Landfill is a Type II landfill accepting non-hazardous municipal and industrial wastes. The disposal area is comprised of an existing unit and a new unit. The existing unit is approximately 191.02 acres in area. The Lateral Expansion is 51.1 acres in area, and the Vertical Expansion is 152 acres in area. The vertical expansion has a separatory liner system isolating the expansion from the existing unit where it extends over Cells A through E.

### *3.6.3. Public Access*

Access to the site is through the main gate located off 68$^{th}$ Avenue on the west side of the facility. This point of entry is used by all incoming waste loads and visitors. This access road passes the main office and crosses the scales before leading to the active face via the south west side of the landfill.

Most non-local waste traffic from surrounding counties and other remote areas follows I-96 to 68$^{th}$ Avenue exit south to the main entrance. Additional access for contractor traffic is provided through the side gate on Garfield Road.

### *3.6.4. Daily Waste Receipt*

Currently, the OCF Landfill receives approximately 2,000 tons per day and consumes about 600,000 cubic yards of airspace per year. Under the Ottawa County Solid Waste Management Plan, the OCF Landfill is limited to 1.5 million tons in any one calendar year with a maximum average of 750,000 tons.

*3.6.5. Counties Served*

According to the Ottawa County Solid Waste Management Plan of 2000 with 2015 Amendment, the OCF Landfill is authorized to accept waste from the following counties:

| | | | | |
|---|---|---|---|---|
| Ottawa | Allegan | Barry | Berrien | Branch |
| Calhoun | Cass | Clare | Clinton | Eaton |
| Gratiot | Ionia | Isabella | Kalamazoo | Kent |
| Lake | Mason | Mecosta | Muskegon | Montcalm |
| Newaygo | Oceana | Osceola | St. Joseph | Van Buren |

*3.6.6. Useful Life of Facility*

As of the last aerial topo on March 30, 2016, the currently permitted facility had 4,397,000 net cubic yards of available airspace remaining. The proposed expansion provides on additional 31,823,000 net cubic yards. At the current average gate receipt of 2000 tons per day and historical compaction ratios of about 80 pcf, the site will have airspace available until 2077.

## 3.7 DESCRIPTION OF EXISTING ENVIRONMENT

*3.7.1. Natural Environment*

3.7.1.1. Topography

The natural topography of the landfill site and surrounding areas is typical of the glaciated land surface in Ottawa County, which is gently rolling, containing open fields, wooded areas and wetlands. Natural ground elevations in the vicinity range from 600 to 685 (Figure 3-1). The majority of the topography on the OCF Landfill property has been altered by waste placement; sediment pond construction and soil borrow activities. Site topography is shown on Plan Sheet 3.

3.7.1.2. Soils

Much of the original surface soils (Mancelona-Nester-Belding-Iosco Association) at the existing landfill area and OCF Landfill area have either been eliminated or replaced with fill and cover material due to the landfill construction activities. Undisturbed surface soils that remain on site are located in the eastern portion of the site.

The soils are typically poorly drained to very poorly drained sandy and loamy soils. Slope ranges from 0 to 10 percent. Fertility of the soils range from good to very good for several crops, but

poor drainage prevents the soils from being ideal for growing crops.

3.7.1.3. Hydrogeology

The bedrock and glacial geology of the vicinity is summarized below from previous hydrogeologic investigations of the OCF Landfill. The area is situated along the western part of the Michigan basin which is underlain by approximately 2,400 feet of consolidated sedimentary rocks and is mantled by as much as 400 feet of unconsolidated glacial sediments. The bedrock beneath the site is of the Marshall Formation and is overlain by approximately 200 feet of glacial sediments. The Marshall Formation consists of limestone and sandstone at the site.

The glacial sediments beneath the site are divided into four (4) stratigraphic units based on their hydrogeological characteristics; from top to bottom, they include, (1) an upper clay unit 90 to 150 feet thick, (2) an upper sand unit which is 5 to more than 50 feet thick, (3) lower discontinuous clay which has a maximum thickness of approximately 60 feet, and (4) a lower discontinuous sand unit which has a maximum thickness of approximately 30 feet. The upper clay unit consists of low permeability clays with hydraulic conductivities lower than $1.0 \times 10^{-7}$ cm/sec which is thickest to the west and thins slightly to the east. The upper sand is considered the uppermost aquifer, with groundwater flow to the southwest.

A hydrogeological investigation was completed by Engineering & Environmental Solutions, LLC of Holland, Michigan for the proposed east expansion in accordance with Rule 904. The findings of the hydrogeological investigation are provided in detail in Section 4, Volume 2 of this Construction Permit Application.

3.7.1.4. Groundwater

Additional groundwater monitoring wells have been incorporated into the site's groundwater monitoring network for the proposed east expansion. The groundwater monitoring systems, sampling and analysis, and statistical procedures have been prepared by Engineering & Environmental Solutions, LLC and are described in detail in Section 5, Volume 2 of this Construction Permit Application.

3.7.1.5. Land Use

Figure 3-4 shows the current zoning of Polkton Township. The majority of the township is zoned agricultural with limited residential, commercial and open space zoning.

In the immediate vicinity of the landfill property, surrounding land use is predominantly agricultural, pasture and light industrial associated with these uses.

Figure 3-3 shows the locations of residences proximate to the landfill property. There are 4 residences within 1000 feet of the landfill footprint, the two nearest of which are owned by Republic Services (Figure 3-4).

*3.7.2. Climate and Air Quality*

3.7.2.1. Climate

Michigan's climate is primarily determined by the prevailing westerly wind belt. This belt brings the migratory high and low pressure centers which pass rapidly through the state providing Michigan's variable weather. The air masses associated with these pressure centers are moderated by the influence of the Great Lakes.

The nearest meteorological station providing climatological data for the area is the monitoring station at the Muskegon County Airport. This station is located approximately 20 miles northwest of the project site.

Air temperatures at the monitoring station show the moderating effects of the Great Lakes that result from the lake waters' slow response to temperature change. In the spring, the cooler lake waters inhibit seasonal warming, whereas in the fall, the warmer lake waters temper seasonal cooling. The mean (30 year) annual temperature for this station is 48°F. The mean daily maximum temperature does not exceed 80°F (July), and the mean daily minimum temperature does not fall below 20°F (January.)

Precipitation, in the form of rain and/or snow, occurs throughout every month of the year. The mean (30 year) annual precipitation is 34 inches. The annual precipitation is marked by a summer maximum that results primarily from showers and thunderstorms. The mean monthly precipitation ranges from 3.9 inches in September to 1.8 inches in February. Due to the distance to Lake Michigan and the predominantly westerly wind flow, OCF does experience lake-effect snows, as do many other portions of the state. This results in a mean annual snowfall of approximately 93 inches. The magnitude of precipitation from a 24-hour, 25-year storm is approximately 4.25 inches (USDA, 1992.)

While the mean (30 year) annual relative humidity is unavailable for the Muskegon station, it is available for the Lansing monitoring station (42° 47'N 84° 36'W.) Lansing's mean annual relative humidity is 75%, with the highest average relative humidity normally occurring in the morning. Higher afternoon temperatures increase the amount of moisture the atmosphere can hold, thereby, generally lowering the relative humidity.

The middle latitude location of the OCF Landfill results in a prevailing westerly wind flow over the area. Monitoring data from Grand Rapids demonstrate that prevailing winds are from the south or southwest and average 10.0 mph (Figure 3-5.)

3.7.2.2. Criteria Air Pollutants

Air quality for Ottawa County is monitored by the Air Quality Division (AQD) of the Michigan Department of Environmental Quality. This division enforces the National Ambient Air Quality Standards (NAAQS) established for the seven criteria pollutants by the United States Environmental Protection Agency: suspended particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, hydrocarbons, lead, and ozone. Control of these pollutants is achieved via ambient monitoring, with the exception of hydrocarbon control, which is handled primarily through the AQD permitting processes. For this reason, ambient hydrocarbon monitoring is not conducted in Michigan, as is the case with most of the country.

The project site is located within Central West Air Quality Control Region (AQCR) 122. As detailed in Michigan NAAQS Attainment Status, MDNR AQD, January 2014, emission inventories, dispersion modeling and previous monitoring indicate that all of Michigan, with the exceptions of Wayne County and Ionia County, is in attainment with the air quality standards for the criteria pollutants: carbon monoxide, nitrogen dioxide, ozone, particulate matter less than 10 microns, lead, and sulfur dioxide. No other ambient monitoring occurs in Ottawa County.

3.7.2.3. Odors

The evolution of design and operational procedures at the OCF Landfill has developed systems for odor control. A combination of landfill design (such as limiting cell size) and operational procedures (such as isolation of the tipping face and consistent application of daily cover) have combined to restrict odor generation and transport from current operations. Installation of the gas collection and control system contributes to minimizing and controlling odors.

OCF Landfill is sensitive to odor issues and has limited odors by installing gas extraction wells and generously applying daily cover.

*3.7.3. Storm Water*

Currently storm water runoff at the site is collected by a network of ditches and storm water conveyance pipes around the perimeter which convey runoff to the detention ponds located in the northeast and southwest corners of the site. Additional perimeter ditches, storm water

conveyance pipes, and an additional storm water detention basin will be included with the overall storm water management system for the lateral and vertical expansion.

Precipitation that falls into the active portions of the landfill infiltrates downward through the waste and is collected by the leachate collection system. The leachate is pumped to the leachate storage tanks and then transported by tanker trucks to a permitted wastewater treatment plant (WWTP). Currently leachate is transported to SET Environmental in Grand Rapids, MI, which is permitted to discharge into the sanitary sewer, which leads to the City of Grand Rapids WWTP. OCF Landfill will continue to manage leachate for disposal in this or similar manner, although direct connection to a municipal sanitary sewer system may be a viable option in the future.

### *3.7.4. Floodplains*

A review of the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps shows that no flood hazard areas have been identified in the vicinity of the OCF Landfill property. The closest flood hazard areas mapped by FEMA are located in Deer Creek. Therefore, maximum 100-year floodplain elevations of surface waters proximate to the facility would remain within their banks at elevations of approximately 630 to 640.

### *3.7.5. Endangered or Threatened Species*

A description of endangered or threatened species is given in Section 3.4.3.

### *3.7.6. Historic or Archaeological Sites*

Documentation of the absence of historic or archaeological sites is given in Section 3.4.3.

### *3.7.7. Sites of Environmental Contamination*

A search conducted by Historical Information Gatherers, Inc., did not reveal any known sites of contamination within a one-mile radius of the site. A copy of this report is provided in Appendix 3 -III. Two sites were identified from the MDEQ LUST website as sites with leaking underground storage tanks, as discussed in the Hydrogeological Investigation Report Section 1.1. These sites are Lemmen Oil and BP in Coopersville located at 125 68$^{th}$ Avenue and 1169 E. Randall, respectively.

### *3.7.8. Significant Public Resources*

Significant Public Resources such as parks and recreation areas are not proximate to the site. There are other public resources that are proximate to the OCF Landfill such as:

- A car dealership, gas station, and other retail is located less than one mile from the site,
- Residential areas are within one mile of the site, primarily north of Interstate I-96.

### *3.7.9. Airports*

A description of the proximity of the site to airports is given in Section 3.4.3.

## 3.8 GOVERNMENTAL PERMITS AND LICENSES

In addition to those required state and federal permits identified in Section 3.4, the following governmental permits are required for the landfill operations:

- Inclusion in the Ottawa County Solid Waste Management Plan (2000) and subsequent amended Plan;
- Polkton Township and Ottawa County Host Community Agreement;

## 3.9 STATEMENT OF ENVIRONMENTAL IMPACTS

### *3.9.1. Topography*

OCF Landfill will rise to a final height of approximately 900 feet above msl. This elevation is 215 feet higher than the existing natural grade. Final waste slopes of OCF Landfill range between 4% and 25%.

The height of OCF Landfill may have a number of direct environmental impacts, including surface water runoff and aesthetics. Each of these effects is discussed more fully in Section 3.11.

### *3.9.2. Soils*

OCF Landfill construction will require removal of surface soils within the permitted footprint as well as the north east pond area. These soils will be removed, along with subsurface soils, to provide cover material for the existing landfill.

Although minimal, the removal of soils is expected to have some environmental impact on surface water flow and flora and fauna. These impacts are discussed in Section 3.11.

### *3.9.3. Geology*

The design for OCF Landfill requires removal of the subsurface soils in Phases 8 through 13 to approximately 65 feet below grade. The excavated soils will be used for cover material, facility access roads, and other operational needs at the landfill. The subsurface soils to be removed are predominately silty clay. Following removal of the subsurface soils the area will be graded to obtain the design top of liner grades.

*3.9.4. Groundwater*

The design of OCF Landfill incorporates numerous features designed to protect groundwater quality at the site. In addition, the design takes advantage of existing natural conditions favorable to a landfill at this location.

3.9.4.1. Groundwater Quality

The proposed design of OCF Landfill shall provide protection to the groundwater in the uppermost aquifer in the site (i.e., the first aquifer encountered that could be impacted by landfill activities) from any environmental impacts.

Protection to groundwater will be accomplished by maintaining adequate separation from groundwater, a bottom liner system, an active gas collection and control system and perimeter groundwater monitoring.

Waste placed as a result of the expansion will be underlain by a liner system with a leachate collection system. This includes the new liner system under the lateral expansion, the existing liner system on those areas where the vertical expansion occurs and an overliner system separating expansion waste from the underlying Cells A through E.

3.9.4.2. Flow Direction/Rates

It is anticipated that the expansion will cause minimal impact on groundwater flow. In the sand aquifer, the proposed expansion will not affect the thickness or transmissivity. Some minor, local effect may be realized because infiltration will be eliminated within the landfill footprint.

*3.9.5. Impacts to Biological Resources*

Because the majority of the area surrounding the proposed OCF Landfill expansion has been altered by the construction of the existing OCF Landfill or by previous farming, the impacts to biological resources should, in general, be very minor and temporary. The following details the anticipated impacts to biological resources that may occur as a result of the construction of OCF Landfill.

3.9.5.1. Terrestrial Resource Impacts

*Flora*

The majority of the footprint area proposed for OCF Landfill is located either on top of an existing landfill or on an area that is dominated by old field vegetation. The landfill footprint and associated drainage ditches will result in the removal of approximately 65 acres of old field

vegetation.

*Fauna*

The impacts to fauna are expected to be minimal. Some small animals, such as mice, shrews, moles and voles living in the field vegetation areas on site may be affected by construction activities although the surrounding area provides ample habitat.

Although some of the existing drainage ditches on the eastern portion of the OCF Landfill site will have to be re-routed to accommodate the expansion area, no aquatic resources will be directly impacted by construction of the landfill footprint, detention pond or associated ditches.

3.9.5.2. Impacts to Biotic Community Surrounding the Footprint

The construction of OCF Landfill may have minor impact to some of the animals in the area whose range extends into the area proposed for the expansion. However, the surrounding area has extensive similar areas of open fields and tree line. Impacts are expected to be minor.

3.9.5.3. Endangered Species

The only endangered species known to have range within the area are the Indiana Bat, Northern Long-eared Bats, Rufa Red Knot, and Pitcher's Thistle. As documented in 3.3.3, the expansion area does not provide habitat for the Indiana Bat, Rufa Red Knot, and Pitcher's Thistle. There are no known hibernacula or roost trees for the Northern Long-eared bat within 1.5 miles of the project area, and minimal tree removal is required for this expansion. Therefore, no impact is expected.

*3.9.6. Impacts to Surface Hydrology and Water Quality*

*Surface Hydrology*

The expansion will cause an increase in the amount of surface water runoff due to the increase in slope length. The effects of this increase will be controlled through the use of storm water controls such as diversion terraces, downdrains, ditches, and detention ponds. Therefore, the overall effect of the expansion on hydrology will be minimal.

*Floodplains*

The only potential impact to nearby floodplains may result from the inherent tendency of landfills to increase surface water inputs by decreasing the amount of water percolation that may occur in the area of the landfill footprint itself. This potential impact, however, will be managed by directing runoff to engineered detention ponds. The presence of wetlands and

other low areas adjacent to nearby receiving streams indicates that ample flood water storage capacity exists outside of the project area. This capacity will further attenuate controlled discharges from detention ponds.

*Water Quality*

OCF Landfill is designed to have minimal impacts to surface water quality. Precipitation that comes in contact with waste material being deposited within the landfill will be collected by the leachate collection system and then transported offsite for treatment and disposal. This water will not come in contact with surface waters until treatment is complete. Consequently, oxygen-demanding wastes and other contamination problems associated with landfill leachate should not impact surface waters.

Storm water from the expansion area will drain to the existing northeast detention pond after flowing through perimeter ditches and the new proposed pond located north of the expansion area. The existing and proposed ditches and ponds will reduce sedimentation loading; however, following significant precipitation events, the storm water discharge may have increased turbidity. No additional discharge locations are proposed for the expansion.

Construction of the landfill cells and associated drainage ditches will increase erosion and transport of sediments from large areas of bare soil. Sediment loadings will be minimized by installation of soil erosion protection measures. The potential for the erosion of suspended sediments is not expected to increase from current conditions, although the length of time that erosion occurs will increase given the extended life of the landfill.

Through the use of existing and proposed storm water control features impact to the current receiving streams are expected to be similar to the current conditions.

3.9.7. *Climate and Air Quality*

3.9.7.1. Climate

The construction and operation of OCF Landfill will have no effect on the local climate of Polkton Township or west central Michigan. While changes in cover and land use can affect the microscale climate experience in a given area, the majority of the land to be used for the expansion is currently utilized agricultural or open land. Because OCF Landfill will retain the open nature of the site, no net climatic variation is anticipated. Other parameters determining the meteorology and climate of the region will not be affected by landfill construction or operation.

### 3.9.7.2. Criteria Air Pollutants

Emission of five of the criteria pollutants (carbon monoxide, sulfur dioxide, ozone, nitrogen dioxide, and lead) from a sanitary landfill facility is considered negligible. Hence, the emission of (1) particulate matter or (2) landfill gas (primarily methane and other hydrocarbons that are ozone precursors) remain the only concern. As discussed below, fugitive dust control during operation and active gas collection following closure will help control emission of these pollutants.

*Particulate Matter*

Fugitive dust emissions will be minimized by design and operational features of the landfill. The principal features of the dust control include sweeping of paved haul roads and wetting of unpaved haul roads, as needed. Specific details of the dust control can be found in the Operations Plan (Section 8 of this Construction Permit Application).

*Landfill Gas*

Emissions of landfill gas are currently regulated under the New Source Performance Standards (NSPS). In response to this regulation, OCF Landfill has installed an active gas collection system to minimize landfill gas emissions. This practice will continue with the expansion. Collected gas is routed to the waste-to-energy facility for the destruction of methane and organics.

The OCF Landfill has been in operation since 1982. Overall, the proposed expansion will not adversely affect the air quality in Ottawa County. The emissions from the site will not be large enough or of a chemical composition to be measurable on a regional scale. Therefore, the construction and operation of OCF Landfill will not affect Ottawa County's efforts to meet the National Ambient Air Quality Standards established pursuant to the Clean Air Act.

### 3.9.7.3. Odors

Gases produced by the decomposition process are a potential source of odors. The operation of the active gas collection system will reduce landfill gas as a source of odors upon closure. The incorporation of a geomembrane in the construction of the final cap will also aid in the control of odors.

As future odor control activities will remain at least as stringent as those presently utilized, odors generated by the facility are expected to remain commensurate with existing conditions. Hence, based on the current isolation distance, the landfill is not expected to adversely impacting surrounding neighbors.

*3.9.8. Aesthetic Impacts*

Construction of OCF Landfill will have both short-term and long-term aesthetic effects on the surrounding area. Long-term effects will occur as final grades are achieved. The proposed final elevations of the landfill will alter existing vistas and generally replace them with a view of a sloped, vegetated hill. Short-term effects include impacts caused by construction and daily filling operations.

3.9.8.1. Vista Impacts

The impacts of the final topography of OCF Landfill are determined by final elevations, surrounding topography, and types and size of vegetative screens. The vistas primarily impacted by the lateral expansion will be those from the east towards the landfill, as the lateral expansion will occur on the east portion of the property. Views from the north will remain essentially obstructed by topography and vegetation, while views from the south and west where the currently permitted landfill is the dominate feature, will be primarily impacted by the vertical expansion.

3.9.8.2. Daily Landfill Aesthetic Impacts

Daily operations of the landfill can result in episodic, localized, aesthetic effects. Both blowing litter and landfill traffic may be visible from the area surrounding the landfill. Additionally, noise generated from operation may be audible in the surrounding area. For a great deal of the expansion, both existing landfill features and isolation distances will reduce the effects of daily operations. Noise and visual impacts of landfill operations along the eastern landfill boundary can be expected to increase temporarily as the landfill expands. However, overall conditions will remain essentially constant. Therefore, the resulting impacts are not expected to increase significantly from current levels.

*3.9.9. Land Use*

The OCF Landfill is surrounded by areas of existing and planned agricultural, commercial and industrial uses. OCF Landfill is compatible with, and generally non-restrictive to, these land uses as discussed by below.

3.9.9.1. Agricultural Use

Proposed expansion is to take place on land zoned agricultural although it is not currently used for agricultural purposes. The expansion acres are small compared to the amount of land zoned agricultural in the immediate area, so the impact is minimal. In addition, surrounding

agricultural activities consist of functions that are, for the most part, insensitive to carefully planned and monitored waste disposal operations. As a result, the expansion is not expected to impact off-site agricultural activities.

3.9.9.2. Residential Use

The proposed expansion will not significantly influence present or planned residential use near the site for several reasons. OCF Landfill is located on a site that has hosted disposal activities since the early 1980s. The expansion would constitute a continuation of this land use. The fact that operations are not expected to increase significantly and that landfill operations have been designed to minimize nuisances will result if the proposed expansion having little influence on existing and planned residential use near the site.

3.9.9.3. Commercial/Industrial Use

The proposed modification will not significantly affect existing or future commercial uses near the site. These uses consist primarily of daytime employment functions that occur indoors. As such, they are relatively insensitive to disposal operations. Additionally, there are not proposed changes in the land use plans for this category, so the expansion represents a continuation of existing conditions.

3.9.9.4. Open Space

As OCF Landfill will be no closer to recreational facilities than previous disposal operations, the presence of the proposed expansion will have no greater impact than current operations.

*3.9.10. Employment*

Permanent employment at the facility is not expected to fluctuate significantly as a result of the construction of OCF Landfill; however, during construction temporary employment may increase.

*3.9.11. Sites of Environmental Contamination*

The proposed expansion will not significantly increase the risk of environmental contamination. Therefore, the impact should be neutral.

*3.9.12. Public Resources*

The majority of the public resources are to the north of the landfill. The expansion will be to the east. Therefore, no increase in impact to public resources is expected. The only impact will be that truck traffic, odors and construction equipment noise will continue longer into the future

when compared to the current permit.

## 3.10 ALTERNATIVE ACTIONS

*3.10.1. A "No Construction" Alternative*

3.10.1.1. Disposal of Ottawa County and other Western Michigan Waste

The OCF Landfill remains the largest Type II landfill in Ottawa County available to accept sanitary waste generated within the county. In addition, as in the Ottawa County Solid Waste Management Plan, 2000, amended 2015, the landfill is also authorized to provide disposal capacity for other Michigan Counties, subject to the restrictions listed in the Solid Waste Management Plan.

If the proposed expansion is not constructed, the consequences are that the provisions of the Ottawa County Solid Waste Management Plan would need to be modified to provide solid waste disposal capacity. In essence, another solid waste landfill site would have to be located in the County or agreements for disposal capacity with other landfill sites in the State, if available, would need to be obtained. Additionally, the counties specifically authorized in the plan would potentially experience similar difficulties with proper disposal of their wastes. Therefore, this alternative would result in merely shifting the fundamental problem of a lack of solid waste disposal capacity. Moreover, landfill space is at a premium. Without the continued addition of landfill capacity, west central Michigan will ultimately run out of landfill space. Other disposal options cannot fully address this need. Finally, if landfill space is perceived as scarce, market forces will drive up rates and cause additional costs for disposal to the public.

Alternatives to the proposed disposal strategy, such as construction of additional landfill space elsewhere, reduction of the size of this landfill expansion, alternative disposal techniques and waste reduction are discussed in the following sections.

3.10.1.2. Site Conditions

If the "air space" proposed for OCF is not developed as a landfill, it will retain the characteristics of a closed landfill. As discussed previously, the natural resources of the site are not extraordinary. It has been used for agricultural and disposal purposes in the past. However, due to the topography resulting from the construction of a landfill, it is highly unlikely that the area would ever again be viable for productive agricultural use.

3.10.1.3. Conclusions About a "No Construction" Alternative

It is clear that the "no construction" alternative is not preferred. The major reason for this

conclusion is the lack of landfill capacity throughout west central Michigan, specifically Ottawa County. Until there emerges a viable alternative to landfilling the waste produced by modern society, additional landfill capacity is necessary. Without the construction of OCF, significant waste disposal problems will arise for Ottawa County and may arise for surrounding communities.

*3.10.2. Other Site Configurations and Designs*

One of the principal design considerations regarding the final configuration of OCF Landfill was to maximize the disposal volume that this expansion would provide. This was paramount for several reasons. First, west central Michigan has limited landfill capacity. It is desirable for a new project to address this need. Secondly, because a portion of OCF Landfill will be a lateral and vertical expansion to existing fill, the publicly perceived impact of additional landfill space will be minimized. Thirdly, as the population density in west central Michigan continues to increase, suitable locations, which provide sufficient horizontal isolation distance, become more and more scarce. Finally, it is economically preferable to maximize the site of the refuse area of a landfill. The protective features of a landfill, such as the lined bottom and cap construction, leachate collection, gas management, groundwater monitoring, etc., are extremely expensive. By maximizing the area available for refuse, the costs of these features become proportionally lower per cubic yard of airspace. This, in turn, keeps disposal costs to a minimum.

Past disposal activity at the OCF Landfill has significantly altered the original topography on this portion of the site. The remainder of the area proposed for OCF Landfill lies vacant. As such, the proposed landfill expansion did not have to be designed around any extraordinary or remaining natural features. The most efficient and effective use of this land is to fully utilize it for landfill space. Reducing the space used for refuse was considered to minimize impact to adjacent landowners. However, since no unique natural resources were involved, such a reduction would ultimately lead to less available disposal volume and increased landfill costs.

*3.10.3. Alternative Site Locations*

Alternative site locations were not considered, as the landfill wishes to locate the proposed OCF Landfill expansion on top of, and adjacent to, the footprint of the existing landfill phases on site. Locating the expansion in this manner facilitates both maximal use of the area and integration with other waste management operations being conducted at the landfill.

Additionally, this expansion site is specifically identified in the Ottawa County Solid Waste Management Plan as providing a portion of the required disposal capacity. Finally, sites in west

central Michigan which provide sufficient isolation distance are increasingly at a premium. The most prudent use of available resources in the area is to expand the existing landfill footprint.

*3.10.4. Short-Term Alternatives*

Short-term alternatives to the construction of OCF include; I) trucking waste to other landfills, or 2) siting additional landfill capacity within Ottawa County. However, there is no short-term alternative that will eliminate or significantly reduce the need for additional landfill capacity. As discussed previously, this would be simply a shifting of the fundamental problem, which is a lack of solid waste disposal capacity. Hence, the construction of OCF Landfill expansion remains the preferred alternative.

*3.10.5. Long-Term Alternatives*

Long-term alternatives to sanitary landfilling presently include recycling and incineration. While these alternatives have roles in comprehensive regional solid waste management strategy, limitations continue to exist as to their effectiveness in diverting solid waste from sanitary landfilling. Moreover, even if recycling and incineration were used to the greatest extent possible, landfilling would still be required, as described below.

3.10.5.1. Recycling

While recycling of source-separated material will reduce the total volume of solid waste, success is currently totally dependent on the market for the recovered materials and a high level of dedicated participation by community residents. This market is relatively unstable, with little to no demand, at times, for high volume commodities. Moreover, experience has shown that a high level of resident participation is slow to build. Once participation is established, waste stream volume reductions can be achieved by recycling resulting in a corresponding decrease in waste that is ultimately landfilled or incinerated. As such, recycling goals of this magnitude have been incorporated in the *Proposed Ottawa County Solid Waste Management Plan*. In spite of the difficulties noted, the recycling of waste material can be, and has been, incorporated into the operation of OCF Landfill.

OCF is dedicated to maximizing success of their recycling efforts. This dedication is shown, in part, by the agreement in the Host Community Agreement, to work with the Township and County to develop and institute a recycling program. Even given maximum public, governmental, and corporate participation, there is still a need for landfill facilities in the area. Therefore, simply expanding the resource management efforts will not eliminate the need for landfilling.

3.10.5.2. Incineration

Incineration can reduce the volume of solid waste by 75 percent or more, and generate significant electrical power and steam in the process. The percentage of waste reduction is dependent upon the non-combustible material in the waste stream and the amount of residual ash that is generated from the incineration of the waste stream.

Although the aforementioned advantages are provided by the incineration process, the technology also has a number of shortcomings that must be addressed. These shortcomings include:

- Large capital investment;
- High operational and maintenance costs, particularly in the waste handling systems which sort and recondition the solid waste;
- The necessary careful separation of materials that either do not burn well or are inert, and the disposal of these materials (examples include tires, large appliances, tree stumps, and metal components of smaller discards);
- The separation of materials, which, if not removed, result in the ash being designated as a hazardous waste (examples include lead-acid batteries, fluorescent light bulb ballasts, etc.);
- Need for standby facilities to store and handle wastes during times when the incinerator may be down for normal maintenance or repairs;
- Need for access to sanitary landfilling capacity for the disposal of (1) both ash residues and the noncombustible wastes, and (2) the full waste stream, if the incinerator is not operating for extended periods;
- Release of air toxins as a result of incomplete combustion in the incineration process

As such, incineration provides only a possible long-term alternative. Given the public perception of municipal waste combustion facilities, construction of an incinerator either in, or near, the area proposed for OCF Landfill was not seriously considered.

3.10.5.3. Conclusions About Long-Term Alternatives

In summary, the primary limitation to the available long-term alternatives to landfilling identified is their inability to handle the sheer volume of waste, which is generated in this area of west central Michigan. Until other cost-effective and technologically sound alternatives can

be developed and brought on line, the construction and operation of additional solid waste sanitary landfills will continue.

*3.10.6. The Proposed Alternative*

Based upon the review of other options, the proposed location and configuration of OCF is the desired alternative for the following reasons:

- Minimizes siting problems by locating OCF on top of, and adjacent to, an existing facility;
- Maximizes use of available land, thereby reducing the cost per cubic yard of air space;
- Facility will remain near the communities generating the waste it will contain,
- Landfill expansion at this site is part of the Ottawa County Solid Waste Management Plan to meet disposal needs.

## 3.11 UNAVOIDABLE ADVERSE IMPACTS

The construction of OCF Landfill, as proposed, can be expected to have some adverse impacts to the existing environment, including impacts on air quality, noise and aesthetics.

Air quality related impacts associated with the landfilling of solid waste are episodes of dust, litter and odors. Fugitive dust has been minimized by paving the entry road to the site, sweeping the roads as necessary during working hours, use of dust suppressant's and re-vegetation of the landfill area as soon as possible. Litter will be minimized by screens, fencing and perimeter berms, as well as periodic patrolling by landfill staff. Landfill odors will be minimized by covering solid waste with suitable cover materials at the end of the day, maintaining the working face at the minimum size allowable by operations and maintenance of isolation distances from nearby receptors. Odors will also be controlled by the leachate and gas collection systems further reducing the potential for problematic odor episodes. However, while the use of the preventative measures outlined above will minimize the associated air quality problems, they cannot be completely eliminated.

Noise levels for the construction of OCF Landfill should be commensurate with those experienced during the construction of the most recent phase. The only significant adverse noise level impact is predicted to be for outdoor noise receptors closest to the expansion area. Because of the proximity to receptors along 68$^{th}$ Avenue, noise levels during construction may

cause mild annoyance or, during worst-case conditions, interfere with outdoor conversation.

The construction of OCF Landfill above currently permitted landfill grade will alter the topography of the site and hence, the aesthetics of the area; however, the expansion will be built on top of and adjacent to the existing landfill. Therefore, much of the visual impact to the area has already occurred, especially when considering views from the west, north and south. The major change in visual aesthetics will occur as the expansion nears completion and the landfill elevation increases. The impact will be minimized by maintaining tree lines and a perimeter screening berm to conceal landfill operations.

The excavation of disposal cells will require the removal of all vegetation and soils from within these cells. This removal will cause some unavoidable short-term impacts, such as increased erosion from wind and surface water until vegetation can be re-established. As a result, the particulate loading to surface waters in the immediate vicinity and downstream of the excavation activities can be expected to increase. However, by closely maintaining erosion and flow, impacts to surface and groundwater will be minimized. In addition, sedimentation controls (silt fence, straw bales, etc.) will be employed during construction.

## 3.12 PROTECTIVE AND CORRECTIVE MEASURES

Mitigating measures with respect to OCF Landfill are those actions taken which will minimize the impacts or risks associated with the construction and operations of the landfill expansion.

OCF will be designed and constructed with the best technology and techniques presently available, including:

- Incorporation of design features which comply with the most recent requirements of Michigan's Solid Waste Management Act;
- Construction of a leachate collection system to enhance groundwater protection and minimize odor generation;
- Incremental construction and operation of a gas collection and electrical generating station in order to eliminate the odors and safety hazards associated with landfill gas;
- Maintaining vegetation strips around perimeter to minimize impacts resulting from daily operations.

OCF Landfill will be operated with the best technology and techniques presently available,

including:

- Maintenance of landfill operations at a minimum of 100 feet from adjacent residences to reduce incidents of odors, noise, litter and dust;
- Compaction of new refuse and application of daily cover and approved alternate daily cover to minimize odors and other nuisances;
- Placement of intermediate and final cover as rapidly as is practical;
- Utilization of special procedures, such as direct burial of particularly odorous materials, increased frequency of temporary cover, scheduling tipping during cooler morning hours, and use of a smaller tipping face, in order to minimize odors and other nuisances during unusual circumstances, such as extremely hot weather, reshaping of previously buried refuse, and construction of gas collection wells;
- Sweeping of the main interior access road;
- Implementation of fugitive dust control measures;
- Utilization of two detention ponds to improve water quality;
- Control of nuisance animals.

OCF Landfill will maintain a positive relationship with local communities and township government in the following ways:

- Attendance at township meetings and maintenance of an on-going dialogue with township officials;
- Continuance of contact with the landfill's closest residential neighbors to discuss any complaints which they may have and/or address general questions concerning operations;
- Continuation of the recycling program, designed to minimize the amount of wastes requiring landfilling;

The mitigating measures reflect use of engineering design and operational methods, which effectively minimize the impacts associated with the landfilling of solid wastes.

An alternative to using engineering design or operational methods to mitigate the risks and hazards is to limit or reduce the size of the landfill. However, reducing the size will not change the magnitude of ecological risks since they are expected to be minimal in any case, and do not

adequately address the need for additional landfill space as required by the Ottawa County Solid Waste Management Plan. Such an alternative still requires that additional solid waste landfills be constructed and operated to solve the solid waste disposal needs of Ottawa County. One of the factors in favor of constructing additional landfill space in this location is the proximity of existing and permitted landfill operations. Perceived problems, such as possible changes in land values and aesthetic impacts, are reduced due to the fact that proposed expansion is being constructed adjacent to and over the existing landfill. The OCF Landfill is also centrally located among some of the largest waste producers in west central Michigan, reducing the risks associated with lengthy travel to a disposal site.

## 3.13 REFERENCES

Applied Science & Technology, Inc., Environmental Assessment OCF Expanded Sanitary Landfill, July 1994.

Ottawa County Solid Waste Management Plan, March 2000.

Michigan Department of Environmental Quality Solid Waste Management Act Administration Rules, April 12, 1999.

Michigan Department of Environmental Quality, Wetland Protection R281, July 8, 1988.

Michigan Department of Environmental Quality, Air Quality, Division Web Page www.deg.state.mi.us/agd.

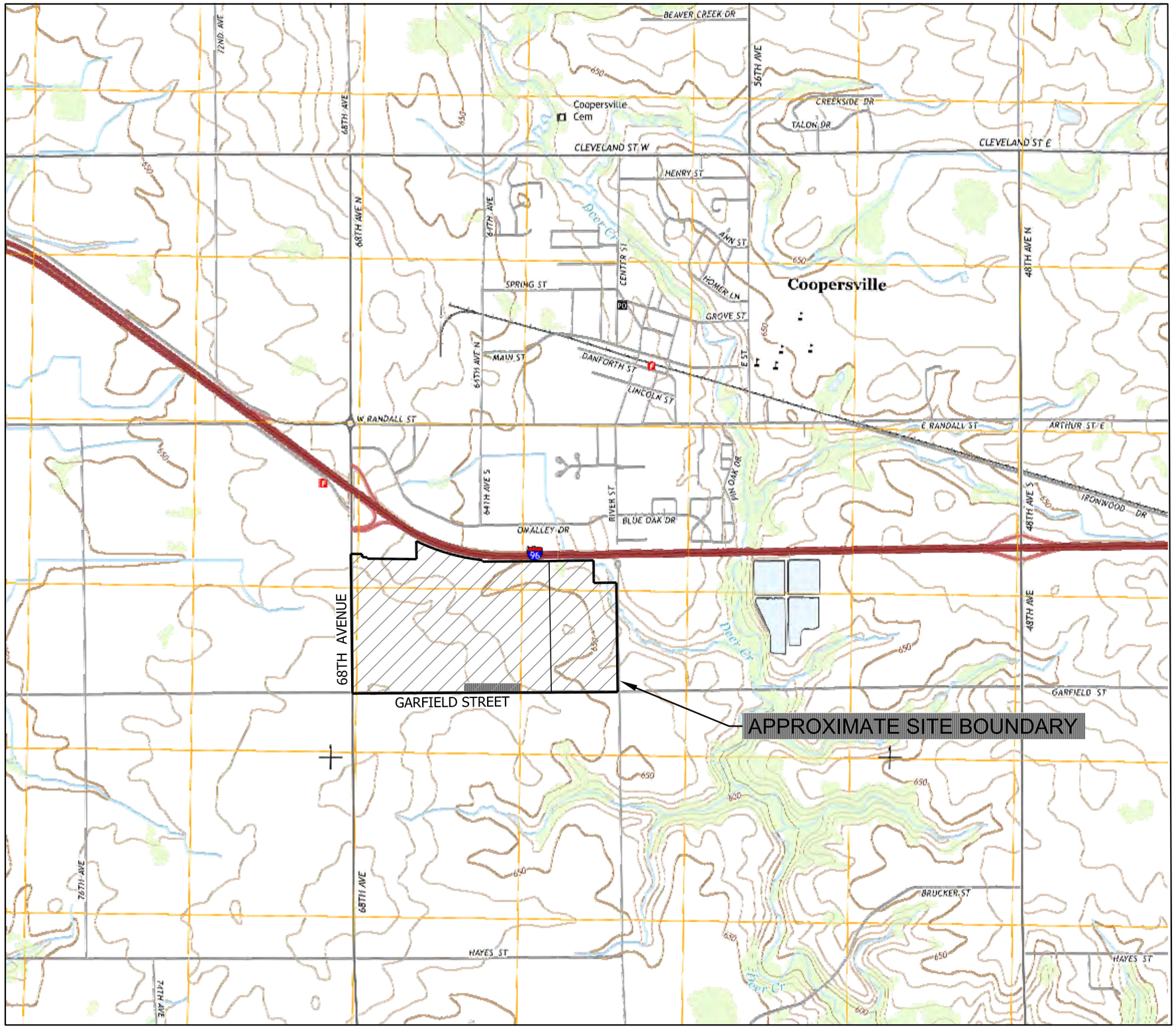
Federal Aviation Administration Advisory Circular 150/5200-34, "Construction or Establishment of Landfill Near Public Airports", August 26, 2000.

U.S. Census Bureau Web Page.

State Historic Preservation Office "Michigan Historic Sites Online", December 12, 2000.

**ATTACHMENT 3-I**

ENVIRONMENTAL SITE ASSESSMENT FIGURES





QUADRANGLE LOCATION

N

2000 0 1000 2000 4000

1 inch = 2000 ft.

**MAP SOURCE:**
IMAGE FROM USGS QUAD MAP: COOPERSVILLE, MI 2014

PREPARED FOR:
OTTAWA COUNTY
LANDFILL, INC.
15550 68TH AVE.
COOPERSVILLE, MI

# PROJECT SITE LOCATION AND SURROUNDING TERRAIN CONSTRUCTION PERMIT APPLICATION

OTTAWA COUNTY FARMS LANDFILL
OTTAWA COUNTY, MICHIGAN

| No. | DATE | REVISION DESCRIPTION |
|---|---|---|

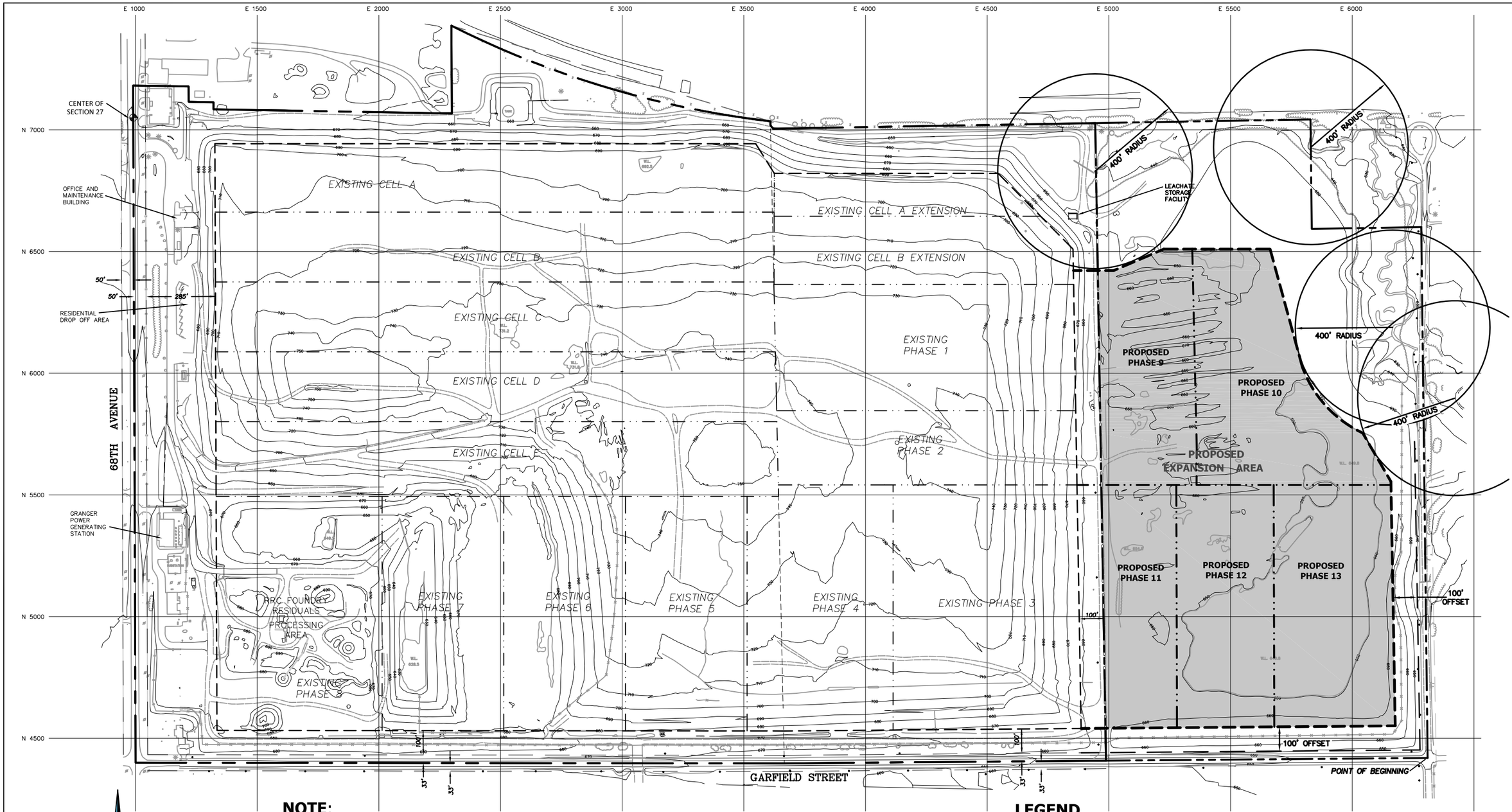
Weaver Consultants Group

WEAVER CONSULTANTS GROUP
400 ANN STREET N.W.
SUITE 201A
GRAND RAPIDS,
MICHIGAN 49504
(616)-458-8052
www.wcgrp.com



DRAWN BY: JDA
REVIEWED BY: KRK
DATE: 2/02/2016
FILE: 0120-685-11-03
CAD: FIG_3-1-1_SITE.dwg

FIGURE 3-1




## NOTE:

1. EXISTING TOPOGRAPHICAL INFORMATION FROM AERIAL SURVEY PERFORMED BY COOPER AERIAL SURVEYS, CO., APRIL 13, 2015.

## LEGEND

- PROPERTY LINE
- SOLID WASTE BOUNDARY– EXISTING UNIT
- SOLID WASTE BOUNDARY– EXPANSION AREA
- PHASE BOUNDARY– EXISTING UNIT
- PHASE BOUNDARY– EXPANSION AREA
- SECTION CORNER
- BM BENCHMARK
- EXISTING WELLS

N

SCALE: 1" = 400'

0 200' 400' 800'



R:\PROJECTS\0120 - Allied\0120-685 Ottawa County (MI)\11\02-03 Expansion Permit\CADD\Figures\ATTACH 3\FIG_3-1-2_EXIST_COND.dwg,kkinley,September 8, 2016

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# EXISTING CONDITIONS
# CONSTRUCTION PERMIT APPLICATION

OTTAWA COUNTY FARMS LANDFILL
OTTAWA COUNTY, MICHIGAN

| No. | DATE | REVISION DESCRIPTION | BY: |
|---|---|---|---|
| 1 | 9/08/16 | REVISED PER MDEQ COMMENTS, DATED 8/19/16 | JDA |

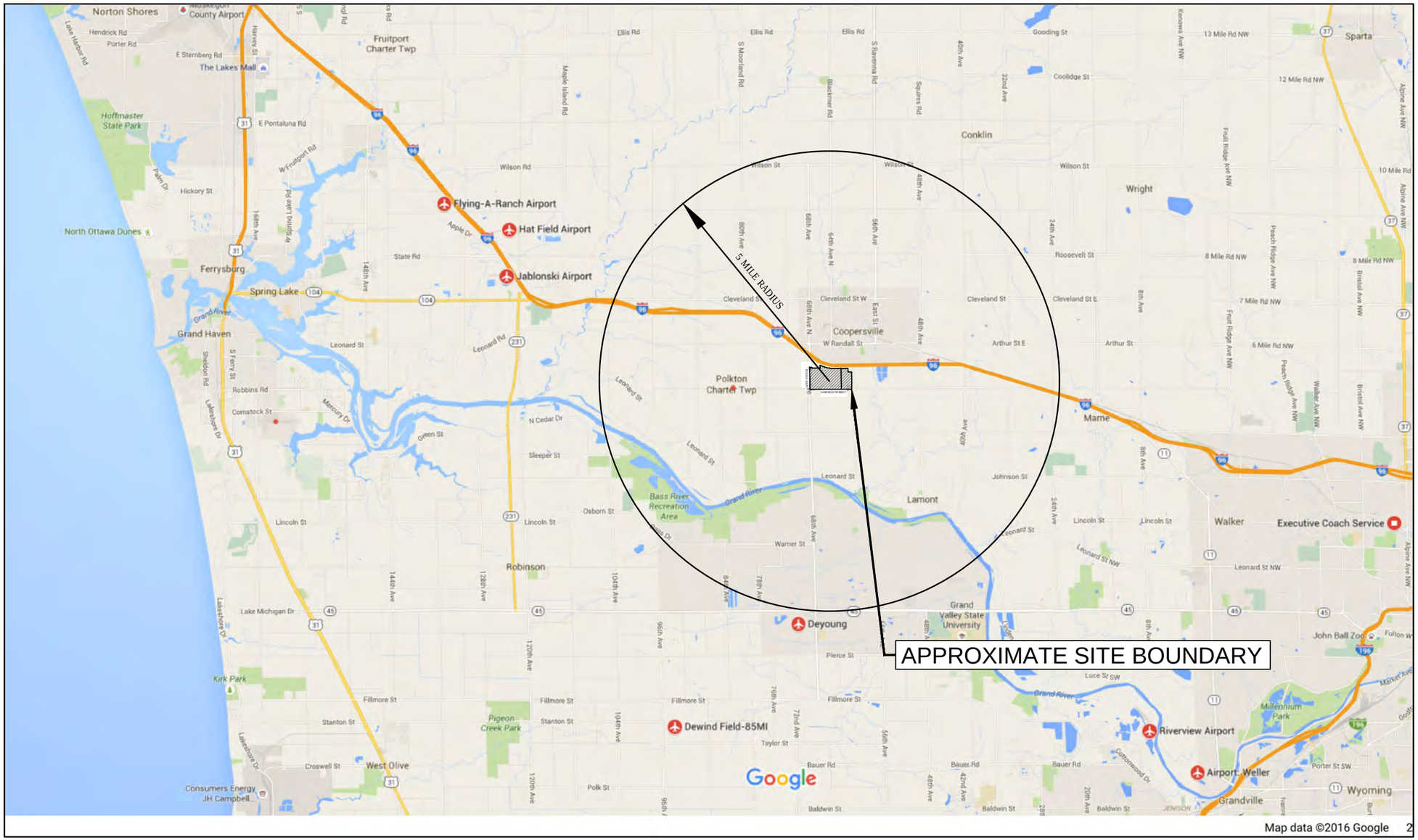
Weaver Consultants Group

WEAVER CONSULTANTS GROUP
400 ANN STREET N.W.
SUITE 201A
GRAND RAPIDS,
MICHIGAN 49504
(616)-458-8052
www.wcgrp.com



DRAWN BY: JDA
REVIEWED BY: KRK
DATE: 3/10/2016
FILE: 0120-685-11-03
CAD: FIG_3-1-2_EXIST_COND.dwg

FIGURE 3-2





**MAP SOURCE**: IMAGE FROM GOOGLE MAPS

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# AIRPORTS WITHIN PROXIMITY OF PROJECT SITE
# CONSTRUCTION PERMIT APPLICATION

OTTAWA COUNTY FARMS LANDFILL
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WEAVER CONSULTANTS GROUP
400 ANN STREET N.W.
SUITE 201A
GRAND RAPIDS,
MICHIGAN 49504
(616)-458-8052
www.wcgrp.com




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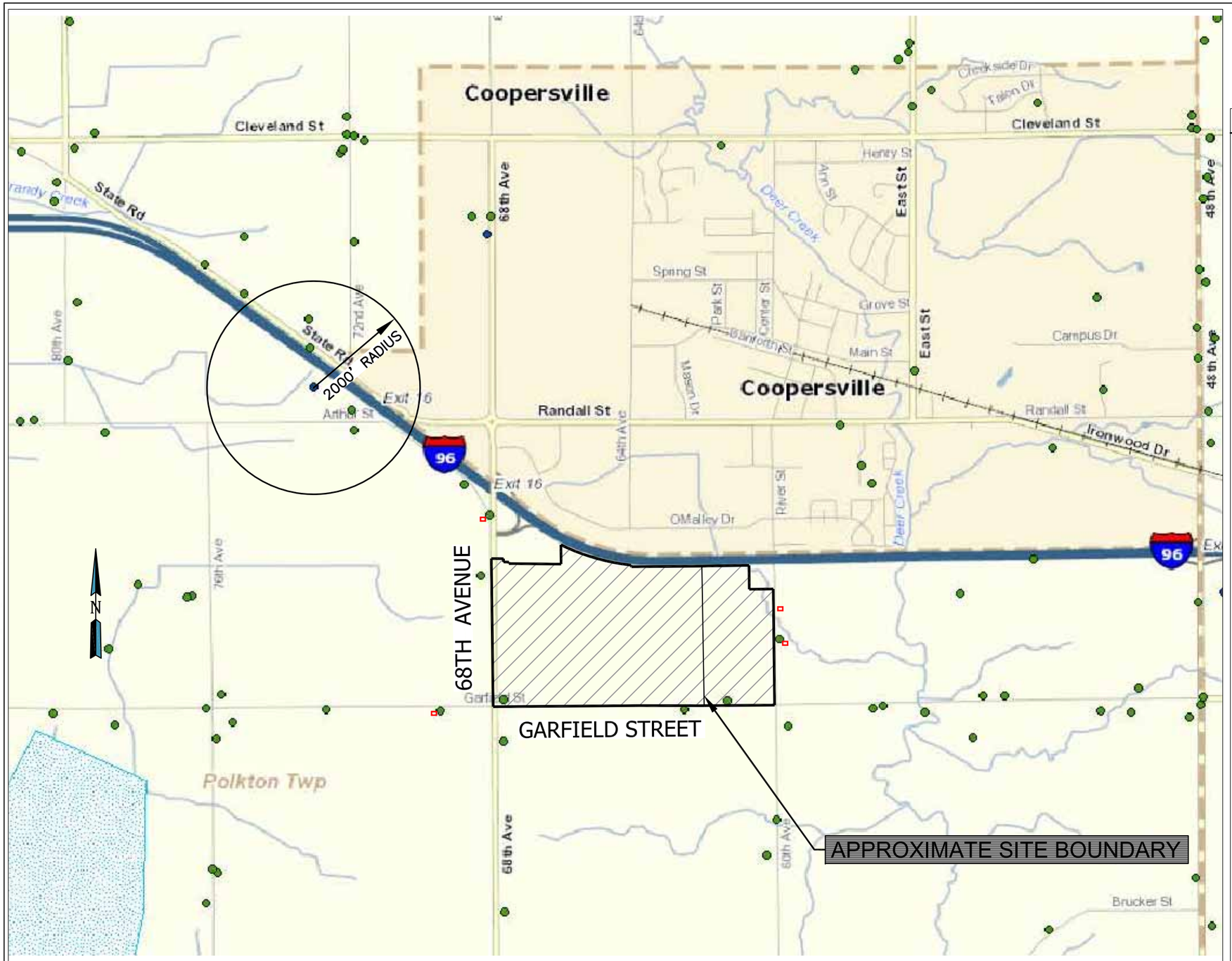
FILE: 0120-685-11-03
CAD: FIG_3-1-3_AIRPORTS.dwg

FIGURE 3-3



W:\Grand Rapids\Grand Rapids - R Drive\PROJECTS\0120 - Allied\0120-685 Ottawa County (MI)\11\02-03 Expansion Permit\CADD\Figures\ATTACH 3\FIG_3-1-3_AIRPORTS.dwg;kkinley;April 6, 2016




**MAP SOURCE:** IMAGE FROM MDEQ GeoWebFace site

## LEGEND

**Critical Dune Areas**
- Areas that exhibit dune-like characteristics
- Barrier dunes
- Exemplary dune associated plant community
- Designated Dune Areas
- Michigan Watersheds
- Great Lakes Watershed
- Wellogic Type I Water Wells
- Wellogic Type II Water Wells
- Wellogic Water Wells

**Wellhead Protection Areas**
- Traditional Wellhead Protection Area Delineation
- Type 1 Provisional Wellhead Protection Area
- Type 2 Provisional Wellhead Protection Area
- Low Vulnerability Wellhead Area

**Points of Geologic Interest**
- Bedrock Paleozoic
- Bedrock PreCambrian
- Historical Marker
- Hydrogeology/Hydrology
- Karst
- Museum
- Oil & Gas/Brine
- Other
- Quaternary
- Quternary
- Residence within 1000' of Site

1:27,499

0 0.325 0.65 1.3 mi

0 0.5 1 2 km

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# WELL LOCATIONS
# CONSTRUCTION PERMIT APPLICATION

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WEAVER CONSULTANTS GROUP
400 ANN STREET N.W.
SUITE 201A
GRAND RAPIDS,
MICHIGAN 49504
(616)-458-8052
www.wcgrp.com




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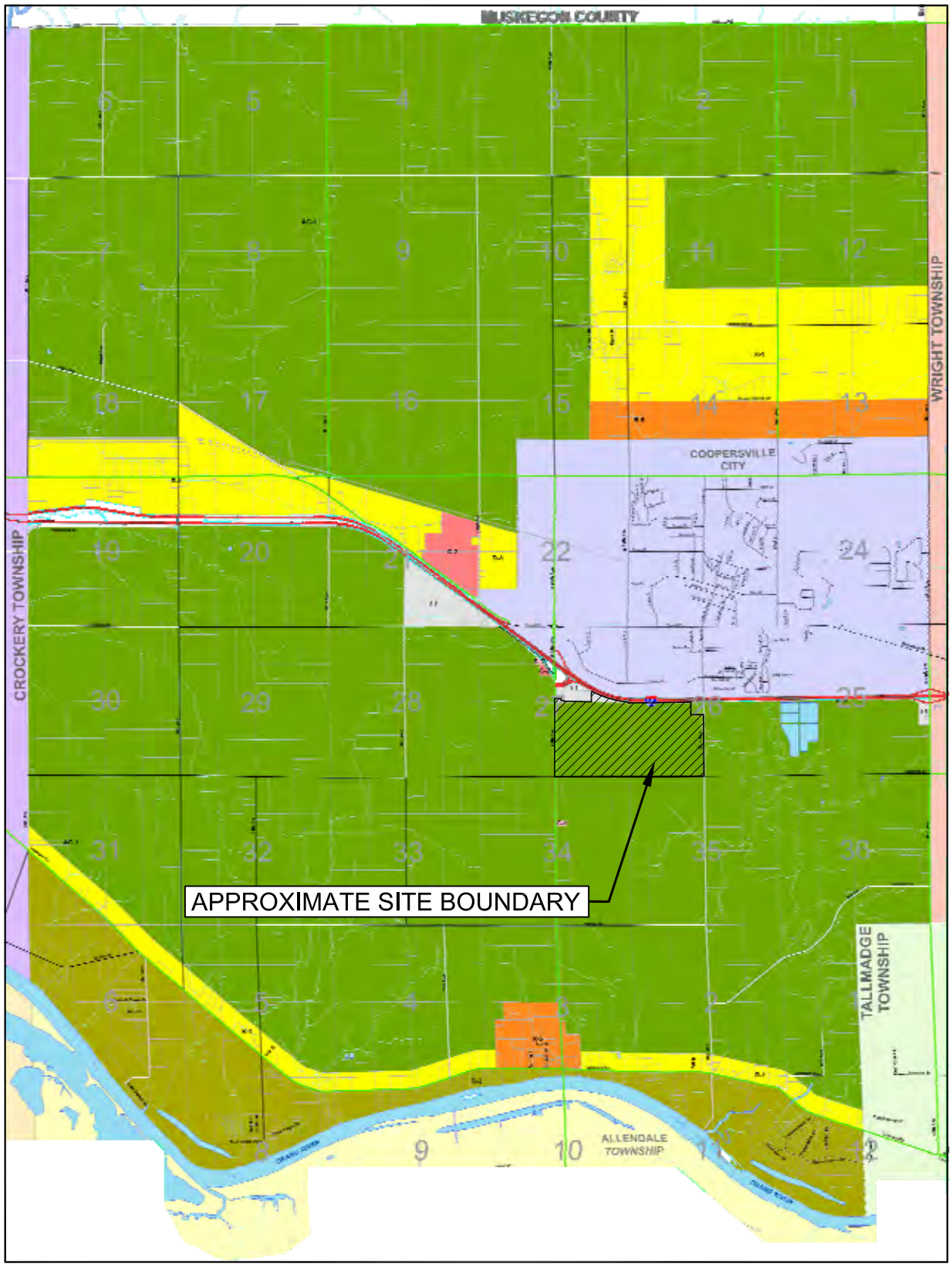
FILE: 0120-685-11-03
CAD: FIG_3-1-4_WELL.dwg

FIGURE 3-4

R:\PROJECTS\0120 - Allied\0120-685 Ottawa County (MI)\11\02-03 Expansion Permit\CADD\Figures\ATTACH 3\FIG_3-1-4_WELL.dwg;javink;March 10, 2016


N

0 1/2 MIILE 1 MILE

1 inch = 1 MILE

Legend

Class, Code

- Agricultural Preservation (AG-1)
- Low Density Residential (R-1)
- Residential-Sensitive Area (R-2)
- Single/Multi Residential (R-5)
- Neighborhood Commercial (C-1)
- General Commercial (C-2)
- Light Industrial (L-1)
- Parcels

**MAP SOURCE**: IMAGE FROM POLKTON CHARTER TOWNSHIP OFFICIAL ZONING MAP, JULY 11, 2013



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# LOCAL ZONING MAP

## CONSTRUCTION PERMIT APPLICATION

OTTAWA COUNTY FARMS LANDFILL
OTTAWA COUNTY, MICHIGAN



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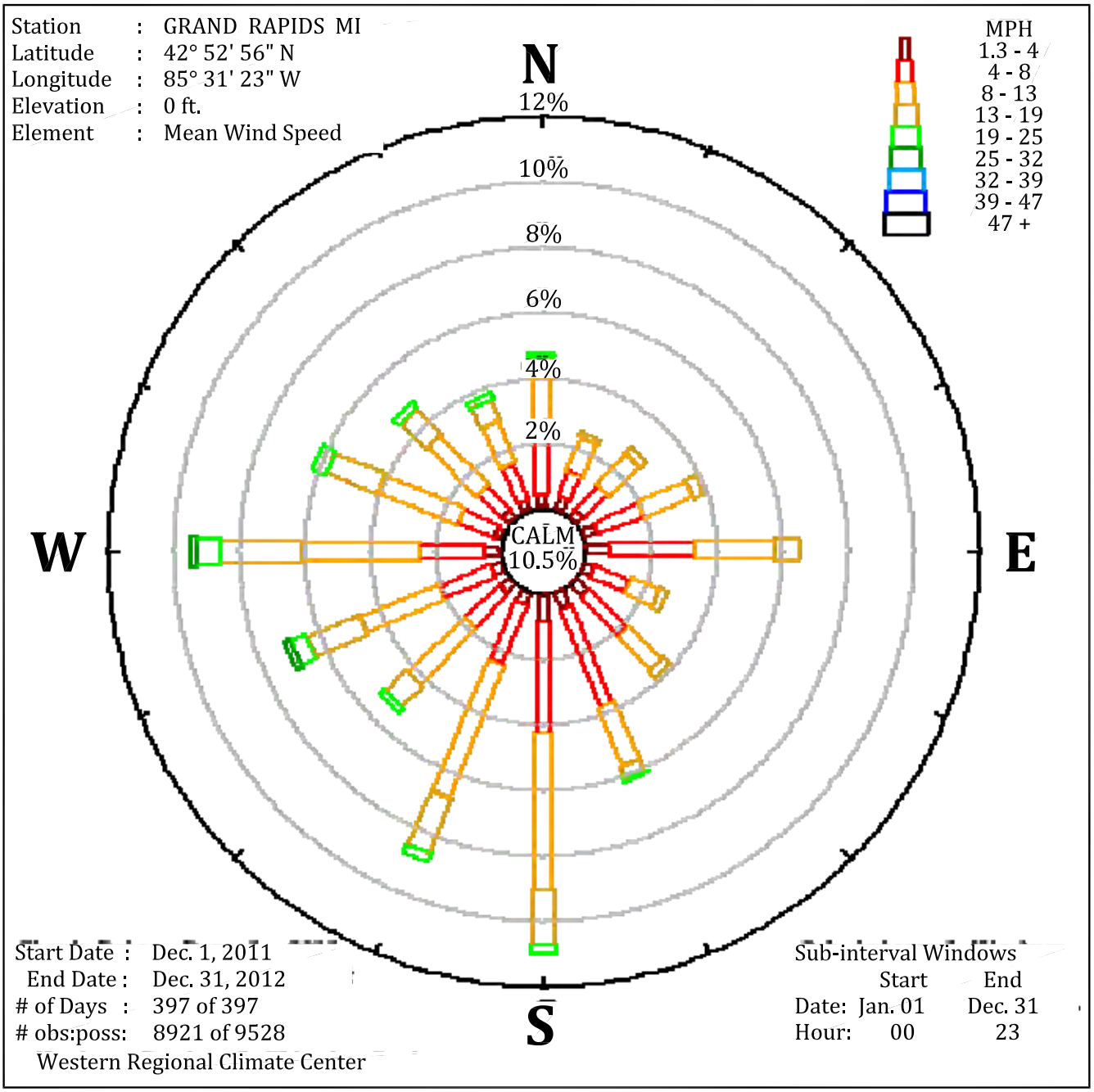
DATE: 2/03/2016
FILE: 0120-685-11-03
CAD: FIG_3-1-5_ZONING.dwg

FIGURE 3-5

R:\PROJECTS\0120 - Allied\0120-685 Ottawa County (MI)\11\02-03 Expansion Permit\CADD\Figures\ATTACH 3\FIG_3-1-5_ZONING.dwg;javink;March 10, 2016

# GRAND RAPIDS MI




**MAP SOURCE**: IMAGE FROM WESTERN REGIONAL CLIMATE CENTER, 2016



PREPARED FOR:

OTTAWA COUNTY LANDFILL, INC.
15550 68TH AVE.
COOPERSVILLE, MI

## WIND ROSE DIAGRAM

CONSTRUCTION PERMIT APPLICATION

OTTAWA COUNTY FARMS LANDFILL
OTTAWA COUNTY, MICHIGAN



Weaver Consultants Group
GRAND RAPIDS, MICHIGAN
(616) 458-8052 www.wcgrp.com

| | |
|---|---|
| DRAWN BY: | JDA |
| REVIEWED BY: | KRK |
| DATE: | 2/03/2016 |
| FILE: | 0120-685-11-03 |
| CAD: | FIG_3-1-6_WIND_ROSE |

FIGURE 3-6


**MAP SOURCE**: IMAGE FROM ArcGIS- FEMA's NATIONAL FLOOD HAZARD LAYER



PREPARED FOR:

OTTAWA COUNTY
LANDFILL, INC.
15550 68TH AVE.
COOPERSVILLE, MI

# 100 YEAR FLOODPLAIN MAP

## CONSTRUCTION PERMIT APPLICATION

OTTAWA COUNTY FARMS LANDFILL
OTTAWA COUNTY, MICHIGAN



Weaver Consultants Group
GRAND RAPIDS, MICHIGAN
(616) 458-8052 www.wcgrp.com

DRAWN BY: JDA
REVIEWED BY: KRK
DATE: 3/01/2016
FILE: 0120-685-11-03
CAD: FIG_3-1-7_FLOODPLAIN

FIGURE 3-7

R:\PROJECTS\0120 - Allied\0120-685 Ottawa County (MI)\11\02-03 Expansion Permit\CADD\Figures\ATTACH 3\FIG_3-1-7_FLOODPLAIN.dwg,kkinley,April 6, 2016

**ATTACHMENT 3-II**

ENVIRONMENTAL SITE ASSESSMENT CORRESPONDENCE

**ATTACHMENT 3-II-A**

COUNTY LETTER OF CONSISTENCY

miOttawa.org

# County of Ottawa

*Health Department – Environmental Health*

**Lisa Stefanovsky, M. Ed.**
*Health Officer*

**Paul Heidel, M.D., M.P.H.**
*Medical Director*

April 28, 2016

Debbie Nurmi
Environmental Manager
Ottawa County Farms Landfill
15550 68th Ave
Coopersville MI 49404

Dear Ms. Nurmi,

This letter is in regards to the Summary Report that was submitted for the proposed expansion of the Ottawa County Farms Landfill. The Ottawa County Solid Waste Planning Committee, in accordance with the Ottawa County Solid Waste Management Plan, does hereby certify that the proposed expansion of the Ottawa County Farms Landfill is consistent with the Ottawa County Solid Waste Management Plan. The Plan was approved by the Michigan Department of Environmental Quality on April 26, 2000 and as amended and subsequently approved on December 2, 2015. The expansion criteria are addressed in section III.16.5 Facility Development and Expansion Procedures.

A more detailed description of the review process is outlined below.

- The full Solid Waste Planning Committee convened on November 23, 2015, to begin the review process. The Facility Review Subcommittee was selected and a meeting date was established.
- The subcommittee met on January 22, 2016, to review the Summary Report. The Facility Review Subcommittee recommended that the Solid Waste Planning Committee find that the expansion is consistent with the Solid Waste Management Plan subject to further explanation about the solidification process that is ongoing at the landfill. A representative from MDEQ would be invited the next meeting for explanation and clarification.
- The full committee met again on February 10, 2016. After clarification from the MDEQ on the solidification process, the committee voted unanimously to issue a Letter of Consistency for the Summary Report as written.

As stated above, the Ottawa County Solid Waste Planning Committee believes that the Summary Report, proposed expansion, and processing meet all criteria required by the Ottawa County Solid Waste Management Plan and is hereby issuing this Letter of Consistency which is valid for one year from the date of this letter.

If you have any questions or require further information, please contact this office at (616) 494-5569.

Respectfully

Stew Whitney
Solid Waste Program Supervisor

Cc: Ottawa County Solid Waste Planning Committee
Ottawa County Board of Commissioners

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

December 2, 2015

Mr. Joseph Baumann, Chairperson
Ottawa County Board of Commissioners
12220 Fillmore Street
West Olive, Michigan 49460

Dear Mr. Baumann:

The locally approved amendment to the Ottawa County Solid Waste Management Plan (Plan Amendment) received by the Department of Environmental Quality (DEQ), dated October 7, 2015; is hereby approved.

The Plan Amendment makes the following changes:

- Changes the isolation distances required for a new landfill or an expansion at an existing landfill; specifically, 100 feet from adjacent property lines, road right-of-way, and 400 feet from lakes, and perennial streams or minimum state isolation distances, whichever is greater.
- Clarifies that the active work area for a new landfill or an expansion of an existing landfill shall not be located closer than 1,000 feet from domiciles or public schools existing at the time of submission of the application.

The DEQ would like to thank Ottawa County for its efforts in addressing its solid waste management issues. If you have any questions, please contact Ms. Christina Miller, Solid Waste Planning, Reporting and Surcharge Coordinator, Sustainable Materials Management Unit, Solid Waste Section, Office of Waste Management and Radiological Protection, at 517-614-7426; millerc1@michigan.gov; or DEQ, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Bryce Feighner, P.E., Chief
Office of Waste Management and
Radiological Protection
517-284-6551

cc: Senator Arlan B. Meekhof
Representative Amanda Price
Representative Daniela Garcia
Mr. Stew Whitney, Ottawa County DPA
Mr. Dan Wyant, Director, DEQ
Mr. Jim Sygo, Chief Deputy Director, DEQ
Ms. Maggie Pallone, Director of Legislative Affairs, DEQ
Mr. Fred Sellers, DEQ
Mr. Duane Roskoskey, DEQ
Ms. Rhonda S. Oyer/Ms. Christina Miller, DEQ/Ottawa County File

**ATTACHMENT 3-II-B**

WETLANDS REPORT

Weaver Consultants Group

May 5, 2016
Project No: 0120-685-11-02

Ms. Debbie Nurmi
Environmental Manager, Republic Services
15550 68th Avenue
Coopersville, MI 49404

**Re: Wetland Delineation Report**
**Ottawa County Farms Landfill Expansion**
**15550 68th Avenue**
**Coopersville, Michigan**

Dear Ms. Nurmi:

**Weaver Consultants Group, LLC** (WCG) has completed the wetland delineation study at the referenced location in accordance with our earlier proposal, dated November 2, 2015. Please find enclosed report for your review, comment, and approval.

If you should have any questions or comments concerning this report, please do not hesitate to contact our office at 574-271-3447.

Sincerely,

**Weaver Consultants Group, LLC**

Edward B. Stefanek
Senior Project Manager

Attachments: Draft Wetland Delineation Report



7121 Grape Road • Granger, Indiana • 574.271.3447 • wcgrp.com • Offices Nationwide

March 2016

0120-685-11-03

# WETLAND DETERMINATION REPORT

## ATTACHMENT 3-IIB

## OTTAWA COUNTY FARMS LANDFILL

**COOPERSVILLE, MICHIGAN**

PREPARED BY

Weaver Consultants Group

7121 Grape Road
Granger, Indiana 46530
574.271.3447 • wcgrp.com

# TABLE OF CONTENTS

**APPENDICES**

# 1 INTRODUCTION

Weaver Consultants Group, LLC (WCG) was retained to complete a wetland determination of potential wetland area(s) within or near a proposed lateral landfill expansion of Ottawa County Farms Landfill located at 15550 68th Avenue, Coopersville, Michigan (see **Figure 1 – Site Location Map** and **Figure 2 – Lateral Expansion Surveyed Wetland Plan**). The proposed landfill expansion extends eastward from the current solid waste boundary to 60th Avenue. Mosquito Creek transverses to the outside of the northeast corner of the proposed landfill expansion area. Impacts to any wetland areas, if present, as a result of the expansion project may require a permit from the Michigan Department of Environmental Quality (DEQ) under Part 303, Wetland Protection, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The Study Area is bordered by the I-96 Expressway located to the north, 60th Avenue to the east, Garfield Street to the south, and the active solid waste boundary located to the west.

Based on our professional understanding and interpretation of the *Corps of Engineers Delineation Manual (1987)* and US Army Corps of Engineers (Corps) guidance documents and regulations including the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North Central/North East Region* (January 2012), this report (Report) describes any wetlands identified within or near the proposed lateral expansion area or within the Study Area.

Michigan's wetland statute, Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, defines a wetland as "land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life, and is commonly referred to as a bog, swamp, or marsh.

The Corps system of wetland determinations requires that positive indicators for wetlands be present for each of three parameters. These parameters are dominance of wetland vegetation, presence of hydric soils, and evidence of wetland hydrology.

**Appendix A** includes the regulatory definitions of the terms used in this report.

# 2 BACKGROUND INFORMATION

## 2.1 Existing Data Sources

A review of the following data sources, several of which are available on-line, was conducted to identify indicators of wetlands on both parcels:

1. Historical USGS 7.5-minute quadrangle topographic map for Coopersville, Michigan (1980). (see **Figure 1 – Site Location Map**).
2. FEMA Flood Insurance Rate Map (**Appendix B**).
3. Historical aerial photographs (1938, 1950, 1955, 1962, 1968, 1974, 1981, 1993, 1997, 2005, 2006, 2009, 2010, and 2012**).** Aerial photographs were provided by Environmental Data Resources (EDR) (**Appendix C**).
4. U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) Map (**Appendix D**) and,
5. Natural Resources Conservation Service Soil Survey for Ottawa County, Michigan (**Appendix E**).
6. Topographical Map completed by Weaver Consultants Group and derived from topographical information from aerial survey performed by Cooper Aerial Surveys Company on April 13, 2015 (see **Figure 2**).

### 2.1.1 USGS Topographical Map

USGS Topographical Maps are useful in identifying the general delineation of open water areas, drainage patterns, and general land uses, such as cleared (agricultural or pasture), forested, or urban development.

The 1980 topographical map does not show potential wetlands in the proposed lateral expansion area. There is a small drainage feature (Mosquito Creek) located to the

northeast of the proposed lateral expansion area and just inside the Study Area (see **Figure 1 – Site Location Map**).

### 2.1.2 FEMA Flood Insurance Rate Maps

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps are useful in identifying areas that may potentially be inundated with water due to flooding events. Printed maps that cover the proposed lateral expansion area were available from the online FEMA Service Center. The proposed lateral expansion area is not located within an area that may potentially be inundated due to flooding events (see **Appendix B**). The Study Area is denoted as "Zone Z", area of minimal flood hazard.

### 2.1.3 Aerial Photographs

Aerial photographs provide a detailed view of an area; thus land use and other features (e.g., general type and areal extent of plant communities and degree of inundation of the area when the photograph was taken) can be determined. Aerial photographs of the Study Area from the years 1938, 1950, 1955, 1962, 1968, 1974, 1981, 1993, 1997, 2005, 2006, 2009, 2010, and 2012 were reviewed as part of this report. Copies of each aerial photograph are appended in **Appendix C.**

The Study Area is depicted on the 1938, 1950, 1955, 1962, 1968, 1974, and 1993 aerial photographs as primarily agricultural crop fields. Along the northern Property boundary and northeast corner of the Property there are visual indications of a drainage swale or ditch and a creek surrounded by tree and brush vegetation. The vegetation is densest in the 1993 aerial photograph. WCG has categorized this area as having the greatest probability for wetlands.

In latter aerial photographs (1997, 2005, 2006, 2009, 2010, and 2012 there are indications of earthwork activities across the Study Area, south of the swale/ditch/creek area earlier described. These earthwork activities maybe in connection with the adjacent landfill located to the west. The ground vegetation and surface soils have been removed at some locations while other locations there are indications of soil stockpiles. As a result, the natural drainage of the area has been altered causing ponded water to be present at some locations that historically were dry and used as agricultural crop fields. The portion of Study Area along the northern Property boundary and northeast

corner of the Property in these latter aerial photographs is covered with dense vegetation (trees and brush).

### 2.1.4 USFWS National Wetland Inventory Maps

The U.S. Fish and Wildlife Service National Wetland Inventory (NWI) Maps are used to determine if any potential wetlands area on the parcels. The wetland boundaries of NWI Maps are based on the presumed presence of at least one of the three parameters required by the Corps. Wetlands are identified on the NWI Map based on stereoscopic analysis of high altitude aerial photography. The NWI Map specifies that there is a margin of error inherent in the use of the aerial photographs and as a result, wetlands are sometimes erroneously identified, missed, or misidentified. Each potential area denoted on the NWI Map should be field checked.

Furthermore, the Corps states that wetlands classified on the NWI Map as having a temporarily flooded or intermittently flooded water regime should be viewed with particular caution since this designation is indicative of plant communities that are transitional between wetland and non-wetland.

The NWI Map (see **Appendix D**) of the Study Area does identify a potential wetland area at the northeast corner. The area is denoted with the following designation, PSS1A, or palustrine, scrub/shrub, deciduous, and temporary flooded.

### 2.1.5 Soil Survey

Soil surveys are prepared by the Natural Resources and Conservation Service (NRCS) for political units such as counties. Soil surveys contain several types of information including land usage, soil properties including water table and inundation characteristics (if any), and classification of soils. Hydric soils are required for wetland vegetation to be prevalent or dominant.

Information from the NRCS Soil Survey of Ottawa County was obtained from the NRCS Web Soil Survey (see **Appendix E**). The survey identifies several soil series across the Study Area. These soils include Selkirk loam (SeB), Allendale sandy loam (AIA), Nester loam (NeC), Kawkawlin loam (KnB), Iosco loamy sand (IoA), Richter sandy loam (RcB), Menominee loamy sand (MmB), and Sloan loam (Sn). According to the NRCS the only soil type that is listed as being dominated or typically containing hydric soil components

is the Sloan loam which is present along Mosquito Creek at the northeast corner of the Property. The other soil types are not listed as hydric soils.

### 2.1.6 Cooper Aerial Survey

In April 2015, an aerial survey was completed across the Study Area as well and the landfill located to the west by Cooper Aerial Surveys, Co. From that survey, WCG prepared a topographical map with 2' contour lines. From that map a wetland delineation map was prepared (see **Figure 2 – Lateral Expansion Surveyed Wetland Plan**). Topographical maps are useful in identifying the general delineation of open water areas, drainage patterns, and general land uses.

According to the map, the elevation of the Study Area varies considerably from 660 ft. ± above mean sea level elevation (msl) across several stockpiles of soils deposited by the nearby landfill and the berms of soil along the southern and eastern property boundary along Garfield Street and 60th Avenue, to 650 ft. ± msl at the southeast corner of the study area where shallow temporary ponded water was identified, to 640 ft. ± msl along a drainage swale along the northern boundary of the Study Area, to 630 ft. ± along Mosquito Creek that cross the northeast corner of the Study Area. Based on the aerial survey and field observations, the source of the ponded water is from seasonal surface water runoff emanating from the stockpiles of soil and soil berms along the southern and eastern Property boundary.

# 3 FIELD OBSERVATIONS

## 3.1 Investigative Methodology

Areas that exhibited wetland indicators across the Study Area were delineated, using the routine onsite determination methodology identified in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (1987) as well as the methodology outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North Central/North East Region* (January 2012).

Based on a review of the data gathered, it was determined 1) that wetland conditions could exist across the northern boundary and northeast corner of the Study Area and 2) that a wetland boundary could be determined and was located (see **Figure 2**). As a result, the field study concentrated in those areas. Dominant hydrologic conditions and soil observations via soil pits were recorded on November 11, 2015 both upgradient and downgradient from this wetland boundary. Vegetative conditions were also noted on the same day although the observations were taken outside of the growing season and may require confirmation during the growing season. Based on the observations taken, a wetland-nonwetland boundary was identified and staked with either red flags or tape and located using conventional surveying techniques.

Data forms were completed for four representative locations inside and outside each wetland area identified in the study (**Appendix F**).

### 3.1.1 Property Photographs

Photographs of the observation points are located in **Appendix G** and **Figure 4.** The photographs are the visual documentation of site conditions at the time observations were taken. These are intended to provide representative visual samples of any wetlands or other special features found in the Study Area.

### 3.1.2 Data Forms

Multiple data points and boundary points were located as shown on **Figure 2** to assess whether a wetland exists and to define the approximate boundary of a wetland. The Wetland Determination Data Forms used in the determination or delineation process are located in **Appendix G**. These forms are the written documentation describing how representative sample locations meet or do not meet each of the three criteria.

### 3.1.3 Wetland Boundary Survey

Based on the observations taken, a wetland-nonwetland boundary was identified and staked with either red flags or tape and located using conventional surveying techniques. The wetland boundaries are shown on **Figure 2**.

## 3.2 General Property Conditions

WCG completed a site reconnaissance of the Study Area on November 11, 2015. Most of the Study Area has or is being used for composting, staging of equipment and materials, or stockpiling of soil associated with the nearby Ottawa County Farms Landfill operated by Republic Services. A constructed berm of soil acting as a site barrier was observed along the southern and eastern boundary of the Study Area. There are visual indications that these berms of soil have also acted as dikes to prevent surface drainage off-site, and as a result, created seasonal temporary areas of shallow water inundation. Some incidental vegetation typically associated with wetlands (small growth of cattails and a few small cottonwood saplings) were observed within these areas of past water inundation. These isolated potential wetland areas are not normally regulated if created as a result of the indicated landfill activities per state regulation and the diked area was not a wetland before diking. Analysis of the background information indicates that the area was a crop field.

Along the northern boundary of the Study Area is a drainage swale vegetated with, grass, shrubs, and small trees. The swale receives overflow from a nearby storm water detention basin associated with the landfill. The swale empties into the a roadside ditch along Interstate 96 and then into Mosquito Creek which travels along the northeast corner of the Study Area and then off-site across Interstate 96 to the north and 60$^{th}$ Avenue to the east.

## 3.3 Areas of Investigation

Based on the background information gathered and the general observations of the Study Area, WCG identified the swale along the northern boundary of the Study Area and Mosquito Creek as principal areas of investigation. Based on a review of existing data sources and our findings from a site reconnaissance these areas could contain the soils, hydrology, and dominance of wetland vegetation necessary for a wetland to exist. Surrounding areas were omitted from the investigation since they were at a noticeably higher elevational grade and based on a preliminary review of existing data sources were not likely to contain the necessary indicators for a wetland to exist. WCG does note that water inundation and wetland vegetation was observed across other areas of the Study Area but these potential wetland areas are located at a much higher grade than the swale and creek areas, were incidentally created in upland areas by nearby landfill activities, and could be considered diked areas associated with a landfill and not subject to regulation. As a result, this area was omitted from further investigation.

To approximate the wetland boundary, WCG recorded the field observations of vegetation, soil, and hydrology in accordance with standard protocol. Direct observations were collected on November 11, 2015. This information was compared with information obtained during our review of existing data sources (**Section 2.0**). After analyzing the data it was determined that wetland conditions did exist across the drainage swale and adjacent to Mosquito Creek. It was also determined that an approximate location could be made regarding the wetlands.

Observation data points were taken and recorded (see data forms in **Appendix G**). All recorded observation data points are shown on **Figure 2.** Hydrologic, dominant vegetative conditions, and soil conditions were noted on data forms**.** To collect soils information, 20-inch pits were dug at each data point locations**.**

### 3.3.1 Swale Wetland

Data Point #2 was recorded upgradient from the wetland boundary in a transitional area between the surrounding land being used by the landfill for staging and the drainage swale. No hydrologic primary or secondary indicators were identified. Soils were examined and determined to be indicative of the mapped soil unit for the location (Richter sandy loam). No hydric soil indicators were observed. The vegetation at the

data point did not consist of a dominance of wetland vegetation. Vegetation species identified at these locations included primarily orchard grass (*Dactylis glomerata, FACU*), tall goldenrod (*Solidago altissima, FACU),* poison ivy (*Toxicodendron radicans, FACU),* white clover (*Trifolium repens, FACU),* red maple (*Acer rubrum, FAC),* and white oak *(Quercus alba, FACU).*

Data Point #1 was recorded downgradient from the wetland boundary within the swale wetland. Primary hydrologic indicators were recorded including sediment deposits and drift deposits. Hydric soil, as indicated by a depleted matrix (an indicator for soil saturation) was identified. A dominance of wetland vegetation was observed including reed canary grass (*Phalaris arundinacea, FACW*), sedge (*Carex sp.*), eastern cottonwood (*Populus deltoids, FAC),* and red maple *(Acer rubrum, FAC).*

### 3.3.2 Mosquito Creek Wetland

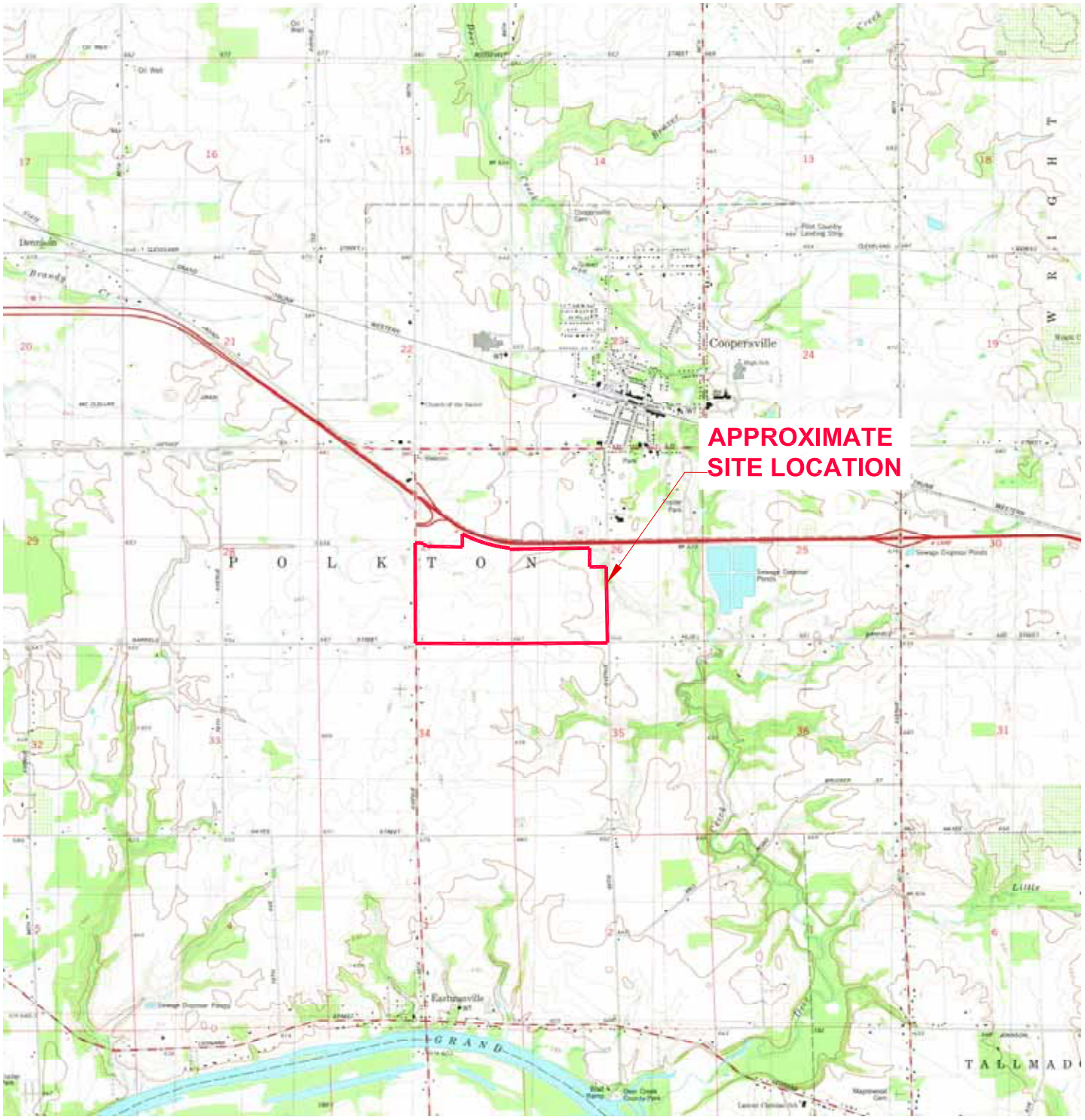
Data Point #4 was recorded upgradient from the wetland boundary in a transitional area between the surrounding land being used by the landfill for staging and the Mosquito Creek Wetland. No hydrologic primary or secondary indicators were identified. Soils were examined and determined to be indicative of the mapped soil unit for the location (Kawkawlin loam). No hydric soil indicators were observed. The vegetation at the data point did not consist of a dominance of wetland vegetation. Vegetation species identified at these location included primarily orchard grass (*Dactylis glomerata, FACU*), tall goldenrod (*Solidago altissima, FACU),* poison ivy (*Toxicodendron radicans, FACU),* white clover (*Trifolium repens, FACU),* white oak *(Quercus alba, FACU),* and common hawthorn (*Crataegus monogyna, FACU)*.

Data Point #3 was recorded downgradient from the wetland boundary. Primary hydrologic indicators were recorded including sediment and drift deposits. Soil indicators include a depleted matrix. The mapped soil unit is also a listed hydric soil. A dominance of wetland vegetation was observed including reed canary grass (*Phalaris arundinacea, FACW*) common begger ticks (*Bidens frondosa, FAC)*, eastern cottonwood (*Populus deltoids, FAC),* shellbark hickory (*Carya laciniosa, FACW),* and pin oak (*Quercus, palustris, FACW).*

# 4 CONCLUSIONS

Based on the results of the field study completed by WCG and criteria established by the Michigan Department of Environmental Quality wetlands adjacent to the drainage swale and Mosquito Creek were identified as shown on **Figure 2.** The wetlands could be categorized as low quality scrub-shrub wetlands conforming to the mapped wetlands on the NWI map. Potential impacts to the wetland could be regulated on Michigan law and require a permit and/or mitigation. WCG understands that the proposed lateral limit of the landfill expansion will be approximately 400 feet south of the delineated swale wetland and 400 feet west of the Mosquito Creek wetland so direct impacts as result of the expansion are not likely.

# FIGURES




SOURCE: IMAGE ADAPTED FROM USGS COOPERSVILLE, MI DATED 1980.

N

APPROXIMATE GRAPHIC SCALE

40 0 20 40 80

1 inch = 40 ft.



PREPARED FOR
OTTAWA COUNTY
LANDFILL, INC.
15550 68TH AVE.
COOPERSVILLE, MI

# SITE LOCATION MAP

OTTAWA COUNTY FARMS LANDFILL
OTTAWA COUNTY, MICHIGAN



Weaver Consultants Group
GRAND RAPIDS, MICHIGAN
www.wcgrp.com

DRAWN BY: JLES
REVIEWED BY: EBS
DATE: 03/14/2016
FILE: 0120-685-02
CAD: OCF_WETLND- FIG 1.dw

FIGURE 1

# LATERAL EXPANSION
# SURVEYED WETLAND PLAN

OTTAWA COUNTY FARMS LANDFILL
OTTAWA COUNTY, MICHIGAN

PREPARED FOR
OTTAWA COUNTY
LANDFILL, INC.
15550 68TH AVE.
COOPERSVILLE, MI

N 7500
N 7000
N 6500
N 6000
N 5500
N 5000
N 4500

E 1000
E 1500
E 2000
E 2500
E 3000
E 3500
E 4000
E 4500
E 5000
E 5500

I-96 EXPRESSWAY
68TH AVENUE
GARFIELD STREET

CELL A
CELL B
CELL C
CELL D
CELL E
CELL A EXTENSION
CELL B EXTENSION

PHASE 1
PHASE 2
PHASE 3
PHASE 4
PHASE 5
PHASE 6
PHASE 7
PHASE 8

PROPOSED PHASE 9
PROPOSED PHASE 10
PROPOSED PHASE 11
PROPOSED PHASE 12
PROPOSED PHASE 13

NORTHEAST SEDIMENT POND
WEST SEDIMENT POND

SURVEYED WETLANDS (THE EXTENT NOT DEFINED TO THE EAST OF LINE)
SURVEYED WETLANDS

DATA POINT #1
DATA POINT #2
DATA POINT #3
DATA POINT #4

## LEGEND

- 1430 — EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PERMITTED LIMIT OF WASTE PLACEMENT
- PROPOSED LIMIT OF VERTICAL/LATERAL EXPANSION
- PROPERTY LINE
- CELL LIMITS
- SURVEYED WETLANDS

## NOTE:

1. EXISTING TOPOGRAPHICAL INFORMATION FROM AERIAL SURVEY PERFORMED BY COOPER AERIAL SURVEYS, CO. ON APRIL 13, 2015.
2. WETLAND SURVEYED BY FTS, DATED NOVEMBER 16, 2015.

W N E

SCALE: 1" = 400'

0 200' 400' 800'

| No. | DATE | REVISION DESCRIPTION | BY |
|---|---|---|---|
| 1 | 9/08/16 | REVISED PER MDEQ COMMENTS, DATED 8/19/16 | JDA |

Weaver Consultants Group

WEAVER CONSULTANTS GROUP
400 ANN STREET N.W.
SUITE 201A
GRAND RAPIDS,
MICHIGAN 49504
(616)-458-8052
www.wcgrp.com

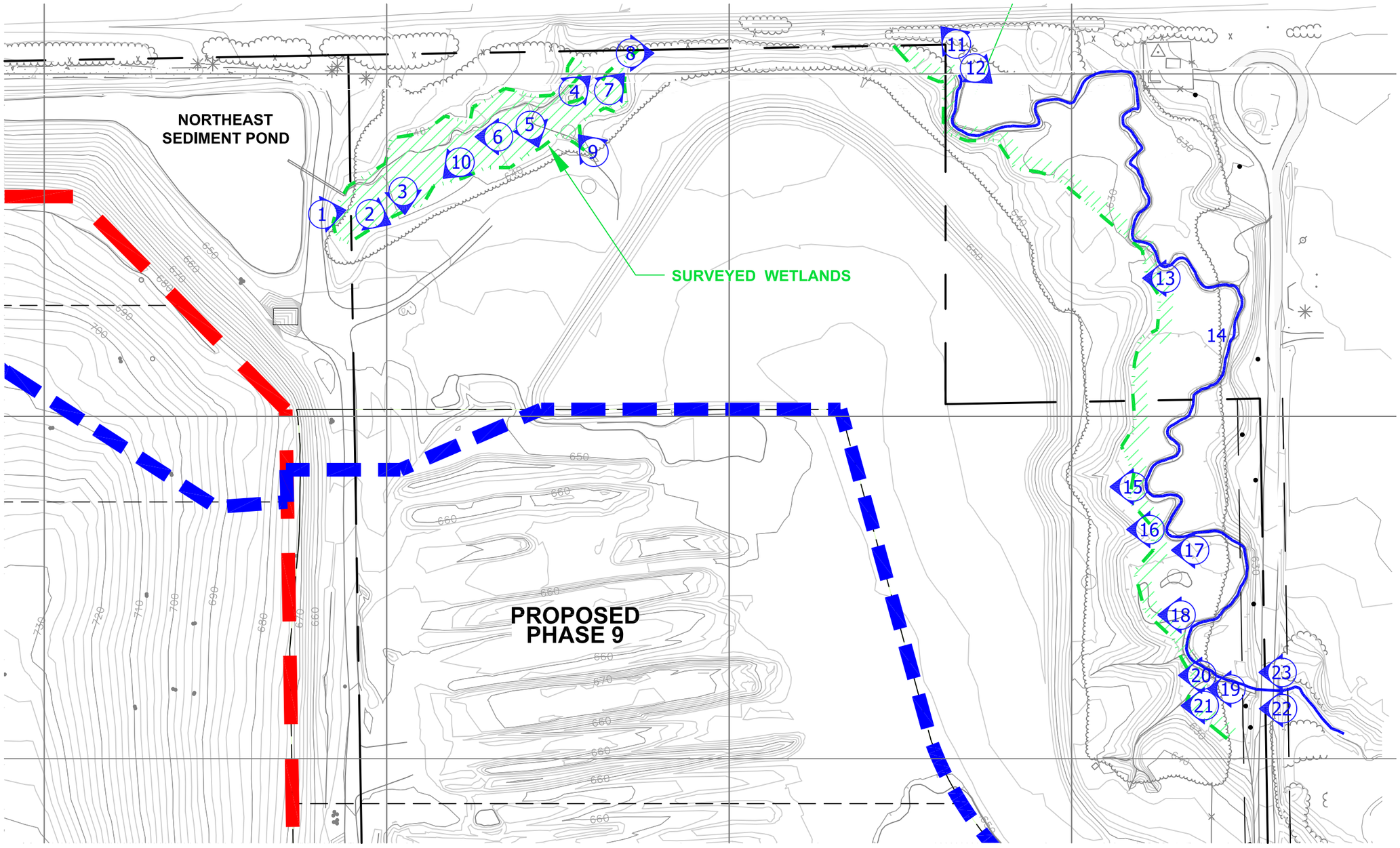


DRAWN BY: JDA
REVIEWED BY: TAP
DATE: 03/14/2016
FILE: 0120-685-11-02
CAD: 02_WETLND-FIG.dwg

FIGURE 2



LOCATION: R:\PROJECTS\0120 - Allied\0120-685 Ottawa County (MI)\1102-03 Expansion Permit\CADD\Figures\OCF_WETLND- FIG.dwg
LAYOUT: WETLANDS - SURVEYED
DATE/TIME: September 08, 2016 - 11:25am
PLOTTED BY: javink




NOTE:

1. EXISTING TOPOGRAPHICAL INFORMATION FROM AERIAL SURVEY PERFORMED BY COOPER AERIAL SURVEYS, CO. ON APRIL 13, 2015.
2. WETLAND SURVEYED BY FTS, DATED NOVEMBER 16, 2015.

LEGEND

- 1430 — EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PERMITTED LIMIT OF WASTE PLACEMENT
- PROPOSED LIMIT OF VERTICAL/LATERAL EXPANSION
- MOSQUITO CREEK
- PROPERTY LINE
- CELL LIMITS
- SURVEYED WETLANDS
- 1 — PHOTOGRAPH NUMBER



LOCATION: R:\PROJECTS\0120 - Allied\0120-685 Ottawa County (MI)\111102-03 Expansion Permit\CADD\Figures\OCF_WETLND- FIG.dwg
LAYOUT: PHOTO ORIENT MAP
DATE/TIME: March 14, 2016 - 12:25pm
PLOTTED BY: javink

PREPARED FOR
OTTAWA COUNTY
LANDFILL, INC.
15550 68TH AVE.
COOPERSVILLE, MI

# PHOTO ORIENTATION MAP

OTTAWA COUNTY FARMS LANDFILL
OTTAWA COUNTY, MICHIGAN

| No. | DATE | REVISION DESCRIPTION | BY |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
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| 6 | | | |
| 7 | | | |
| 8 | | | |

Weaver Consultants Group

WEAVER CONSULTANTS GROUP
400 ANN STREET N.W.
SUITE 201A
GRAND RAPIDS,
MICHIGAN 49504
(616)-458-8052
www.WCGrp.com



| | |
|---|---|
| DRAWN BY: | JDA |
| REVIEWED BY: | TAP |
| DATE: | 03/14/2016 |
| FILE: | 0120-685-11-02 |
| CAD: | OCF_WETLND- FIG.dwg |

FIGURE 3

# APPENDIX A

# GLOSSARY OF TERMS

# Appendix A: Glossary

This glossary is intended to supplement those given in the Corps Manual and other available sources. See the following publications for terms not listed here:

- Corps Manual (Environmental Laboratory 1987) (*http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf*).
- Field Indicators of Hydric Soils in the United States (USDA Natural Resources Conservation Service 2010) (*http://soils.usda.gov/use/hydric/*).
- National Soil Survey Handbook, Part 629 (USDA Natural Resources Conservation Service 2005) (*ftp://ftp-fc.sc.egov.usda.gov/NSSC/Soil_Survey_Handbook/629_glossary.pdf*).

**Absolute cover.** In vegetation sampling, the percentage of the ground surface that is covered by the aerial portions (leaves and stems) of a plant species when viewed from above. Due to overlapping plant canopies, the sum of absolute cover values for all species in a community or stratum may exceed 100 percent. In contrast, "relative cover" is the absolute cover of a species divided by the total coverage of all species in that stratum, expressed as a percent. Relative cover cannot be used to calculate the prevalence index.

**Aquitard.** A layer of soil or rock that retards the downward flow of water and is capable of perching water above it. For the purposes of this supplement, the term aquitard also includes the term aquiclude, which is a soil or rock layer that is incapable of transmitting significant quantities of water under ordinary hydraulic gradients.

**Contrast.** The color difference between a redox concentration and the dominant matrix color. Differences are classified as faint, distinct, or prominent and are defined in the glossary of USDA Natural Resources Conservation Service (2010) and illustrated in Table A1.

**Depleted matrix.** The volume of a soil horizon or subhorizon from which iron has been removed or transformed by processes of reduction and translocation to create colors of low chroma and high value. A, E, and calcic horizons may have low chromas and high values and may therefore

be mistaken for a depleted matrix. However, they are excluded from the concept of a depleted matrix unless common or many, distinct or prominent redox concentrations as soft masses or pore linings are present. In some places the depleted matrix may change color upon exposure to air (reduced matrix); this phenomenon is included in the concept of a depleted matrix. The following combinations of value and chroma identify a depleted matrix:

- Matrix value of 5 or more and chroma of 1, with or without redox concentrations occurring as soft masses and/or pore linings, or
- Matrix value of 6 or more and chroma of 2 or 1, with or without redox concentrations occurring as soft masses and/or pore linings, or
- Matrix value of 4 or 5 and chroma of 2, with 2 percent or more distinct or prominent redox concentrations occurring as soft masses and/or pore linings, or
- Matrix value of 4 and chroma of 1, with 2 percent or more distinct or prominent redox concentrations occurring as soft masses and/or pore linings (USDA Natural Resources Conservation Service 2010).

Common (2 to less than 20 percent) to many (20 percent or more) redox concentrations (USDA Natural Resources Conservation Service 2002) are required in soils with matrix colors of 4/1, 4/2, and 5/2 (Figure A1). Redox concentrations include iron and manganese masses and pore linings (Vepraskas 1992). See "contrast" in this glossary for the definitions of "distinct" and "prominent."

**Diapause.** A period during which growth or development is suspended and physiological activity is diminished, as in certain aquatic invertebrates in response to drying of temporary wetlands.

**Distinct.** See Contrast.

**Episaturation.** Condition in which the soil is saturated with water at or near the surface, but also has one or more unsaturated layers below the saturated zone. The zone of saturation is perched on top of a relatively impermeable layer.

**Fragmental soil material.** Soil material that consists of 90 percent or more rock fragments; less than 10 percent of the soil consists of particles 2 mm or smaller (USDA Natural Resources Conservation Service 2010).

Table A1. Tabular key for contrast determinations using Munsell notation.

| Hues are the same (Δ h = 0) | | | Hues differ by 2 pages (Δ h = 2) | | |
|---|---|---|---|---|---|
| Δ Value | Δ Chroma | Contrast | Δ Value | Δ Chroma | Contrast |
| 0 | ≤1 | Faint | 0 | 0 | Faint |
| 0 | 2 | Distinct | 0 | 1 | Distinct |
| 0 | 3 | Distinct | 0 | ≥2 | Prominent |
| 0 | ≥4 | Prominent | 1 | ≤1 | Distinct |
| 1 | ≤1 | Faint | 1 | ≥2 | Prominent |
| 1 | 2 | Distinct | ≥2 | — | Prominent |
| 1 | 3 | Distinct | | | |
| 1 | ≥4 | Prominent | | | |
| ≤2 | ≤1 | Faint | | | |
| ≤2 | 2 | Distinct | | | |
| ≤2 | 3 | Distinct | | | |
| ≤2 | ≥4 | Prominent | | | |
| 3 | ≤1 | Distinct | | | |
| 3 | 2 | Distinct | | | |
| 3 | 3 | Distinct | | | |
| 3 | ≥4 | Prominent | | | |
| ≥4 | — | Prominent | | | |
| Hues differ by 1 page (Δ h = 1) | | | Hues differ by 3 or more pages (Δ h ≥ 3) | | |
| Δ Value | Δ Chroma | Contrast | Δ Value | Δ Chroma | Contrast |
| 0 | ≤1 | Faint | Color contrast is prominent, except for low chroma and value. | | Prominent |
| 0 | 2 | Distinct | | | |
| 0 | ≥3 | Prominent | | | |
| 1 | ≤1 | Faint | | | |
| 1 | 2 | Distinct | | | |
| 1 | ≥3 | Prominent | | | |
| 2 | ≤1 | Distinct | | | |
| 2 | 2 | Distinct | | | |
| 2 | ≥3 | Prominent | | | |
| ≥3 | — | Prominent | | | |

Note: If both colors have values of ≤3 and chromas of ≤2, the color contrast is faint (regardless of the difference in hue).

Adapted from USDA Natural Resources Conservation Service (2002)

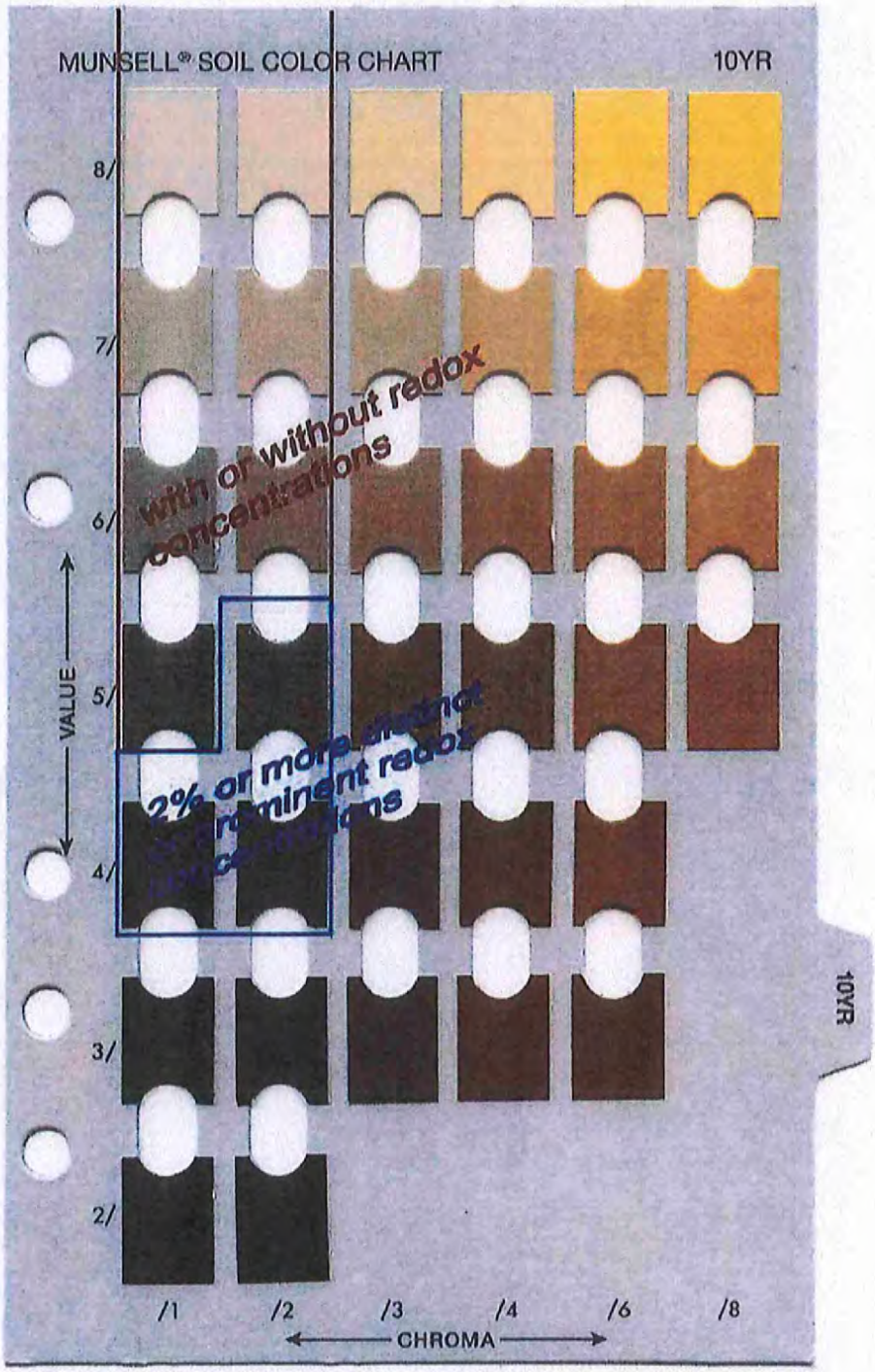



Figure A1. Illustration of values and chromas that require 2 percent or more distinct or prominent redox concentrations and those that do not, for hue 10YR, to meet the definition of a depleted matrix. *Due to inaccurate color reproduction, do not use this page to determine soil colors in the field.* Background image from the Munsell Soil Color Charts reprinted courtesy of Munsell Color Services Lab, a part of X-Rite, Inc.

**Gleyed matrix.** A gleyed matrix has one of the following combinations of hue, value, and chroma and the soil is not glauconitic (Figure A2):

- 10Y, 5GY, 10GY, 10G, 5BG, 10BG, 5B, 10B, or 5PB with value of 4 or more and chroma of 1; or
- 5G with value of 4 or more and chroma of 1 or 2; or
- N with value of 4 or more (USDA Natural Resources Conservation Service 2010).

**Growing season.** In the Midwest Region, growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature (see Chapter 4 for details). If onsite data gathering is not practical, growing season dates may be approximated by using WETS tables available from the NRCS National Water and Climate Center to determine the median dates of 28 °F (−2.2 °C) air temperatures in spring and fall based on long-term records gathered at the nearest appropriate National Weather Service meteorological station.

**High pH.** pH of 7.9 or higher. Includes moderately alkaline, strongly alkaline, and very strongly alkaline (USDA Natural Resources Conservation Service 2002).

**Nodules and concretions.** Irregularly shaped, firm to extremely firm accumulations of iron and manganese oxides. When broken open, nodules have uniform internal structure whereas concretions have concentric layers (Vepraskas 1992).

**Prominent.** See Contrast.

**Reduced matrix.** Soil matrix that has a low chroma in situ due to the presence of reduced iron, but whose color changes in hue or chroma when exposed to air as $Fe^{2+}$ is oxidized to $Fe^{3+}$ (Vepraskas 1992).

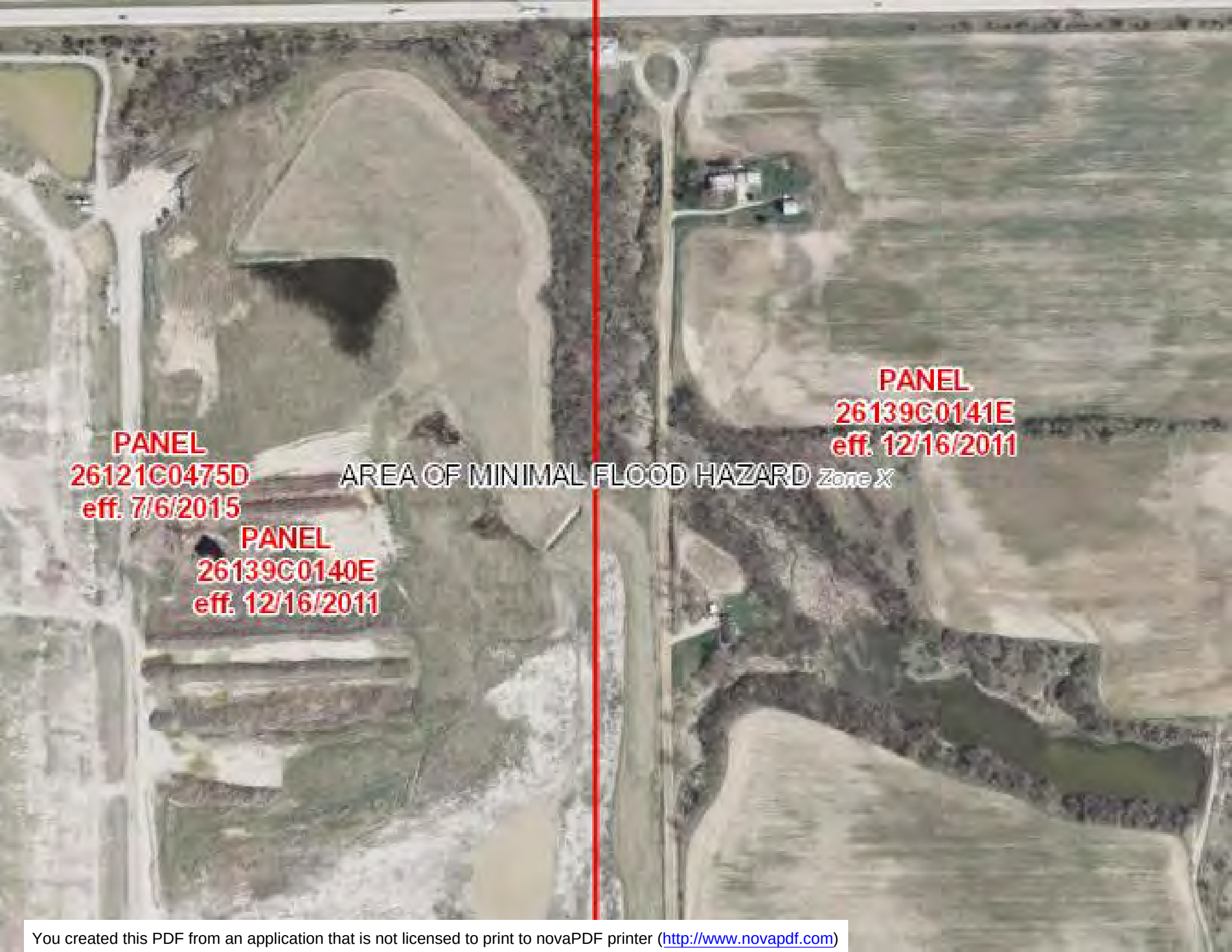

Figure A2. For hydric soil determinations, a gleyed matrix has the hues and chroma identified in this illustration with a value of 4 or more. *Due to inaccurate color reproduction, do not use this page to determine soil colors in the field.* Background image from the Munsell Soil Color Charts reprinted courtesy of Munsell Color Services Lab, a part of X-Rite, Inc.

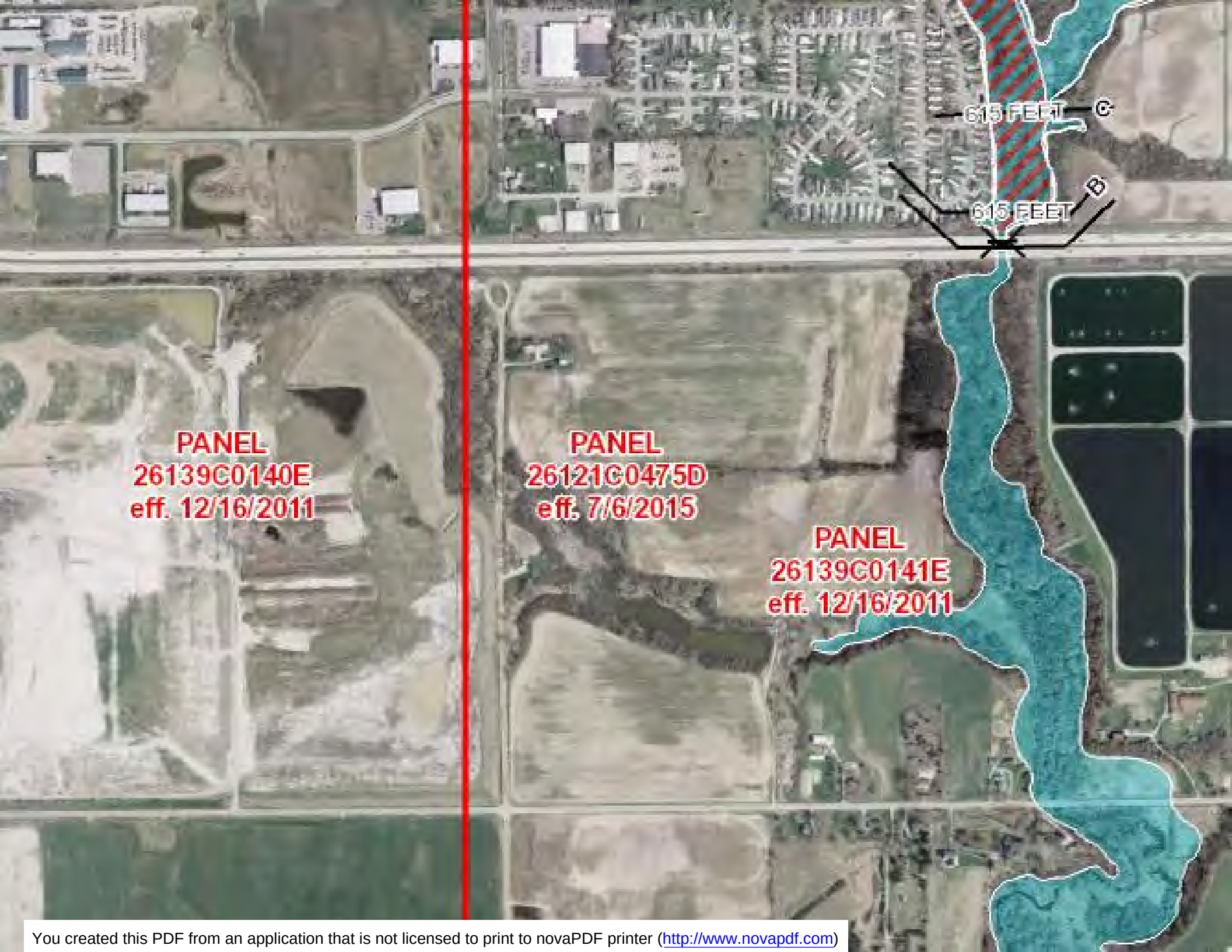
**Saturation.** For wetland delineation purposes, a soil layer is saturated if virtually all pores between soil particles are filled with water (National Research Council 1995, Vepraskas and Sprecher 1997). This definition includes part of the capillary fringe above the water table (i.e., the tension-saturated zone) in which soil water content is approximately equal to that below the water table (Freeze and Cherry 1979).

**Throughflow.** Lateral movement of groundwater in saturated substrates, such as on sloping terrain.

# APPENDIX B

# FEMA FLOOD INSURANCE RATE MAPS





# APPENDIX C

# HISTORICAL AERIAL PHOTOGRAPHS

**15550 68th Avenue**
15550 68th Avenue
Coopersville, MI 49404

Inquiry Number: 4466142.1
November 17, 2015

# The EDR Aerial Photo Decade Package

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

# EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

**When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.**

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

## Date EDR Searched Historical Sources:

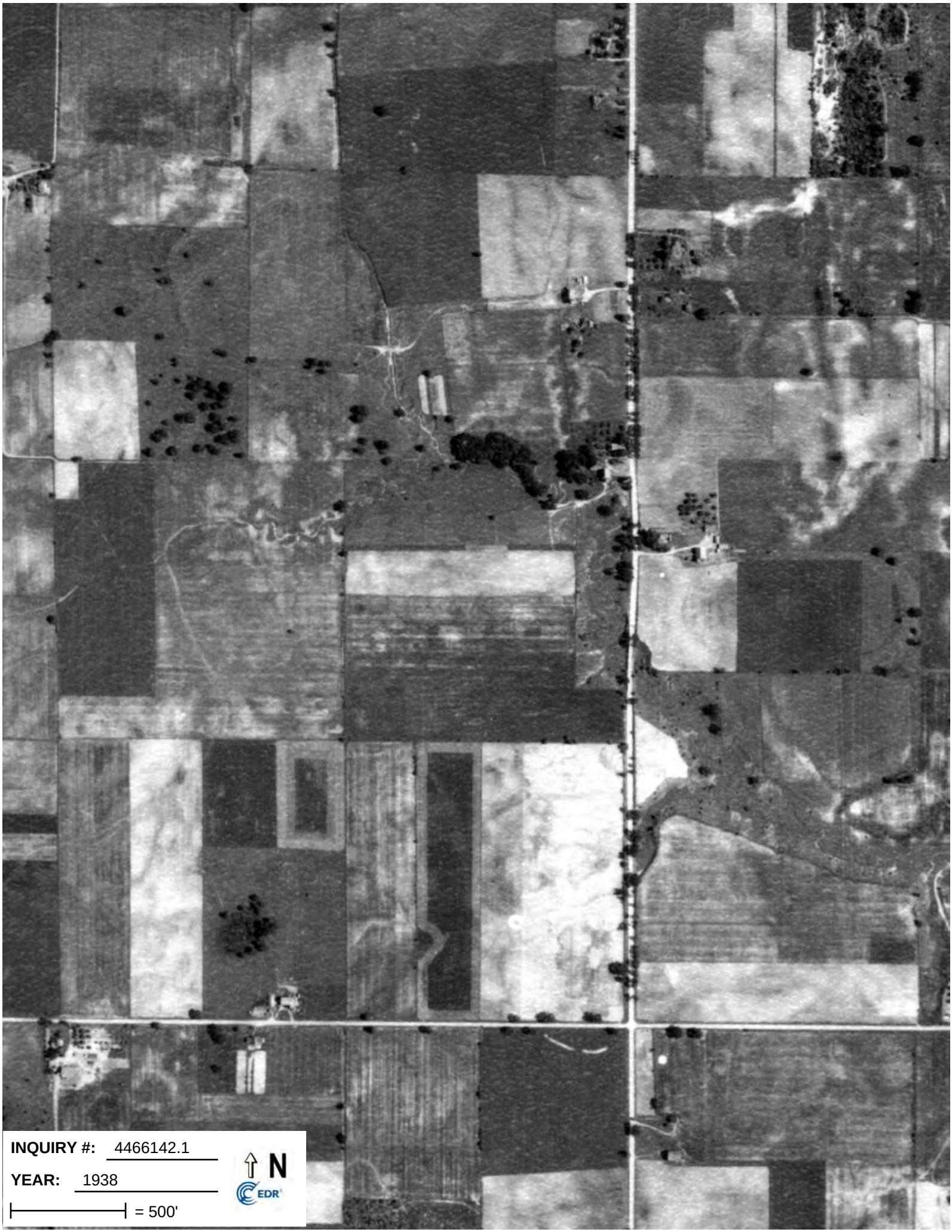
Aerial Photography November 17, 2015

## Target Property:

15550 68th Avenue

Coopersville, MI 49404

| ***Year*** | ***Scale*** | ***Details*** | ***Source*** |
|---|---|---|---|
| 1938 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1938 | AAA |
| 1950 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1950 | PMA |
| 1955 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1955 | PMA |
| 1962 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1962 | CSS |
| 1968 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1968 | ASCS |
| 1974 | Aerial Photograph. Scale: 1"=600' | Flight Year: 1974 | ASCS |
| 1981 | Aerial Photograph. Scale: 1"=600' | Flight Year: 1981<br>Photo Not Available - Image missing from collection | NHAP |
| 1993 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1993 | FSA |
| 1997 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1997 | FSA |
| 1997 | Aerial Photograph. Scale: 1"=500' | /DOQQ - acquisition dates: 1997 | USGS/DOQQ |
| 2005 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2005 | USDA/NAIP |
| 2006 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2006 | USDA/NAIP |
| 2009 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2009 | USDA/NAIP |
| 2010 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2010 | USDA/NAIP |
| 2012 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2012 | USDA/NAIP |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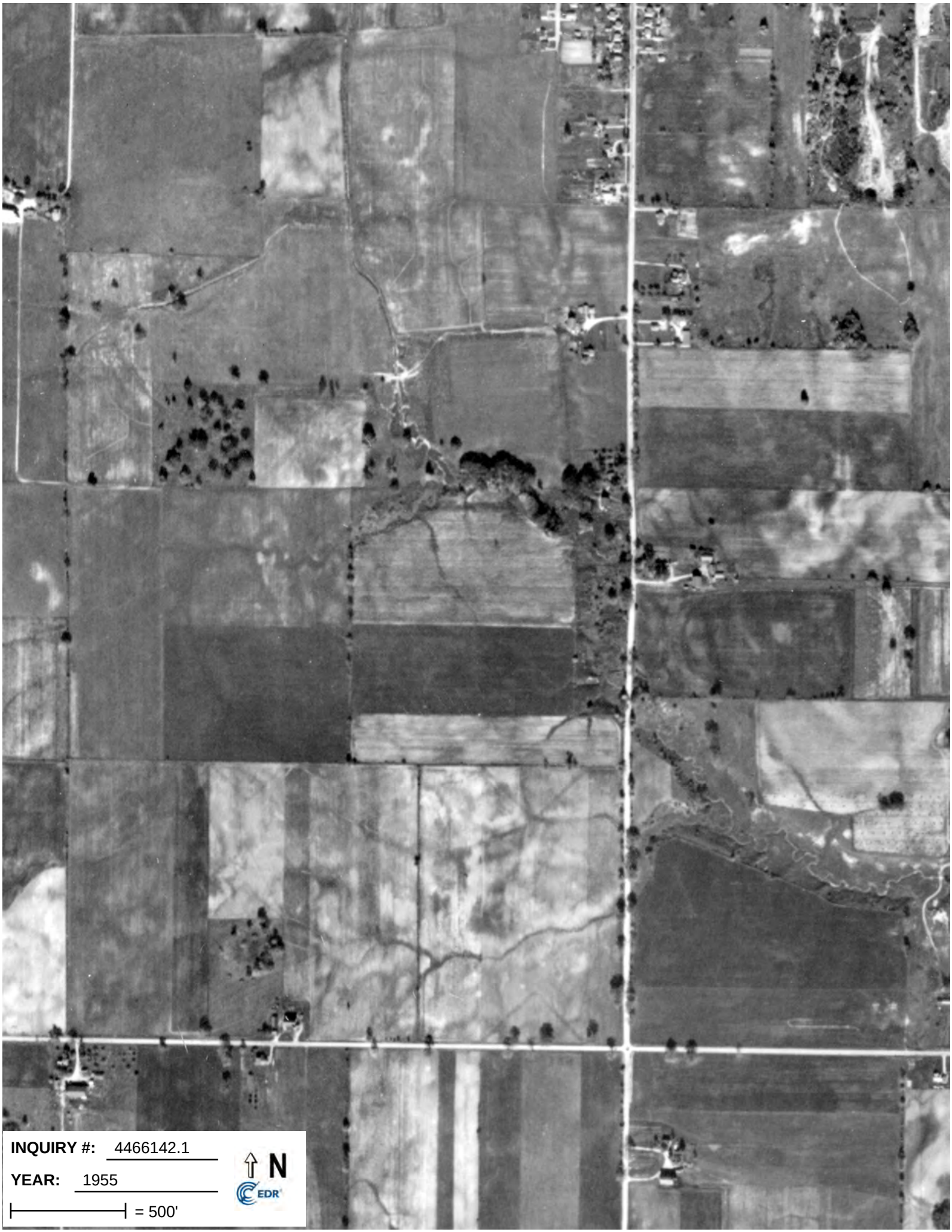
N
EDR


INQUIRY #: 4466142.1
YEAR: 1950
= 500'
N
EDR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YEAR: 1955
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EDR


INQUIRY #: 4466142.1
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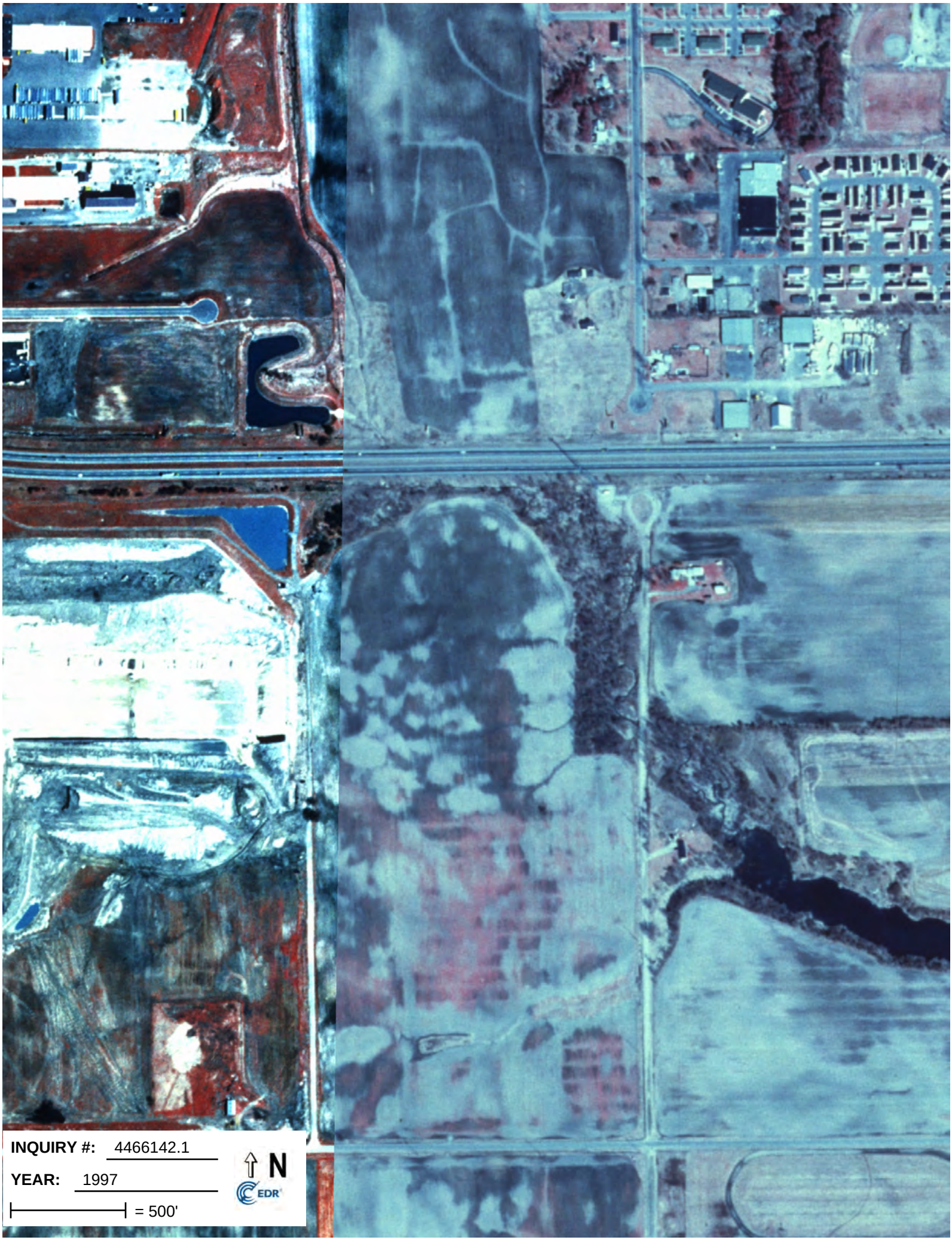
EDR


INQUIRY #: 4466142.1
YEAR: 1968
= 500'
N
EDR


INQUIRY #: 4466142.1
YEAR: 1974
= 600'
N
EDR


INQUIRY #: 4466142.1
YEAR: 1993
= 500'
N
EDR


INQUIRY #: 4466142.1
YEAR: 1997
= 500'
N
EDR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YEAR: 1997
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EDR


INQUIRY #: 4466142.1
YEAR: 2005
= 500'
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EDR


INQUIRY #: 4466142.1
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 4466142.1
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 4466142.1
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4466142.1
YEAR: 2012
= 500'
N
EDR

# APPENDIX D

# NATIONAL WETLAND INVENTORY MAP

U.S. Fish and Wildlife Servic

# National Wetlands Inventory

**ottawa county landfil**

**Oct 27, 2015**


## Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

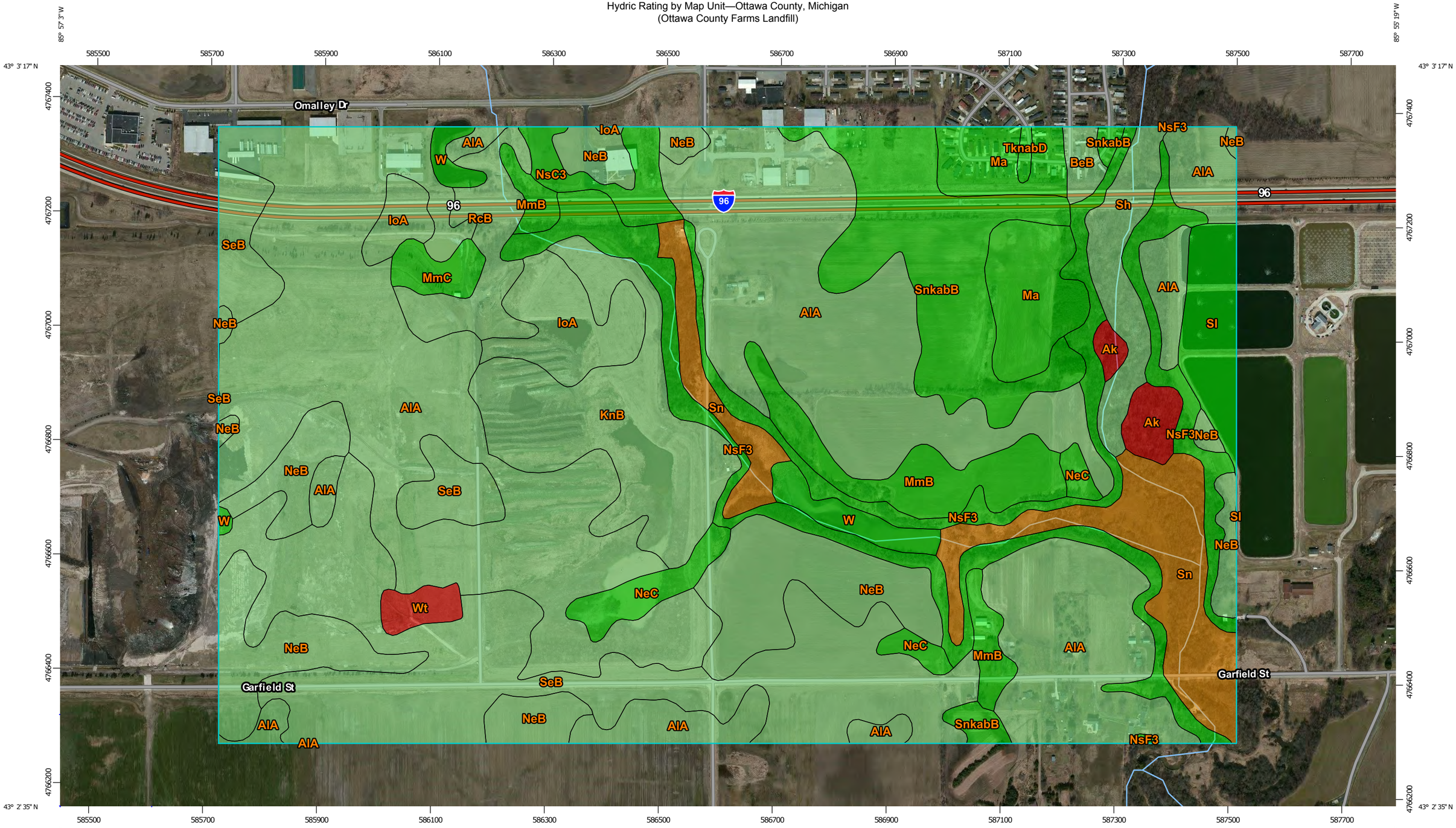


**User Remarks:**

# APPENDIX E

# OTTAWA COUNTY SOIL SURVEY MAP

Hydric Rating by Map Unit—Ottawa County, Michigan
(Ottawa County Farms Landfill)




Map Scale: 1:6,310 if printed on B landscape (17" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Soil Rating Lines**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Soil Rating Points**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ottawa County, Michigan
Survey Area Data: Version 10, Sep 18, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2012—Apr 6, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Hydric Rating by Map Unit

| Hydric Rating by Map Unit— Summary by Map Unit — Ottawa County, Michigan (MI139) | | | | |
|---|---|---|---|---|
| **Map unit symbol** | **Map unit name** | **Rating** | **Acres in AOI** | **Percent of AOI** |
| Ak | Algansee loamy sand | 100 | 3.7 | 0.8% |
| AlA | Allendale sandy loam, 0 to 4 percent slopes | 10 | 163.2 | 34.2% |
| BeB | Belding sandy loam, 2 to 6 percent slopes | 5 | 1.9 | 0.4% |
| IoA | Iosco loamy sand, 0 to 4 percent slopes | 8 | 12.3 | 2.6% |
| KnB | Kawkawlin loam, 2 to 6 percent slopes | 5 | 26.4 | 5.5% |
| Ma | Made land | 0 | 15.5 | 3.2% |
| MmB | Menominee loamy sand, 2 to 6 percent slopes | 0 | 15.5 | 3.2% |
| MmC | Menominee loamy sand, 6 to 12 percent slopes | 0 | 3.0 | 0.6% |
| NeB | Nester loam, 2 to 6 percent slopes | 5 | 41.1 | 8.6% |
| NeC | Nester loam, 6 to 12 percent slopes | 0 | 6.5 | 1.4% |
| NsC3 | Nester clay loam, 6 to 12 percent slopes, severely eroded | 0 | 5.0 | 1.1% |
| NsF3 | Nester clay loam, 25 to 45 percent slopes, severely eroded | 0 | 32.8 | 6.9% |
| RcB | Richter sandy loam, 2 to 6 percent slopes | 5 | 9.1 | 1.9% |
| SeB | Selkirk loam, 2 to 6 percent slopes | 10 | 64.6 | 13.5% |
| Sh | Shoals loam | 5 | 8.9 | 1.9% |
| Sl | Sewage lagoons | 0 | 7.9 | 1.6% |
| Sn | Sloan loam | 95 | 24.0 | 5.0% |
| SnkabB | Spinks-Fern complex, 2 to 6 percent slopes | 0 | 28.0 | 5.9% |
| TknabD | Tekenink-Spinks loamy sands, 12 to 18 percent slopes | 0 | 0.5 | 0.1% |
| W | Water | 0 | 5.4 | 1.1% |
| Wt | Washtenaw loam | 100 | 2.3 | 0.5% |
| **Totals for Area of Interest** | | | **477.8** | **100.0%** |

## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## Rating Options

*Aggregation Method:* Percent Present

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Lower

# APPENDIX F

# WETLAND INSPECTION DATA FORMS

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ottawa County Farms Landfill Expansion City/County: Ottawa County Sampling Date: 11/11/2015

Applicant/Owner: Republic Services State: MI Sampling Point: #1

Investigator(s): Ed Stefanek Section, Township, Range: 26, T8N, R14W

Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope %: 5%

Subregion (LRR or MLRA): LRR L Lat: 43deg 3' 7.8" Long: 85 deg 56' 26.7" Datum: wgs84

Soil Map Unit Name: Richter sandy loam NWI classification: nonhydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes x | No ____ | **Is the Sampled Area** |
| Hydric Soil Present? | Yes x | No ____ | **within a Wetland?** **Yes** X **No** ____ |
| Wetland Hydrology Present? | Yes x | No ____ | If yes, optional Wetland Site ID: ____ |

Remarks: (Explain alternative procedures here or in a separate report.)

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- x Sediment Deposits (B2)
- x Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No x | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No x | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No x | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
aerial photos show drainage swale, site inspection shows sediment deposits and drift deposits from previous flooding events, photographs during site inspection

Remarks:
Photos are provided in report

**VEGETATION** – Use scientific names of plants.

Sampling Point: #1

| Tree Stratum (Plot size: ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15 x `15 ) | | | |
| 1. | | | |
| 2. *Populus deltoides* | 10 | Yes | FAC |
| 3. *Acer rubrum* | 10 | Yes | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 20 =Total Cover | | |
| **Herb Stratum** (Plot size: 5x5 ) | | | |
| 1. *Phalaris arundinacea* | 50 | Yes | FACW |
| 2. *Carex* | 10 | No | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 60 =Total Cover | | |
| **Woody Vine Stratum** (Plot size: ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 50 | x 2 = | 100 |
| FAC species | 30 | x 3 = | 90 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 80 (A) | | 190 (B) |

Prevalence Index = B/A = 2.38

**Hydrophytic Vegetation Indicators:**

- x 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** **Yes** x **No**

Remarks: (Include photo numbers here or on a separate sheet.)
see report Photos 1-9

## SOIL

Sampling Point #1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-7 | 10YR 3/1 | | | | | | Sandy | sandy loam |
| 7-12 | 10YR 5/2 | | | | | | Sandy | loamy sand |
| 12-20 | 10YR 4/4 | | | | | | Sandy | loamy sand |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- _x_ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- _x_ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** _X_ **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ottawa County Farms Landfill Expansion City/County: Ottawa County Sampling Date: 11/11/2015

Applicant/Owner: Republic Services State: MI Sampling Point: #2

Investigator(s): Ed Stefanek Section, Township, Range: 26, T8N, R14W

Landform (hillside, terrace, etc.): top of hill slope Local relief (concave, convex, none): none Slope %: 0

Subregion (LRR or MLRA): LRR L Lat: 43deg 3' 6.7" Long: 85 deg 56' 26.2" Datum: wgs84

Soil Map Unit Name: Richter sandy loam NWI classification: nonhydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No x | **Is the Sampled Area** |
| Hydric Soil Present? | Yes ____ | No x | **within a Wetland?** **Yes** ____ **No** X |
| Wetland Hydrology Present? | Yes ____ | No x | If yes, optional Wetland Site ID: ____ |

Remarks: (Explain alternative procedures here or in a separate report.)

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No x | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No x | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No x | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
aerial photos and photographs during site inspection

Remarks:
Photos are provided in report

**VEGETATION** – Use scientific names of plants.

Sampling Point: #2

| Tree Stratum (Plot size: ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15 x `15 ) | | | |
| 1. | | | |
| 2. *Acer rubrum* | 10 | Yes | FAC |
| 3. *Quercus alba* | 5 | Yes | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 15 =Total Cover | | |
| **Herb Stratum** (Plot size: 5x5 ) | | | |
| 1. *Solidago altissima* | 20 | Yes | FACU |
| 2. *Dactylis glomerata* | 30 | Yes | FAC |
| 3. *Toxicodendron radicans* | 10 | No | FAC |
| 4. *Trifolium repens* | 20 | Yes | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 80 =Total Cover | | |
| **Woody Vine Stratum** (Plot size: ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 50 | x 3 = | 150 |
| FACU species | 45 | x 4 = | 180 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 95 (A) | | 330 (B) |

Prevalence Index = B/A = 3.47

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** **Yes** ___ **No** x

Remarks: (Include photo numbers here or on a separate sheet.)
see report Photos 1-9

## SOIL

Sampling Point #2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-7 | 10YR 3/2 | | | | | | Sandy | sandy loam |
| 7-12 | 10YR 5/2 | | | | | | Sandy | loamy sand |
| 12-20 | 10YR 4/4 | | | | | | Sandy | loamy sand |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ottawa County Farms Landfill Expansion City/County: Ottawa County Sampling Date: 11/11/2015

Applicant/Owner: Republic Services State: MI Sampling Point: #3

Investigator(s): Ed Stefanek Section, Township, Range: 26, T8N, R14W

Landform (hillside, terrace, etc.): drainage plain of creek Local relief (concave, convex, none): none Slope %: 0

Subregion (LRR or MLRA): LRR L Lat: 43deg 3' 0.9" Long: 85 deg 56' 15.6" Datum: wgs84

Soil Map Unit Name: Sloan loam NWI classification: hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes x | No ____ | **Is the Sampled Area** |
| Hydric Soil Present? | Yes x | No ____ | **within a Wetland?** **Yes** X **No** ____ |
| Wetland Hydrology Present? | Yes x | No ____ | If yes, optional Wetland Site ID: ____ |

Remarks: (Explain alternative procedures here or in a separate report.)

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- x Sediment Deposits (B2)
- x Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No x | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No x | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No x | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
aerial photos and photographs during site inspection

Remarks:
Photos are provided in report

**VEGETATION** – Use scientific names of plants.

Sampling Point: #3

| Tree Stratum (Plot size: 30 x 30 ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Populus deltoides* | 10 | Yes | FAC |
| 2. *Carya laciniosa* | 5 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 15 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 x `15 ) | | | |
| 1. | | | |
| 2. *Quercus palustris* | 10 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 10 | =Total Cover | |
| **Herb Stratum** (Plot size: 5x5 ) | | | |
| 1. *Phalaris arundinacea* | 35 | Yes | FACW |
| 2. *Bidens frondosa* | 25 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 60 | =Total Cover | |
| **Woody Vine Stratum** (Plot size: ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 50 | x 2 = | 100 |
| FAC species | 35 | x 3 = | 105 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 85 (A) | | 205 (B) |

Prevalence Index = B/A = 2.41

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** **Yes** x **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
see report Photos 11-22

## SOIL

Sampling Point #3

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-12 | 10YR 3/1 | | | | | | Loamy/Clayey | loam |
| 12-20 | 10YR 5/1 | | | | | | Loamy/Clayey | silty clay loam |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- _x_ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** _X_ **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ottawa County Farms Landfill Expansion City/County: Ottawa County Sampling Date: 11/11/2015

Applicant/Owner: Republic Services State: MI Sampling Point: #4

Investigator(s): Ed Stefanek Section, Township, Range: 26, T8N, R14W

Landform (hillside, terrace, etc.): top of hill Local relief (concave, convex, none): concave Slope %: 5

Subregion (LRR or MLRA): LRR L Lat: 43 deg 3' 01" Long: 85 deg 56' 6.9" Datum: wgs84

Soil Map Unit Name: Kawkawlin loam NWI classification: non-hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes _____ | No x | **Is the Sampled Area** |
| Hydric Soil Present? | Yes _____ | No x | **within a Wetland?** **Yes** _____ **No** X |
| Wetland Hydrology Present? | Yes _____ | No x | If yes, optional Wetland Site ID: _____ |

Remarks: (Explain alternative procedures here or in a separate report.)

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No x | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No x | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No x | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
aerial photos and photographs during site inspection

Remarks:
Photos are provided in report

**VEGETATION** – Use scientific names of plants. Sampling Point: #4

| Tree Stratum (Plot size: 30 x 30 ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | =Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 x `15 ) | | | |
| 1. *Crataegus monogyna* | 10 | Yes | FACU |
| 2. *Quercus alba* | 10 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 20 =Total Cover | | |
| Herb Stratum (Plot size: 5x5 ) | | | |
| 1. *Solidago altissima* | 35 | Yes | FACU |
| 2. *Bidens frondosa* | 25 | Yes | FAC |
| 3. *Toxicodendron radicans* | 5 | No | FAC |
| 4. *Dactylis glomerata* | 15 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 80 =Total Cover | | |
| Woody Vine Stratum (Plot size: ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 30 | x 3 = | 90 |
| FACU species | 70 | x 4 = | 280 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 370 (B) |

Prevalence Index = B/A = 3.70

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** **Yes** ___ **No** x

Remarks: (Include photo numbers here or on a separate sheet.)
see report Photos 11-22

## SOIL

Sampling Point #4

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-7 | 10YR 4/1 | | | | | | Loamy/Clayey | |
| 7-14 | 10YR 5/2 | | | | | | Loamy/Clayey | |
| 14-20 | 5YR 4/4 | | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

# APPENDIX G

# PROPERTY PHOTOGRAPHS

Photos #1 and #2

Photos #3 and #4

Photos #5 and #6

Photos #7 and #8

Photos #9 and #10

Photos #11 and #12

Photos #13 and #14

Photos #15 and #16

Photos #17 and #18

Photos #19 and #20

Photos #21 and #22

Photo #23

**ATTACHMENT 3-II-C**

HISTORICAL AND ARCHAEOLOGICAL CORRESPONDENCE

Weaver Consultants Group

December 16, 2015
Project No.: 0120-685-11-03

Martha MacFarlane-Faes
Deputy State Historic Preservation Officer
702 W Kalamazoo St.
Lansing, MI 48909

Re: Request for Information – Historical Sites
Ottawa County Farms Landfill

Dear Ms. MacFarlane-Faes:

The Ottawa County Farms Landfill is an existing municipal landfill located in Coopersville, Michigan. The location of the facility is shown on the attached portion of the USGS Quadrangle.

The landfill is currently undergoing the permitting process for an expansion in its size. As part of the permit process, the landfill must provide a list of historical sites proximate to the landfill boundary.

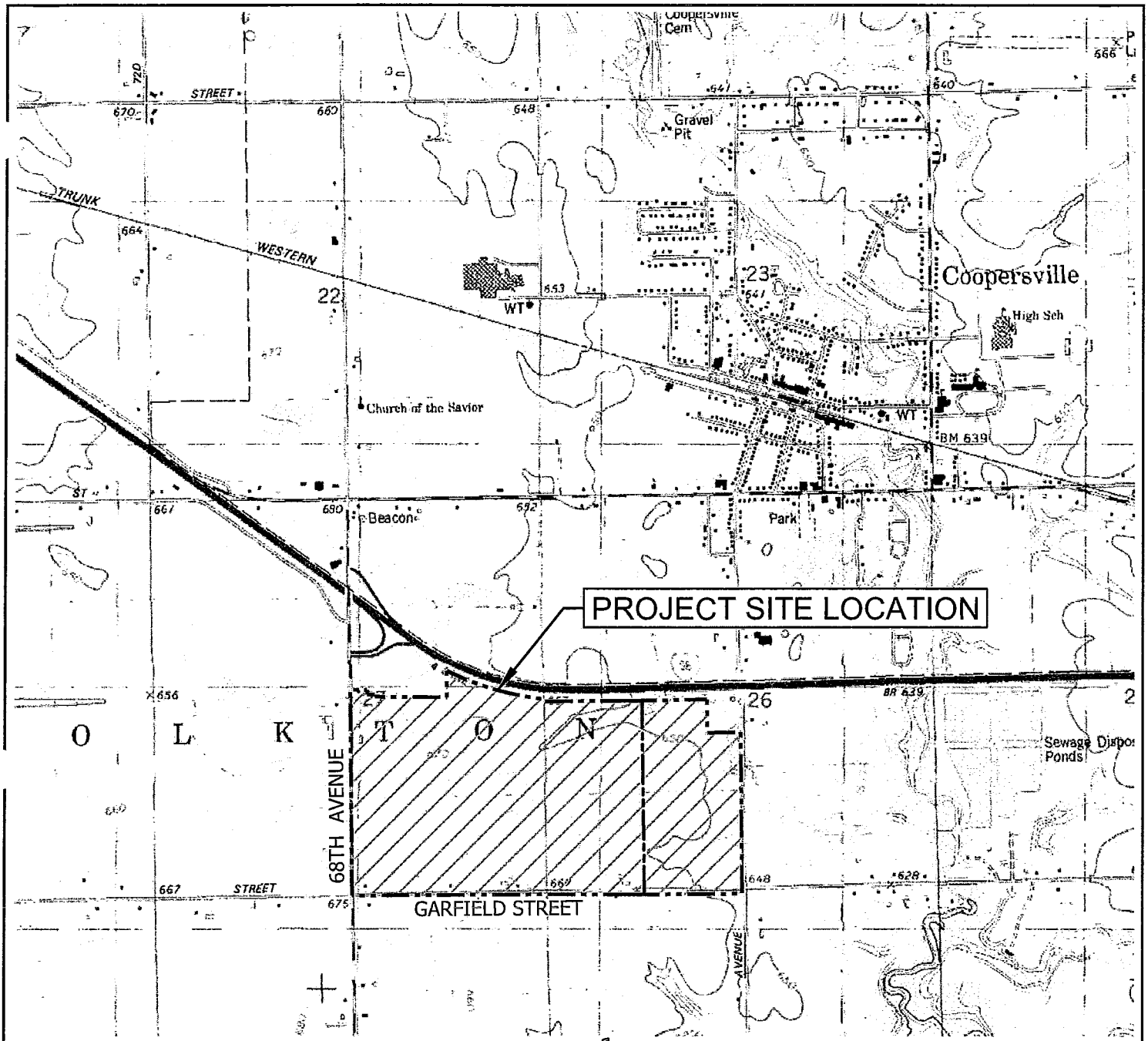
We would greatly appreciate if you could provide us with this information on historical sites or direct us on how to obtain this information. Please call us at 616.458.8052 if you have any questions or need additional information.

Sincerely,
Weaver Consultants Group

Tamara A. Perkins, P.E.
Senior Project Manager

Katie Kinley
Staff Engineer

Attachment: Site Location




NOTE: Base map from 1984 USGS mapping.

N

SCALE: 1" = 2000'



PREPARED FOR

REPUBLIC SERVICES, INC.
15550 68TH AVE.
COOPERSVILLE, MI

# PROJECT SITE LOCATION

OTTAWA COUNTY LANDFILL
OTTAWA COUNTY, MICHIGAN



Weaver Consultants Group
GRAND RAPIDS, MICHIGAN
(616) 458-8052 www.wcgrp.com

| | |
|---|---|
| DRAWN BY: | JDA |
| REVIEWED BY: | KRK |
| DATE: | 12/14/2015 |
| FILE: | 0120-685-11-02 |
| CAD: | OCF_PROJ_SITE-FIG |

FIGURE 1

STATE OF MICHIGAN
RICK SNYDER
GOVERNOR
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
STATE HISTORIC PRESERVATION OFFICE
KEVIN ELSENHEIMER
EXECUTIVE DIRECTOR

December 21, 2015

TAMARA PERKINS
WEAVER CONSULTANTS GROUP
400 ANN STREE NW
SUITE 201A
GRAND RAPIDS MI 49504

Re: Ottawa County Farms Landfill

Dear Ms. Perkins:

The State Historic Preservation Officer (SHPO) received your request. It appears that you gathering information in anticipation of consultation with the State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act of 1966, as amended.

Section 106 requires federal agencies to take into account the effect of their undertakings on historic properties. The Section 106 regulations specify what is required for a Section 106 review [36 CFR § 800.11]. It is the responsibility of the federal agency, *not the SHPO,* to fulfill the requirements of Section 106, thus, it is *the federal agency's* responsibility to apply the criteria for listing on the National Register of Historic Places to properties within the project's area of potential effects and *provide the SHPO* with a determination regarding the impact on historic properties. In some instances, the federal agency may delegate legal responsibility to a state, local, or tribal government.

If at this time, you are merely seeking information on above-ground historic resources that are listed in the National Register of Historic Places, please refer to the National Register Information System database at: http://www.nr.nps.gov/ . For information regarding archaeological sites, please contact the State Archaeologist, Dr. Dean Anderson, at (517) 373-1618. The SHPO cannot conduct such research on your behalf.

If in fact you are being asked to carry out Section 106 consultation on an agency's behalf, the mandatory application form and instructions for submitting projects for review under Section 106 may be downloaded in MS Word format from our website at www.michigan.gov/shposection106. Please read each requirement carefully in its respective field, and respond in full.

If you have any questions, please contact me at (517) 335 2721 or by email at grennellb@michigan.gov.
Thank you for your cooperation.

Sincerely,

Brian G. Grennell
Cultural Resource Protection Specialist

for Brian D. Conway
State Historic Preservation Officer

Enclosure(s)

National Register of Historic Places: Listed Properties as of 06/01/2014

| Reference Number | State | County | City | Resource Name | Address | Listed Date | Resource Type | Multiple Name |
|---|---|---|---|---|---|---|---|---|
| 73000956 | MICHIGAN | Ottawa | NW Ottawa County | Battle Poin | Address Restricted | 19730814 | SITE | |
| 87002139 | MICHIGAN | Ottawa | Spring Lake | Bilz, Aloys, | 107 S. Division St. | 19871214 | BUILDING | |
| 84001478 | MICHIGAN | Ottawa | Holland | Cappon, Isa | 228 W. 9th St. | 19840126 | BUILDING | |
| 82002860 | MICHIGAN | Ottawa | Grand Haven | Ferry, Edw | 514 Lafayette St. | 19820319 | BUILDING | |
| 99001535 | MICHIGAN | Ottawa | Spring Lake Township | Fruitport R | Fruitport Rd. over Pettys Bayou | 19991217 | STRUCTURE | Highway Bridges of Michigan MPS |
| 84000548 | MICHIGAN | Ottawa | Holland | Gold, Egbe | 1116 Hazel Ave. | 19841227 | BUILDING | |
| 73002294 | MICHIGAN | Ottawa | Coopersville | Grand Rapi | 363 W. Main St. | 19730206 | BUILDING | |
| 90001534 | MICHIGAN | Ottawa | Holland | Holland Do | Roughly, Eighth St. from just E of College | 19901004 | DISTRICT | |
| 78001509 | MICHIGAN | Ottawa | Holland | Holland Ha | South Pier, Holland Harbor | 19780720 | BUILDING | |
| 83000889 | MICHIGAN | Ottawa | Holland | Holland His | 11th, 12th, 13th Sts., and Washington, M | 19830512 | DISTRICT | |
| 90001234 | MICHIGAN | Ottawa | Holland | Holland His | Roughly bounded by River Ave., Pine Ave | 19900810 | DISTRICT | |
| 85000063 | MICHIGAN | Ottawa | Holland | Holland Ol | 108 E. 8th St. | 19850111 | BUILDING | |
| 90001243 | MICHIGAN | Ottawa | Holland | Holland Re | 57 E. 10th St. | 19900823 | BUILDING | |
| 08000224 | MICHIGAN | Ottawa | Hudsonville | Hudsonville | 5692 School Ave. | 20080327 | BUILDING | |
| 99000337 | MICHIGAN | Ottawa | Holland | Morrissey, | 190 W. 9th St. | 19990329 | BUILDING | |
| 98001061 | MICHIGAN | Ottawa | Olive Township | Olive Town | 11611 Stanton St. | 19980814 | BUILDING | |
| 95000451 | MICHIGAN | Ottawa | Ottawa Beach | Ottawa Bea | Ottawa Beach Rd., Park Township | 19950414 | DISTRICT | |
| 00001490 | MICHIGAN | Ottawa | Grand Haven | Pere Marq | Chinook Pier Park, Jackson Ave. | 20001207 | STRUCTURE | |
| 95001161 | MICHIGAN | Ottawa | Grand Haven | Piers and R | Mouth of Grand R. | 19951023 | STRUCTURE | |
| 09000203 | MICHIGAN | Ottawa | Grand Haven | Robbins, N | 20 S. 5th Ave. | 20090416 | BUILDING | |
| 73002158 | MICHIGAN | Ottawa | Crockery | Spoonville | Address Restricted | 19730330 | SITE | |
| 71000418 | MICHIGAN | Ottawa | Holland | Third Refor | 110 W. 12th St. | 19710416 | BUILDING | |
| 89000790 | MICHIGAN | Ottawa | Holland | Van Raalte, | 1076 Sixteenth St. | 19891204 | BUILDING | |

Source: http://focus.nps.gov/nrhp/Download/
All historic sites in National Register for Ottawa County, MI, as of 1/5/2016





# A Look at Section 106 Review

**What is Section 106 review?**

This term refers to the Federal review process designed to ensure that historic properties are considered during Federal project planning and execution. The review process is administered by the Advisory Council on Historic Preservation, an independent Federal agency, together with the State Historic Preservation Office.

**Who established Section 106?**

The Congress did, as part of the National Historic Preservation Act (NHPA) of 1966 [PDF]. NHPA, strengthened and expanded by several subsequent amendments, today has become the cornerstone of this country's historic preservation policy.

**Why was Section 106 created?**

NHPA was enacted because of public concern that so many of our Nation's historic resources were not receiving adequate attention as the Government sponsored much-needed public works projects. In the 1960s, Federal preservation law applied only to a handful of nationally significant properties, and Congress recognized that new legislation was needed to protect the many other historic properties that were being harmed by Federal activities.

**What does NHPA say?**

Section 106 of NHPA requires that every Federal agency "take into account" how each of its undertakings could affect historic properties. An agency must also afford the Council a reasonable opportunity to comment on the agency's project.

**What is a Federal "undertaking"?**

This term includes a broad range of Federal activities: construction, rehabilitation and repair projects, demolition, licenses, permits, loans, loan guarantees, grants, Federal property transfers, and many other types of Federal involvement. Whenever one of these activities affects a historic property, the sponsoring agency is obligated to seek Council comments.

**What is a historic property?**

For purposes of Section 106, any property listed in or eligible for the National Register of Historic Places is considered historic.

The National Register is this country's basic inventory of historic resources and is maintained by the Secretary of the Interior. The list includes buildings, structures, objects, sites, districts, and archeological resources. The listed properties are not just of nationwide importance; most are significant primarily at the State or local level. It is important to note that the protections of Section 106 extend to properties that possess significance but have not yet been listed or formally determined eligible for listing. Even properties that have not yet been discovered (such as archeological properties), but that possess significance, are subject to Section 106 review.

## The Advisory Council

**What is the Advisory Council on Historic Preservation?**

The 19-member Advisory Council on Historic Preservation is composed of a chairman, vice chairman, six other private citizen members, a governor, and a mayor--all appointed by the President of the United States. The Council also includes the Secretaries of the Interior and Agriculture the heads of four Federal agencies designated by the President, the Architect of the Capitol, the chairman of the National Trust for Historic Preservation, and the

president of the National Conference of State Historic Preservation Officers. The Council members usually meet four times during the year. Day-to-day business of the Council involving Section 106 review is conducted by an executive director and a professional staff of historians, architects, archaeologists, planners, lawyers, and administrative personnel.

## Section 106 Participants

### Who initiates Section 106 review?

The Federal agency involved in the proposed project or activity is responsible for initiating and completing the Section 106 review process. Under certain circumstances, local governmental bodies may act as the responsible agency. The agency works with the State Historic Preservation Officer (an official appointed in each State or territory to administer the national historic preservation program) and the Council to do so. In this fact sheet, the term "agency" is used to mean the responsible unit of government, be it Federal or local. There can be other participants in Section 106 review as well. At times, local governments, representatives of Indian tribes, applicants for Federal grants, licenses or permits, and others may join in the review process when it affects their interests or activities.

### How long does Section 106 review take?

By law, the Michigan State Historic Preservation Office has thirty days to review a project, beginning on the day it is received by our office. In the event a project is found to have an adverse effect on historic resources and the federal agency disagrees with the finding of adverse effect, the federal agency may request the Advisory Council for Historic Preservation (ACHP) review the finding. In such a case, the ACHP will provide its opinion within 15 days of receiving the documented finding from the federal agency. At its discretion, the ACHP may extend that time period for an additional 15 days, in which case it will notify the agency of such an extension prior to the end of the initial 15-day period.

Please be aware that if your project is found to have an adverse effect on historic resources, the timeline of thirty days applies only to the initial review and finding for the project. The process of resolving the adverse effect and moving to the signing of a Memorandum of Agreement can be a lengthy process.

Timing is crucial to the Section 106 process. It is important that consideration of historic properties occur in the early stages of a project so that preservation concerns can receive thorough consideration as a project is planned. Early consideration also permits modifications to a project while they are relatively easy to accomplish and reduces the potential for conflict and delay.

## Additional Information

### Where is more information available?

This brief look at Section 106 review cannot tell the whole story. For complete information about the Council's review process, consult the Council's regulations at 36 CFR Part 800, published September 2, 1986. The Council has available without charge an annotated version of its regulations, which aids understanding of the regulatory language, as well as a booklet entitled Section 106, Section 106, Step-by-Step, which provides a more detailed introductory look at the review process. A complete list of publications in the "Working with Section 106" series is available from the Council.

For information about any of the programs described on this site, write the Michigan State Historic Preservation Office, 702 W. Kalamazoo St., P.O. Box 30740, Lansing, MI 48909-8240, or contact us at 517-373-1630 or er@michigan.gov.

---

State Historic Preservation Office, Michigan State Housing Development Authority
Send comments about this page to preservation@michigan.gov.

NATIONAL REGISTER BULLETIN

HOW TO APPLY THE NATIONAL REGISTER CRITERIA FOR EVALUATION



**U.S. Department of the Interior, National Park Service**

# II. NATIONAL REGISTER CRITERIA FOR EVALUATION

## Criteria for Evaluation

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

**A.** That are associated with events that have made a significant contribution to the broad patterns of our history; or

**B.** That are associated with the lives of significant persons in our past; or

**C.** That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

**D.** That have yielded or may be likely to yield, information important in history or prehistory.

## Criteria Considerations

Ordinarily cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties *will qualify* if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

**a.** A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

**b.** A building or structure removed from its original location but which is primarily

significant for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

**c.** A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life; or

**d.** A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

**e.** A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

**f.** A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

**g.** A property achieving significance within the past 50 years if it is of exceptional importance.

Previous Back to top of page Next

National Register Home | Publications Home | Previous Page | Next Page

Comments or Questions

JPJ

Weaver Consultants Group

December 16, 2015
Project No.: 0120-685-11-03

Dean Anderson, Ph.D.
State Archaeologist
Michigan Historical Center
702 West Kalamazoo Street, P.O. Box 30740
Lansing, MI 48909-8240

Re: Request for Information – Archaeological Sites
Ottawa County Farms Landfill

Dear Dr. Anderson:

The Ottawa County Farms Landfill is an existing municipal landfill located in Coopersville, Michigan. The location of the facility is shown on the attached portion of the USGS Quadrangle.

The landfill is currently undergoing the permitting process for an expansion in its size. As part of the permit process, the landfill must provide a list of archaeological sites proximate to the site.

We would greatly appreciate if you could provide us with the archaeological information or direct us on how to obtain this information. Please call us at 616.458.8052 if you have any questions or need additional information.

Sincerely,
Weaver Consultants Group

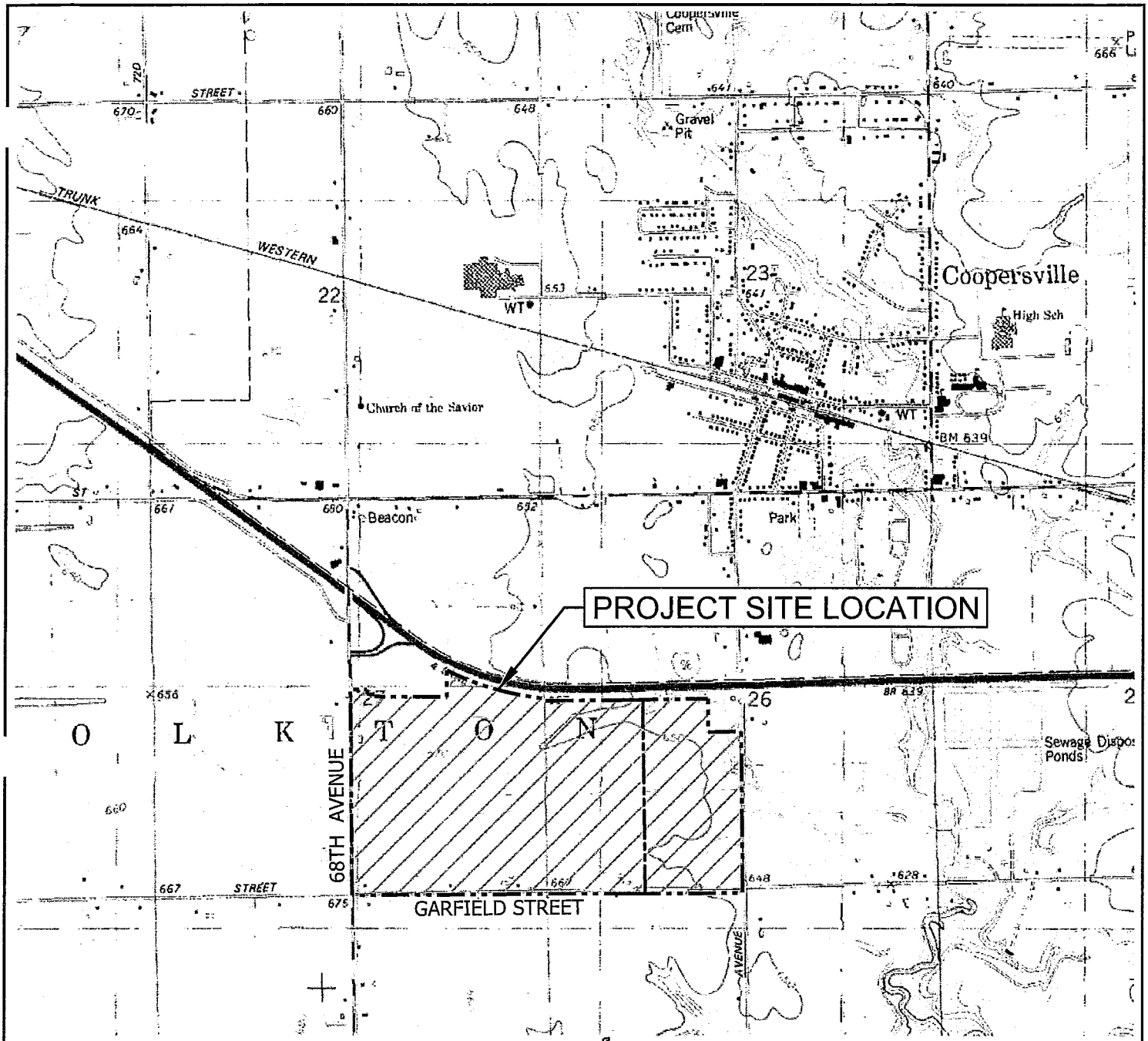
Tamara A. Perkins, P.E.
Senior Project Manager

Katie Kinley
Staff Engineer

Attachment: Site Location



400 Ann St NW • Suite 201A • Grand Rapids, Michigan 49504 • 616.458.8052 • wcgrp.com • Offices Nationwide




NOTE: Base map from 1984 USGS mapping.

N

SCALE: 1" = 2000'

LOCATION: R:\PROJECTS\0120 - Allied\0120-685 Ottawa County (MI)\11\02-03 Expansion Permit\CADD\Figures\OCF_PROJ_SITE-FIG.dwg
LAYOUT: COVER SHEET
DATE/TIME: December 15, 2015 - 2:28pm
PLOTTED BY: jjnka



PREPARED FOR

REPUBLIC SERVICES, INC.
15550 68TH AVE.
COOPERSVILLE, MI

PROJECT SITE LOCATION

OTTAWA COUNTY LANDFILL
OTTAWA COUNTY, MICHIGAN



Weaver Consultants Group
GRAND RAPIDS, MICHIGAN
(616) 458-8052 www.wcgrp.com

| | |
|---|---|
| DRAWN BY: | JDA |
| REVIEWED BY: | KRK |
| DATE: | 12/14/2015 |
| FILE: | 0120-685-11-02 |
| CAD: | OCF_PROJ_SITE-FIG |

FIGURE 1

## Perkins, Tamara

**From:** Anderson, Dean (MSHDA) <AndersonD15@michigan.gov>
**Sent:** Tuesday, January 05, 2016 4:22 PM
**To:** Perkins, Tamara
**Subject:** RE: Ottawa County Farms Landfill - Archaeological Information Request

Hi Tammy,

I checked our archaeological site file records for the Ottawa County Farms Landfill location in Coopersville. We have no record of any archaeological sites at that location. Further, based on the environmental characterictics of the general location, it looks like an area with low archaeological potential.

If you have any other questions, please let me know.

Dean

Dean L. Anderson, Ph.D.
State Archaeologist
State Historic Preservation Office
Michigan Library and Historical Center
Box 30740
702 West Kalamazoo
Lansing, MI 48909-8240

Andersond15@michigan.gov

(517) 373-1618

**From:** Perkins, Tamara [mailto:tperkins@wcgrp.com]
**Sent:** Tuesday, January 05, 2016 10:10 AM
**To:** Anderson, Dean (MSHDA) <AndersonD15@michigan.gov>
**Cc:** Kinley, Katie <kkinley@wcgrp.com>
**Subject:** Ottawa County Farms Landfill - Archaeological Information Request

Dr. Anderson-
I am in receipt of your voicemail message from last week and appreciate your prompt response. An emailed statement from you pertaining to archaeological information available for the subject site in Coopersville, Michigan would be sufficient for our needs.
Thank you.
Tammy

**Tamara Perkins**
Senior Project Manager

Weaver Consultants Group
400 Ann Street N.W. | Suite 201A

**ATTACHMENT 3-II-D**

ENDANGERED SPECIES CORRESPONDENCE

Weaver Consultants Group

December 16, 2015
Project No.: 0120-685-11-03

Penney Melchoir
Field Resource Management Supervisor
8562 East Stoll Rd.
East Lansing, MI 48823

Re: Request for Information – Endangered Species
Ottawa County Farms Landfill

Dear Ms. Melchoir:

The Ottawa County Farms Landfill is an existing municipal landfill located in Coopersville, Michigan. The location of the facility is shown on the attached portion of the USGS Quadrangle.

The landfill is currently undergoing the permitting process for an expansion in its size. As part of the permit process, the landfill must provide a list of any threatened or endangered species whose range lies with the property boundaries of the site.

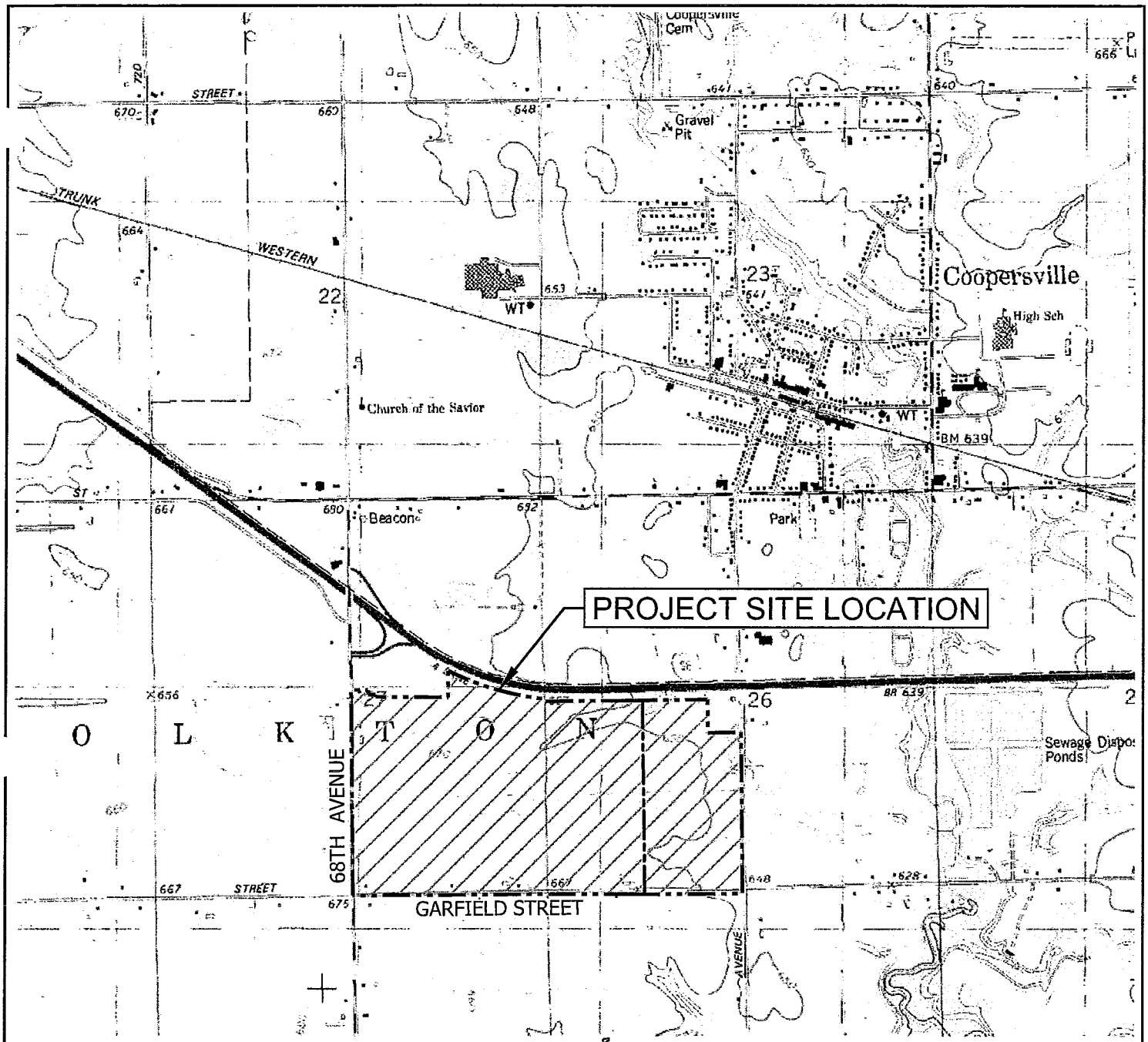
We would greatly appreciate if you could provide us with this information on threatened or endangered species or direct us on how to obtain this information. Please call us at 616.458.8052 if you have any questions or need additional information.

Sincerely,
Weaver Consultants Group

Tamara A. Perkins, P.E.
Senior Project Manager

Katie Kinley
Staff Engineer

Attachment: Site Location




NOTE: Base map from 1984 USGS mapping.

N

**SCALE: 1" = 2000'**

LOCATION: R:\PROJECTS\0120 - Allen\0120-685 Ottawa County (MI)\MI NOZ-03 Expansion Permit\CAD\Figures\OCF_PROJ_SITE-FIG.dwg
LAYOUT: COVER SHEET
DATE/TIME: December 15, 2015 - 2:28pm
PLOTTED BY: jmink



PREPARED FOR

REPUBLIC SERVICES, INC.
15550 68TH AVE.
COOPERSVILLE, MI

# PROJECT SITE LOCATION

OTTAWA COUNTY LANDFILL
OTTAWA COUNTY, MICHIGAN



Weaver Consultants Group
GRAND RAPIDS, MICHIGAN
(616) 458-8052 www.wcgrp.com

| | |
|---|---|
| DRAWN BY: | JDA |
| REVIEWED BY: | KRK |
| DATE: | 12/14/2015 |
| FILE: | 0120-685-11-02 |
| CAD: | OCF_PROJ_SITE-FIG |

FIGURE 1

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING

RICK SNYDER
GOVERNOR

KEITH CREAGH
DIRECTOR

January 4, 2016

Ms. Tamara A. Perkins, PE
Weaver Consultants Group
400 Ann Street NW, Suite 201A
Grand Rapids, MI 49504

Dear Ms. Perkins:

The Michigan Department of Natural Resources (DNR) is, unfortunately, no longer able to conduct Environmental Reviews (ER) and ceased acceptance of review requests September 16, 2011. Funding for the program was not included in the state budget and issuance of clearance letters will no longer be done. Project review requests can be sent to Michigan Natural Features Inventory (MNFI), a program of Michigan State University Extension.

MNFI will review projects for potential impacts to endangered species, but there is a cost to the requestor for MNFI's services. For information on environmental reviews or to request environmental reviews go to MNFI website at http://mnfi.anr.msu.edu/. Requests will no longer be accepted through the DNR Endangered Species Assessment web site.

Endangered species and wetland laws remain in place. Under Part 365 of Public Act 451 people are not allowed to take or harm any endangered or threatened of fish, plants or wildlife. The DNR will still be responsible for issuing permits and enforcement relative to the take of endangered and threatened species.

If you have any questions, please e-mail me at SargentL@michigan.gov. Thank you.

Sincerely,

Lori G. Sargent
Nongame Wildlife Biologist

MICHIGAN STATE UNIVERSITY | Extension

Ms. Katie Kinley
Staff Engineer
Weaver Consultants Group
400 Ann Street N.W., Suite 201A
Grand Rapids, MI 49504

February 4, 2016

**Re: Rare Species Review #1734 – Ottawa County Farms Landfill Expansion, Coopersville, Ottawa County, MI (T08N, R14W Section 26).**

Hello:

The location for the proposed project was checked against known localities for rare species and unique natural features, which are recorded in the Michigan Natural Features Inventory (MNFI) natural heritage database. This continuously updated database is a comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features. The absence of records in the database for a particular site may mean that the site has not been surveyed. The only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "a person shall not take, possess, transport, …fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an Endangered Species Permit from the Michigan Department of Natural Resources (MDNR), Wildlife Division. Responsibility to protect endangered and threatened species is not limited to the lists below. Other species may be present that have not been recorded in the database.

According to the natural heritage database a legally protected species has been documented within 1.5 miles of the project site, therefore, it is **possible** that negative impacts will occur. Keep in mind that **MNFI cannot fully evaluate this project without visiting the project site.** MNFI offers several levels of Rare Species Reviews, including field surveys which I would be happy to discuss with you.

Sincerely,

Michael A. Sanders

Michael A. Sanders
Rare Species Review Specialist
Michigan Natural Features Inventory

**MSU EXTENSION**

**Michigan Natural Features Inventory**

PO Box 13036
Lansing MI 48901

(517) 284-6200
Fax (517) 373-9566

mnfi.anr.msu.edu

**Comments for Rare Species Review #1734:** It is important to note that it is the applicant's responsibility to comply with both state and federal threatened and endangered species legislation. Therefore, if a state listed species occurs at a project site, and you think you need an endangered species permit please contact: Lori Sargent, Nongame Wildlife Biologist, Wildlife Division, Michigan Department of Natural Resources, P.O. Box 30444, Lansing, MI 48909, 517-284-6216, or SargentL@michigan.gov. If a federally listed species is involved and, you think a permit is needed, please contact Barb Hosler, Endangered Species Program, U.S. Fish and Wildlife Service, East Lansing office, 517-351-6326, or Barbara_Hosler@fws.gov.

**Of concern-** state endangered **Virginia bluebells** *(Mertensia virginica)* has been known to occur to the north and east of the project site in sections 26 & 27 of T08NR14W.This species inhabits rich woods and floodplain forests primarily in southern Lower Michigan. It flowers from late March to early June. Please consult MNFI's Rare Species Explorer for additional information regarding the listed species:
http://mnfi.anr.msu.edu/explorer/search.cfm.

**Special concern species and natural communities** are not protected under endangered species legislation but efforts should be taken to minimize any or all impacts. Species classified as special concern are species whose numbers are getting smaller in the state. If these species continue to decline they would be recommended for reclassification to threatened or endangered status.

**Table 1: Legally protected species within 1.5 miles of RSR #1734**

| SNAME | SCOMNAME | G_RANK | S_RANK | Firstobs | Lastobs | USESA | SPROT | ELCAT |
|---|---|---|---|---|---|---|---|---|
| *Euphorbia commutata* | Tinted spurge | G5 | S1 | 1901 | 1901 | | T | Plant |
| *Mertensia virginica* | Virginia bluebells | G5 | S1S2 | 2014-05-12 | 2014-05-12 | | E | Plant |

**Table 2: Special Concern Species and other Rare Natural Features within 1.5 miles of RSR #1734**

| SNAME | SCOMNAME | G_RANK | S_RANK | Firstobs | Lastobs | USESA | SPROT | ELCAT |
|---|---|---|---|---|---|---|---|---|
| *Euxoa aurulenta* | Dune cutworm | G5 | S1S2 | 1959 | 1959 | | SC | Animal |

## Codes to accompany Tables 1 and 2:

**State Protection Status Code Definitions (SPROT)**
E: Endangered
T: Threatened
SC: Special concern

**Global Heritage Status Rank Definitions (GRANK)**
The priority assigned by NatureServe's national office for data collection and protection based upon the element's status throughout its entire world-wide range. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.
G1 = critically imperiled globally because of extreme rarity (5 or fewer occurrences range-wide or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.
G2 = imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.
G3: Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single western state, a physiographic region in the East) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.
G4: Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
G5: Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
Q: Taxonomy uncertain

**State Heritage Status Rank Definitions (SRANK)**
The priority assigned by the Michigan Natural Features Inventory for data collection and protection based upon the element's status within the state. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.
S1: Critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.
S2: Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.
S3: Rare or uncommon in state (on the order of 21 to 100 occurrences).
S4 = apparently secure in state, with many occurrences.
S5 = demonstrably secure in state and essentially ineradicable under present conditions.
SX = apparently extirpated from state.

**Rare Species Review #1734**
**Weaver Construction Group**
**Ottawa County Farms Landfill Expansion**
**Ottawa County, MI**
**February 4, 2016**

**For projects involving Federal funding or a Federal agency authorization**

The following information is provided to assist you with **Section 7 compliance** of the Federal Endangered Species Act (ESA). The ESA directs all Federal agencies "to work to conserve endangered and threatened species. Section 7 of the ESA, called "Interagency Cooperation," is the means by which Federal agencies ensure their actions, including those they authorize or fund, do not jeopardize the existence of any listed species."

The **Ottawa County Farms Landfill Expansion Project** falls within the range of four (4) federally listed/proposed species which have been identified by the U.S. Fish and Wildlife Service (USFWS) to occur in **Ottawa County, Michigan**. The project falls within the range of the federally endangered **Indiana bat** (*Myotis sodalis*), the federally threatened **Northern long-eared bat** (*M. septentrionalis*), the federally threatened **rufa red knot** (*Calidris canutus rufa*), and the federally threatened **Pitcher's thistle** (*Cirsium pitcheri*).

**Indiana Bats**

Suitable habitat occurs within the 1.5 mile search buffer, not within the project footprint. Indiana bats are found only in the eastern United States and are typically confined to the southern three tiers of counties in Michigan. Indiana bats that summer in Michigan winter in caves in Indiana and Kentucky. This species forms colonies and forages in riparian and mature floodplain habitats. Nursery roost sites are usually located under loose bark or in hollows of trees near riparian habitat. Indiana bats typically avoid houses or other artificial structures and typically roost underneath loose bark of dead elm, maple and ash trees. Other dead trees used include oak, hickory and cottonwood.

Foraging typically occurs over slow-moving, wooded streams and rivers as well as in the canopy of mature trees. Movements may also extend into the outer edge of the floodplain and to nearby solitary trees. A summer colony's foraging area usually encompasses a stretch of stream over a half-mile in length. Upland areas isolated from floodplains and non-wooded streams are generally avoided.

**Conservation strategies:** The suggested seasonal tree cutting range for Indiana bat is between October 1 and March 31 (i.e., no cutting April 1-September 30). This applies throughout the Indiana bat range in Michigan.

**Northern Long-eared Bats**

Northern long-eared bat numbers in the northeast US have declined up to 99 percent. Loss or degradation of summer habitat, wind turbines, disturbance to hibernacula, predation, and pesticides have contributed to declines in Northern long-eared bat populations. However, no other threat has been as severe to the decline as White-nose Syndrome (WNS). WNS is a fungus

that thrives in the cold, damp conditions in caves and mines where bats hibernate. The disease is believed to disrupt the hibernation cycle by causing bats to repeatedly awake thereby depleting vital energy reserves. This species was federally listed in May 2015 primarily due to the threat from WNS.

Also called northern bat or northern myotis, this bat is distinguished from other *Myotis* species by its long ears. In Michigan, northern long-eared bats hibernate in abandoned mines and caves in the Upper Peninsula; they also commonly hibernate in the Tippy Dam spillway in Manistee County. This species is a regional migrant with migratory distance largely determined by locations of suitable hibernacula sites. Northern long-eared bats typically roost and forage in forested areas. During the summer, these bats roost singly or in colonies underneath bark, in cavities or in crevices of both living and dead trees. These bats seem to select roost trees based on suitability to retain bark or provide cavities or crevices. Common roost trees in southern Lower Michigan included species of ash, elm and maple. Foraging occurs primarily in areas along woodland edges, woodland clearings and over small woodland ponds. Moths, beetles and small flies are common food items. Like all temperate bats this species typically produces only 1-2 young per year.

Although **no known hibernacula or roost trees** have been documented within 1.5 miles of the project area, this activity occurs within the designated WNS zone (i.e., within 150 miles of positive counties/districts impacted by WNS. In addition, suitable habitat does exist in and outside of our 1.5 mile search buffer. The USFWS has prepared a dichotomous key to help determine if this action may cause prohibited take of this bat. Please consult the USFWS Endangered Species Page for more information.

**Conservation strategies:** When there are no known roost trees or hibernacula in the project area, we encourage you to conduct tree-cutting activities and prescribed burns in forested areas during October 1 through March 31 when possible, but you are not required by the ESA to do so. When that is not possible, we encourage you to remove trees prior to June 1 or after July 31, as that will help to protect young bats that may be in forested areas, but are not yet able to fly.

**Rufa Red Knot and Pitcher's Thistle**

No suitable habitat apparent within the project footprint or within our 1.5 mile search buffer.

USFWS Section 7 Consultation Technical Assistance can be found at:
http://www.fws.gov/midwest/endangered/section7/sppranges/michigan-cty.html
The website offers step-by-step instructions to guide you through the Section 7 consultation process with prepared templates for documenting "no effect." as well as requesting concurrence on "may affect, but not likely to adversely affect" determinations.

Please let us know if you have questions.

Mike Sanders
Environmental Review Specialist/Extension
Sander75@msu.edu
517-284-6215

Midwest Endangered Species Home

What We Do

Featured Species

Species Information

State and County Lists

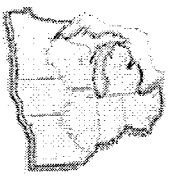
Species Lists

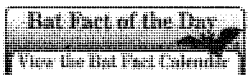
Fact Sheets and Brochures

Field Office Contacts

Regional Office Contacts

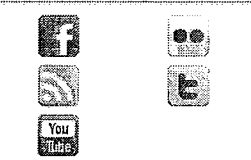
Contact Us






**Daily Bat Fact - Feb. 5**
Mammals give birth to live young (except for a few, like the duck-billed platypus) and produce milk to feed their young. Usually only females produce milk, but the male Dayak fruit bat bit.ly/1SMIM7l found in Malaysia and Borneo, is an exception.

Connect With Us





# Northern Long-eared Bat

## Key to the Northern Long-Eared Bat 4(d) Rule for Federal Actions that May Affect Northern Long-Eared Bats

*PDF Version*

***A separate key is available for non-Federal Activities***

Federal agency actions that involve incidental take not prohibited under the final 4(d) rule may result in effects to individual northern long-eared bats. Per section 7 of the Act, if a federal agency's action may affect a listed species, consultation with the Service is required. This requirement does not change when a 4(d) rule is implemented. However, for this 4(d) rule, the Service proposed a framework to streamline section 7 consultations when federal actions may affect the northern long-eared bat but will not cause prohibited take. Federal agencies have the option to rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities by using the framework. This key will help federal agencies determine if their actions may cause prohibited incidental take of northern long-eared bats as defined in the 4(d) rule under the Endangered Species Act and if separate section 7 consultation may be necessary. Also, the framework for streamlining northern long-eared bat section 7 consultation is provided.

1. Is the action area (i.e., the area affected by all direct and indirect project effects) located wholly **outside the White-nose Syndrome Zone?** For the most current version of the White-nose Syndrome Zone map, please see www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf

   **Yes, the action area is located wholly outside the white-nose syndrome zone.**
   Incidental take (see Definitions below) of northern long-eared bats is not prohibited in areas outside the White-nose Syndrome Zone. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

   **No, the action area is located partially or wholly inside the white-nose syndrome zone.**
   Continue to #2

2. Will the action take place **within a cave or mine where northern long-eared bats hibernate** (i.e., hibernaculum) **or could it alter the entrance or the environment (physical or other alteration)** of a hibernaculum?

   **Yes, the action will take place within a northern long-eared bat hibernaculum or it could alter the entrance or the environment (physical or other alteration) of a hibernaculum.**
   Take (see Definitions below) of northern long-eared bats within hibernacula is prohibited, including actions that may change the nature of the hibernaculum's environment or entrance to it, even when the bats are not present. If your activity includes work in a hibernaculum or it could alter its entrance or environment, please contact the Service's Ecological Services Field Office located nearest to the project area. To find contact information for the Ecological Services Field Offices, please see www.fws.gov/offices.

   **No, the action will not take place within a northern long-eared bat hibernaculum or alter its entrance or environment.**
   Continue to #3

3. Will the action involve **tree removal** (see definition below)?

   **No, the action does not include tree removal.**
   Incidental take (see Definitions below) from activities that do not involve tree removal and do not take place within hibernacula or would not alter the hibernaculum's entrance or environment (see Question #3), is not prohibited. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

**Yes** - continue to #4

4. Is the action the **removal of hazardous trees** for protection of human life or property?

**Yes, the action is removing hazardous trees.**
Incidental take (see Definitions below) of northern long-eared bats as a result of hazardous tree removal is not prohibited. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

**No, the action is not removing hazardous trees.**
Continue to #5

5. Will the action include one or both of the following: **1) removing a northern long-eared bat known occupied maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31; or 2) removing any trees within 0.25 miles of a northern long-eared bat hibernaculum at any time of year?**

**No**
Incidental take (see Definitions below) from tree removal activities is not prohibited unless it results from removing a known occupied maternity roost tree or from tree removal activities within 150 feet of a known occupied maternity roost tree from June 1 through July 31 or results from tree removal activities within 0.25 mile of a hibernaculum at any time. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities if they use the framework described below. This framework is optional, if the federal agency chooses not to follow the framework, standard section 7 consultation procedures apply.

**Yes**
Incidental take (see Definitions below) of northern long-eared bats is prohibited if it occurs as a result of removing a known occupied maternity roost tree or removing trees within 150 feet of a known occupied maternity roost tree during the pup season from June 1 through July 31 or as a result of removing trees from within 0.25 mile of a hibernaculum at any time of year. This does not mean that you cannot conduct your action; however, standard section 7 consultation procedures apply. Please contact your nearest Ecological Services Field Office. To find contact information for the Ecological Services Field Offices, please see www.fws.gov/offices

**How do I know if there is a maternity roost tree or hibernacula in the action area?**
We acknowledge that it can be difficult to determine if a maternity roost tree or a hibernaculum is in your project area. Location information for both resources is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

When looking for information on the presence of maternity roost trees or hibernacula within your project area, our expectation is that the federal action agency will complete due diligence to determine if date is available. If information is not available, document your attempt to find the information and send it with your determination under step 1 of the framework (see below).

We do not require federal agencies to conduct surveys; however, we recommend that surveys be conducted whenever possible. Surveys will help federal agencies meet their responsibilities under section 7(a)(1) of the Act. Active participation of federal agencies in survey efforts will lead to a more effective conservation strategy for the northern long-eared bat. In addition, should the Service reclassify the species as endangered in the future, an agency with a good understanding of how the species uses habitat based on surveys within its action areas could have greater flexibility under section 7(a)(2) of the Act. Recommended survey methods are available at www.fws.gov/midwest/endangered/mammals/nleb.

## Optional Framework to Streamline Section 7 Consultation for the Northern Long-Eared Bat:

The primary objective of the framework is to provide an efficient means for U.S. Fish and Wildlife Service verification of federal agency determinations that their proposed actions are consistent with those evaluated in the programmatic intra-Service consultation for the final 4(d) rule and do not require separate consultation. Such verification is necessary because incidental take is prohibited in the vicinity of known hibernacula and known roosts, and these locations are continuously updated. Federal agencies may rely on this Biological Opinion to fulfill their project-specific section 7(a)(2) responsibilities under the following framework:

**1. For all federal activities that may affect the northern long-eared bat, the action agency will provide project-level documentation describing the activities that are excepted from incidental take prohibitions and addressed in this consultation. The federal agency must provide written documentation to the appropriate Service Field Office when it is determined their action may affect (i.e., not likely to adversely affect or likely to adversely affect) the northern long-eared bat, but would not cause prohibited incidental take. This documentation must follow these procedures:**

a. In coordination with the appropriate Service Field Office, each action agency must make a determination as to whether their activity is excepted from incidental taking prohibitions in the final 4(d) rule. Activities that will occur within 0.25 mile of a known hibernacula or within 150 feet of known, occupied maternity roost trees during the pup season (June 1 to July 31) are not excepted pursuant to the final 4(d) rule. This determination must be updated annually for multi-year activities.

b. At least 30 days in advance of funding, authorizing, or carrying out an action, the federal agency must provide written notification of their determination to the appropriate Service Field Office.

c. For this determination, the action agency will rely on the definitions of prohibited activities provided in the final 4(d) rule and the activities considered in this consultation.

d. The determination must include a description of the proposed project and the action area (the area affected by all direct and indirect project effects) with sufficient detail to support the determination.

e. The action agency must provide its determination as part of a request for coordination or consultation for other listed species or separately if no other species may be affected.

f. Service concurrence with the action agency determination is not required, but the Service may advise the action agency whether additional information indicates consultation for the northern long-eared bat is required; i.e., where the proposed project includes an activity not covered by the 4(d) rule and thus not addressed in the Biological Opinion and is subject to additional consultation.

g. If the Service does not respond within 30 days under (f) above, the action agency may presume its determination is informed by best available information and consider its project responsibilities under section 7(a)(2) with respect to the northern long-eared bat fulfilled through this programmatic Biological Opinion.

**2. Reporting**

a. For monitoring purposes, the Service will assume all activities are conducted as described. If an agency does not conduct an activity as described, it must promptly report and describe such departures to the appropriate Service Field Office.

b. The action agency must provide the results of any surveys for the northern long-eared bat to the appropriate Service Field Office within their jurisdiction.

c. Parties finding a dead, injured, or sick northern long-eared bat must promptly notify the appropriate Service Field Office.

If a Federal action agency chooses not to follow this framework, standard section 7 consultation procedures will apply.

Section 7(a)(1) of the Act directs Federal agencies, in consultation with and with the assistance of the Secretary (a function delegated to the Service), to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Service Headquarters provides to federal action agencies who choose to implement the framework described above several conservation recommendations for exercising their 7(a)(1) responsibility in this context. Conservation recommendations are discretionary federal agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. Service Headquarters recommends that the following conservation measures to all Federal agencies whose actions may affect the northern long-eared bat:

1. Perform northern long-eared bat surveys according to the most recent Range-wide Indiana Bat/ northern long-eared bat Summer Survey Guidelines. Benefits from agencies voluntarily performing northern long-eared bat surveys include:

a. Surveys will help federal agencies meet their responsibilities under section 7(a)(1) of the Act. The Service and partners will use the survey data to better understand habitat use and distribution of northern long-eared bats, track the status of the species, evaluate threats and impacts, and develop effective conservation and recovery actions. Active participation of federal agencies in survey efforts will lead to a more effective conservation strategy for the northern long-eared bat.

b. Should the Service reclassify the species as endangered in the future, an agency with a good understanding of how the species uses habitat based on surveys within its action areas could inform greater flexibility under section 7(a)(2) of the Act. Such information could facilitate an expedited consultation and incidental take statement that may, for example, exempt taking associated with tree removal during the active season, but outside of the pup season, in known occupied habitat.

2. Apply additional voluntary conservation measures, where appropriate, to reduce the impacts of activities on northern long-eared bats. Conservation measures include:

a. Conduct tree removal activities outside of the northern long-eared bat pup season (June 1 to July 31) and/or the active season (April 1 to October 31). This



ed.

b. Avoid clearing of [illegible] staging and fall swarming habitat within a 5-mile radius of known or assumed northern long-eared bat hibernacula during the staging and swarming seasons (April 1 to May 15 and August 15 to November 14, respectively).

c. Manage forests to ensure a continual supply of snags and other suitable maternity roost trees.

d. Conduct prescribed burns outside of the pup season (June 1 to July 31) and/or the active season (April 1 to October 31). Avoid high-intensity burns (causing tree scorch higher than northern long-eared bat roosting heights) during the summer maternity season to minimize direct impacts to northern long-eared bat.

e. Perform any bridge repair, retrofit, maintenance, and/or rehabilitation work outside of the northern long-eared bat active season (April 1 to October 31) in areas where northern long-eared bats are known to roost on bridges or where such use is likely.

f. Do not use military smoke and obscurants within forested suitable northern long-eared bat habitat during the pup season (June 1 to July 31) and/or the active season (April 1 to October 31).

g. Minimize use of herbicides and pesticides. If necessary, spot treatment is preferred over aerial application.

h. Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution by angling lights downward or via other light minimization measures.

i. Participate in actions to manage and reduce the impacts of white-nose syndrome on northern long-eared bat. Actions needed to investigate and manage white-nose syndrome are described in a national plan the Service developed in coordination with other state and federal.

## Definitions

**"Incidental take"** is defined by the Endangered Species Act as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill bats.

**"Known hibernacula"** are defined as locations where one or more northern long-eared bats have been detected during hibernation or at the entrance during fall swarming or spring emergence. Given the challenges of surveying for northern long-eared bats in the winter, any hibernacula with northern long-eared bats observed at least once, will continue to be considered "known hibernacula" as long as the hibernacula remains suitable for northern long-eared bat.

**"Known occupied maternity roost trees"** is defined in the 4(d) rule as trees that have had female northern long-eared bats or juvenile bats tracked to them or the presence of female or juvenile bats is known as a result of other methods. Once documented, northern-long eared bats are known to continue to use the same roosting areas. Therefore, a tree will be considered to be a "known occupied maternity roost" as long as the tree and surrounding habitat remain suitable for northern long-eared bat. The incidental take prohibition for known occupied maternity roosts trees applies only during the during the pup season (June 1 through July 31).

**"Take"** is defined by the ESA as 'to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any endangered species. Purposeful take is when the reason for the activity or action is to conduct some form of take. For instance, conducting a research project that includes collecting and putting bands on bats is a form of purposeful take.

**"Tree removal"** is defined in the 4(d) rule as cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bats.

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Northern Long-eared Bat Home
Midwest Endangered Species Home

---

Last updated: January 12, 2016

**ATTACHMENT 3-III**

CONTAMINATED SITE REVIEW

ENVIRONMENTAL RISK INFORMATION SERVICE

# DATABASE REPORT

| | |
|---|---|
| **Project Property:** | *1626628*<br>*15550 68Th Ave*<br>*Coopersville MI 49404* |
| **P.O. Number:** | *1626628* |
| **Report Type:** | *Database Report* |
| **Order #:** | *20160105075* |
| **Requested by:** | *Historical Information Gatherers* |
| **Date:** | *January 5, 2016* |

**Ecolog ERIS Ltd.**
Environmental Risk Information Service Ltd. (ERIS)
A division of Glacier Media Inc.
P: 1.866.517.5204
E: info@erisinfo.com

**www.erisinfo.com**

# Table of Contents

# Executive Summary

***Property Information:***

| | | |
|---|---|---|
| **Project Property:** | | *1626628*<br>*15550 68Th Ave  Coopersville MI 49404* |
| **P.O. Number:** | | *1626628* |
| **Coordinates:** | | |
| | **Latitude:** | *43.048786* |
| | **Longitude:** | *-85.939452* |
| | **UTM Northing:** | *4,766,778.10* |
| | **UTM Easting:** | *586,375.45* |
| | **UTM Zone:** | *UTM Zone 16T* |
| **Elevation:** | | *652 FT* |

***Order Information:***

| | |
|---|---|
| **Order No.:** | *20160105075* |
| **Date Requested:** | *07/01/2016* |
| **Requested by:** | *Historical Information Gatherers* |
| **Report Type:** | *Database Report* |

***Ancillary Products:***

# Executive Summary: Report Summary

| Database | Searched | Search Radius | Project Property | Within 0.12mi | 0.12mi to 0.25mi | 0.25mi to 0.50mi | 0.50mi to 1.00mi | Total |
|---|---|---|---|---|---|---|---|---|
| **Standard Environmental Records** | | | | | | | | |
| **Federal** | | | | | | | | |
| NPL | Y | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 |
| PROPOSED NPL | Y | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 |
| DELETED NPL | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| CERCLIS | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| CERCLIS NFRAP | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| CERCLIS LIENS | Y | PO | 0 | - | - | - | - | 0 |
| RCRA CORRACTS | Y | 1.00 | 0 | 0 | 0 | 0 | 1 | 1 |
| RCRA TSD | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| RCRA GEN | Y | 0.25 | 0 | 0 | 2 | - | - | 2 |
| RCRA NON GEN | Y | 0.25 | 1 | 0 | 2 | - | - | 3 |
| FED ENG | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| FED INST | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| ERNS 1982 TO 1986 | Y | PO | 0 | - | - | - | - | 0 |
| ERNS 1987 TO 1989 | Y | PO | 0 | - | - | - | - | 0 |
| ERNS | Y | PO | 0 | - | - | - | - | 0 |
| FED BROWNFIELDS | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| MLTS | Y | PO | 0 | - | - | - | - | 0 |
| **State** | | | | | | | | |
| SHWS | Y | 1.00 | 0 | 0 | 0 | 0 | 4 | 4 |
| DELISTED SHWS | Y | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 |
| SITE CLEANUP | Y | 0.25 | 0 | 0 | 0 | - | - | 0 |
| SWF/LF | Y | 0.50 | 1 | 0 | 0 | 0 | - | 1 |
| LUST | Y | 0.50 | 1 | 0 | 0 | 0 | - | 1 |
| UST | Y | 0.25 | 1 | 0 | 0 | - | - | 1 |
| AST | Y | 0.25 | 1 | 0 | 0 | - | - | 1 |
| DELISTED LST | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| DELISTED TANK | Y | 0.25 | 0 | 0 | 0 | - | - | 0 |
| AUL | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |

| Database | Searched | Search Radius | Project Property | Within 0.12mi | 0.12mi to 0.25mi | 0.25mi to 0.50mi | 0.50mi to 1.00mi | Total |
|---|---|---|---|---|---|---|---|---|
| BROWNFIELDS | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| **Tribal** | | | | | | | | |
| INDIAN LUST | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| INDIAN UST | Y | 0.25 | 0 | 0 | 0 | - | - | 0 |
| **County** | ***No County standard environmental record sources available for this State.*** | | | | | | | |
| **Additional Environmental Records** | | | | | | | | |
| **Federal** | | | | | | | | |
| FINDS/FRS | Y | PO | 1 | - | - | - | - | 1 |
| TRIS | Y | PO | 0 | - | - | - | - | 0 |
| HMIRS | Y | 0.12 | 0 | 0 | - | - | - | 0 |
| NCDL | Y | PO | 0 | - | - | - | - | 0 |
| ODI | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| IODI | Y | 0.50 | 0 | 0 | 0 | 0 | - | 0 |
| TSCA | Y | 0.12 | 0 | 0 | - | - | - | 0 |
| HIST TSCA | Y | 0.12 | 0 | 0 | - | - | - | 0 |
| FTTS ADMIN | Y | PO | 0 | - | - | - | - | 0 |
| FTTS INSP | Y | PO | 0 | - | - | - | - | 0 |
| **State** | | | | | | | | |
| SPILLS | Y | 0.12 | 0 | 0 | - | - | - | 0 |
| BEA | Y | 0.25 | 0 | 0 | 0 | - | - | 0 |
| **Tribal** | ***No Tribal additional environmental record sources available for this State.*** | | | | | | | |
| **County** | ***No County additional environmental record sources available for this State.*** | | | | | | | |
| | ***Total:*** | | 6 | 0 | 4 | 0 | 5 | 15 |

**** PO – Property Only***
**** 'Property and adjoining properties' database search radii are set at 0.25 miles.***

# Executive Summary: Site Report Summary - Project Property

| Map Key | DB | Company/Site Name | Address | Dir/Dist mi | Elev diff ft | Page Number |
|---|---|---|---|---|---|---|
| 1 | AST | Ottawa County Farms | 15550 68th Ave<br>Coopersville MI 49404-9705 | -/0.00 | -12 | 15 |
| 1 | FINDS/FRS | OTTAWA COUNTY FARMS LANDFILL | ***Facility ID:*** *91070167*<br>***Tank ID / Tank Status:*** *1 / Currently In Use*<br>15550 68TH AVE.<br>COOPERSVILLE MI 49404-9705 | -/0.00 | -12 | 15 |
| 1 | LUST | Laidlaw Waste Systems Inc | 15550 68th Ave<br>Coopersville MI 49404-9705 | -/0.00 | -12 | 16 |
| 1 | RCRA NON GEN | OTTAWA COUNTY LANDFILL INC | ***Facility ID / Site Status:*** *00037433 / CLOSED LUST*<br>***Leak NO / Release Status:*** *C-0414-94 / Closed*<br>15550 68TH AVE<br>COOPERSVILLE MI 49404 | -/0.00 | -12 | 16 |
| 1 | SWF/LF | OTTAWA COUNTY FARMS LANDFILL | 15550 68TH AVE<br>COOPERSVILLE MI | -/0.00 | -12 | 18 |
| 1 | UST | Laidlaw Waste Systems Inc | 15550 68th Ave<br>Coopersville MI 49404-9705 | -/0.00 | -12 | 19 |
| | | | ***Facility ID:*** *00037433*<br>***Tank ID / Tank Status:*** *1 / Removed from Ground* | | | |

# Executive Summary: Site Report Summary - Surrounding Properties

| Map Key | DB | Company/Site Name | Address | Dir/Dist mi | Elev Diff ft | Page Number |
|---|---|---|---|---|---|---|
| 2 | RCRA NON GEN | BEST C C MFG INC | 346 RIVER ST COOPERSVILLE MI 49404 | NNE/0.13 | -6 | 19 |
| 3 | RCRA GEN | HAZZO LLC | 654 OMALLEY DR COOPERSVILLE MI 49404 | NNW/0.13 | -4 | 20 |
| 4 | RCRA GEN | SATURN ELECTRONICS & ENGINEERING INC | 323 SKEELS ST COOPERSVILLE MI 49404 | NNE/0.21 | -6 | 23 |
| 5 | RCRA NON GEN | RIVER STREET PARTNERS | 350 SKEELS ST COOPERSVILLE MI 49404 | NNE/0.21 | -5 | 25 |
| 6 | SHWS | Heath Manufacturing, Inc. | 140 Mill Street Coopersville MI 49404 | NNE/0.72 | -17 | 26 |
| 7 | RCRA CORRACTS | CONTINENTAL DAIRY FACILITIES LLC | 999 W RANDALL ST SUITE A COOPERSVILLE MI 49404 | NW/0.71 | 15 | 26 |
| 7 | SHWS | 999 West Randall Street | 999 West Randall Street Coopersville MI 49404 | NW/0.71 | 15 | 34 |
| 8 | SHWS | Coopersville & Marne Railway Co. | Danforth & Eastmanville Coopersville MI 49404 | N/0.75 | -13 | 34 |
| 9 | SHWS | Center Street, 270 & Main Street, 365 | 270 Center Street and 365 Main Street Coopersville MI 49404 | N/0.87 | -19 | 35 |

# Executive Summary: Summary by Data Source

## *Standard*

### Federal

**RCRA CORRACTS - RCRA CORRACTS- Corrective Action**

A search of the RCRA CORRACTS database, dated Oct 13, 2015 has found that there are 1 RCRA CORRACTS site(s) within approximately 1.00 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| CONTINENTAL DAIRY FACILITIES LLC | 999 W RANDALL ST SUITE A COOPERSVILLE MI 49404 | NW | 0.71 | 7 |

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|

**RCRA GEN - RCRA Generator List**

A search of the RCRA GEN database, dated Oct 13, 2015 has found that there are 2 RCRA GEN site(s) within approximately 0.25 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| HAZZO LLC | 654 OMALLEY DR COOPERSVILLE MI 49404 | NNW | 0.13 | 3 |
| SATURN ELECTRONICS & ENGINEERING INC | 323 SKEELS ST COOPERSVILLE MI 49404 | NNE | 0.21 | 4 |

**RCRA NON GEN - RCRA Non-Generators**

A search of the RCRA NON GEN database, dated Oct 13, 2015 has found that there are 3 RCRA NON GEN site(s) within approximately 0.25 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| OTTAWA COUNTY LANDFILL INC | 15550 68TH AVE<br>COOPERSVILLE MI 49404 | - | 0.00 | 1 |
| BEST C C MFG INC | 346 RIVER ST<br>COOPERSVILLE MI 49404 | NNE | 0.13 | 2 |
| RIVER STREET PARTNERS | 350 SKEELS ST<br>COOPERSVILLE MI 49404 | NNE | 0.21 | 5 |

## State

### SHWS - Part 201 Site List

A search of the SHWS database, dated May 8, 2015 has found that there are 4 SHWS site(s) within approximately 1.00 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| 999 West Randall Street | 999 West Randall Street<br>Coopersville MI 49404 | NW | 0.71 | 7 |

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| Heath Manufacturing, Inc. | 140 Mill Street<br>Coopersville MI 49404 | NNE | 0.72 | 6 |
| Coopersville & Marne Railway Co. | Danforth & Eastmanville<br>Coopersville MI 49404 | N | 0.75 | 8 |
| Center Street, 270 & Main Street, 365 | 270 Center Street and 365 Main Street<br>Coopersville MI 49404 | N | 0.87 | 9 |

### SWF/LF - Solid Waste Facilities and Landfills

A search of the SWF/LF database, dated Jun 25, 2015 has found that there are 1 SWF/LF site(s) within approximately 0.50 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| OTTAWA COUNTY FARMS LANDFILL | 15550 68TH AVE<br>COOPERSVILLE MI | - | 0.00 | 1 |

**LUST - Leaking Underground Storage Tank**

A search of the LUST database, dated Jun 25, 2015 has found that there are 1 LUST site(s) within approximately 0.50 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| Laidlaw Waste Systems Inc | 15550 68th Ave<br>Coopersville MI 49404-9705 | - | 0.00 | 1 |

***Facility ID / Site Status**: 00037433 / CLOSED LUST*
***Leak NO / Release Status**: C-0414-94 / Closed*

**UST - Underground Storage Tank**

A search of the UST database, dated Jun 25, 2015 has found that there are 1 UST site(s) within approximately 0.25 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| Laidlaw Waste Systems Inc | 15550 68th Ave<br>Coopersville MI 49404-9705 | - | 0.00 | 1 |

***Facility ID**: 00037433*
***Tank ID / Tank Status**: 1 / Removed from Ground*

**AST - Aboveground Storage Tanks**

A search of the AST database, dated Jun 26, 2015 has found that there are 1 AST site(s) within approximately 0.25 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| Ottawa County Farms | 15550 68th Ave<br>Coopersville MI 49404-9705 | - | 0.00 | 1 |

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| | ***Facility ID**: 91070167*<br>***Tank ID / Tank Status**: 1 / Currently In Use* | | | |

## *Non Standard*

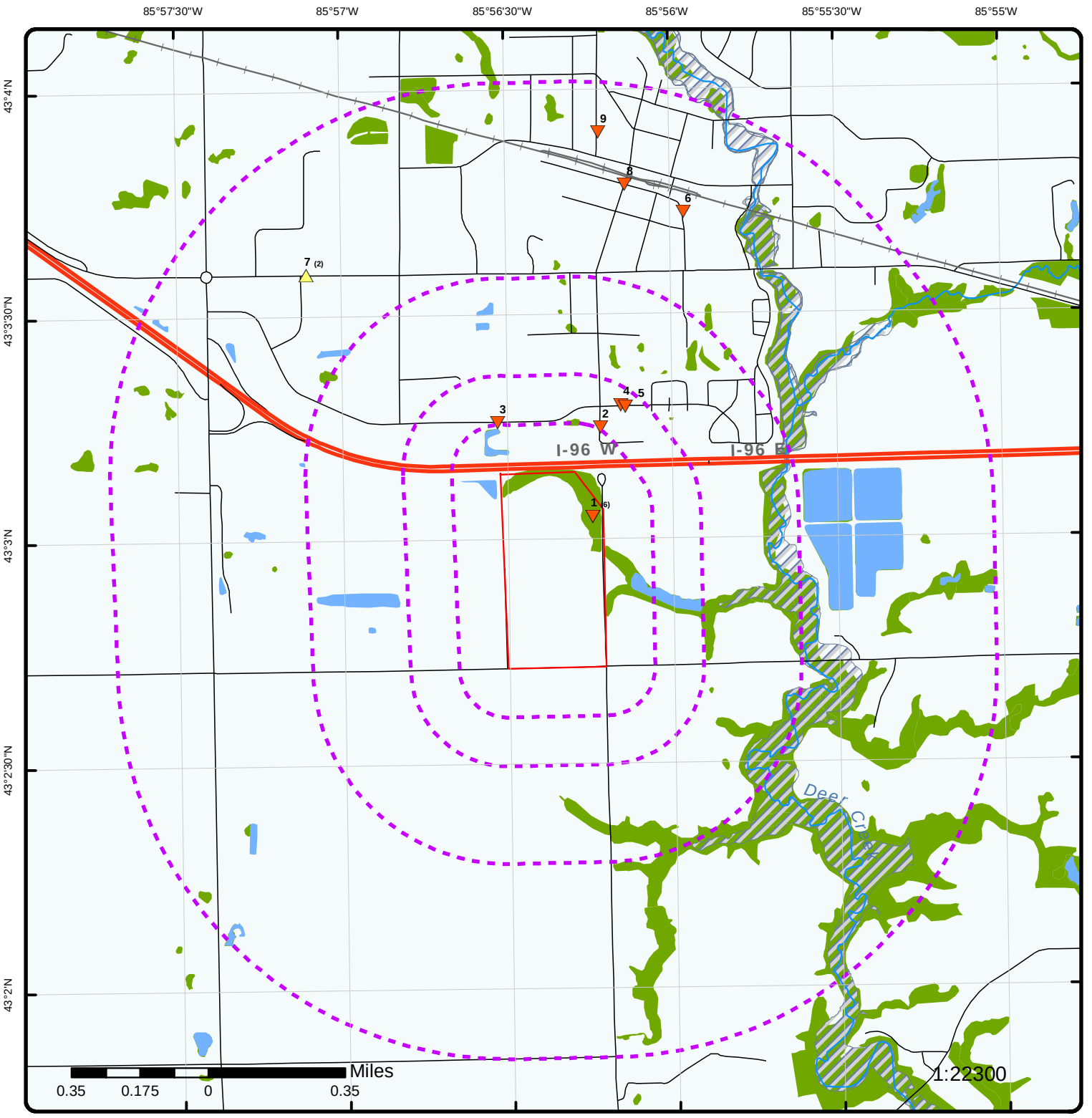
### Federal

**FINDS/FRS - Facility Registry Service/Facility Index**

A search of the FINDS/FRS database, dated Sep 24, 2015 has found that there are 1 FINDS/FRS site(s) within approximately 0.02 miles of the project property.

| Equal/Higher Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|

| Lower Elevation | Address | Direction | Distance mi | Map Key |
|---|---|---|---|---|
| OTTAWA COUNTY FARMS LANDFILL | 15550 68TH AVE.<br>COOPERSVILLE MI 49404-9705 | - | 0.00 | 1 |



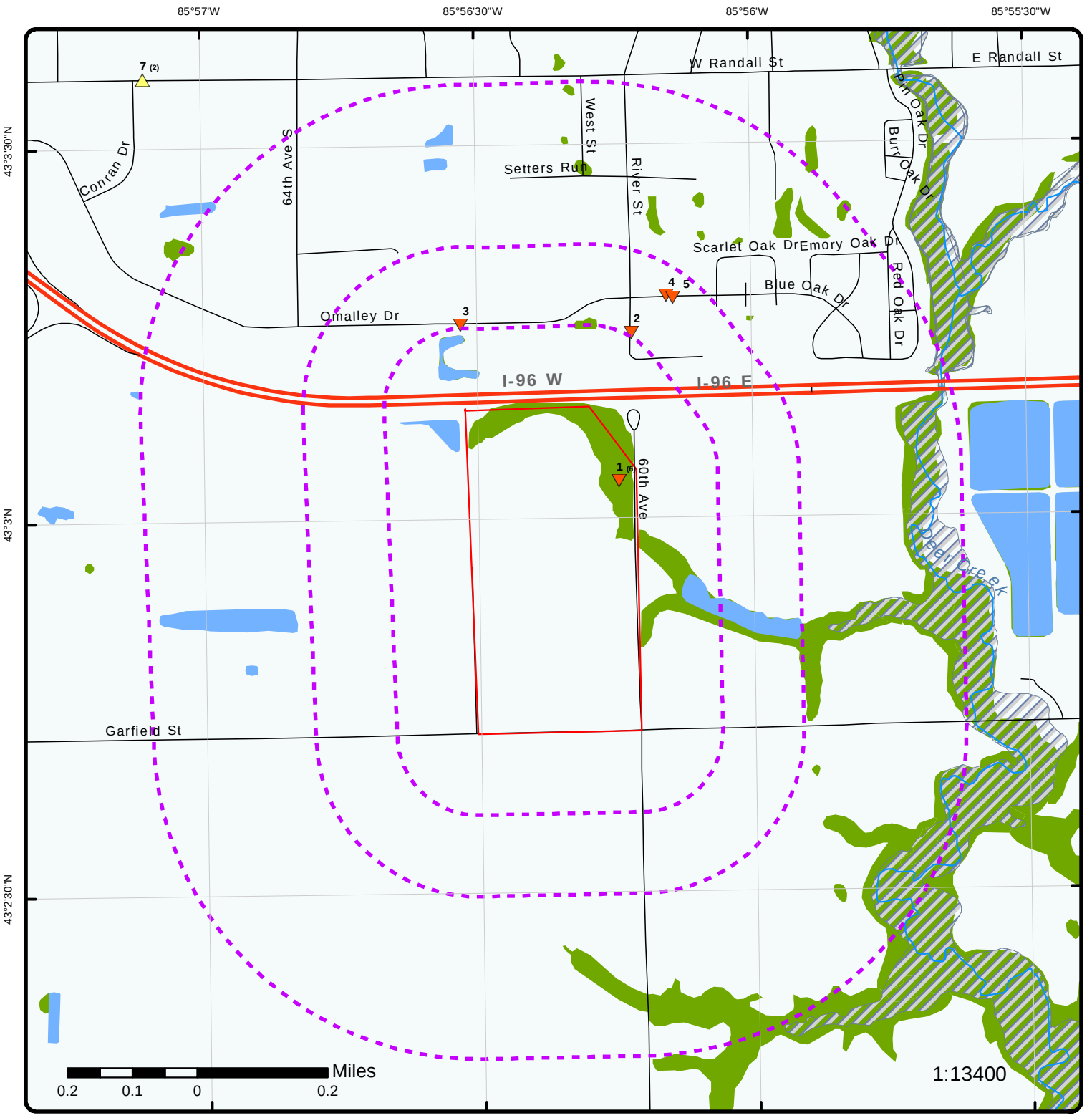

# Map : 1 Mile Radius

Order No: 20160105075

Address: 15550 68Th Ave, Coopersville, MI, 49404

ENVIRONMENTAL RISK INFORMATION SERVICE

| | | | |
|---|---|---|---|
| Project Property | Major Highways | County Boundary | Indian Reserve Land |
| **Buffer Outline** | Major Highways Ramps | State Boundary | Historic Fill |
| Eris Sites with Higher Elevation | Major Roads | 500 Year Flood Zone | State Brownfield Sites |
| Eris Sites with Same Elevation | Major Roads Ramps | 100 Year Flood Zone | State Brownfield Areas |
| Eris Sites with Lower Elevation | Secondary Roads | National Priority List Sites | State Superfund Areas:Dept. of Defense |
| Eris Sites with Unknown Elevation | Secondary Roads Ramps | National Wetland | State Superfund Areas:NPL |
| Rails | Local Roads and Ramps | FWS Special Designation Areas | WQARF Areas |



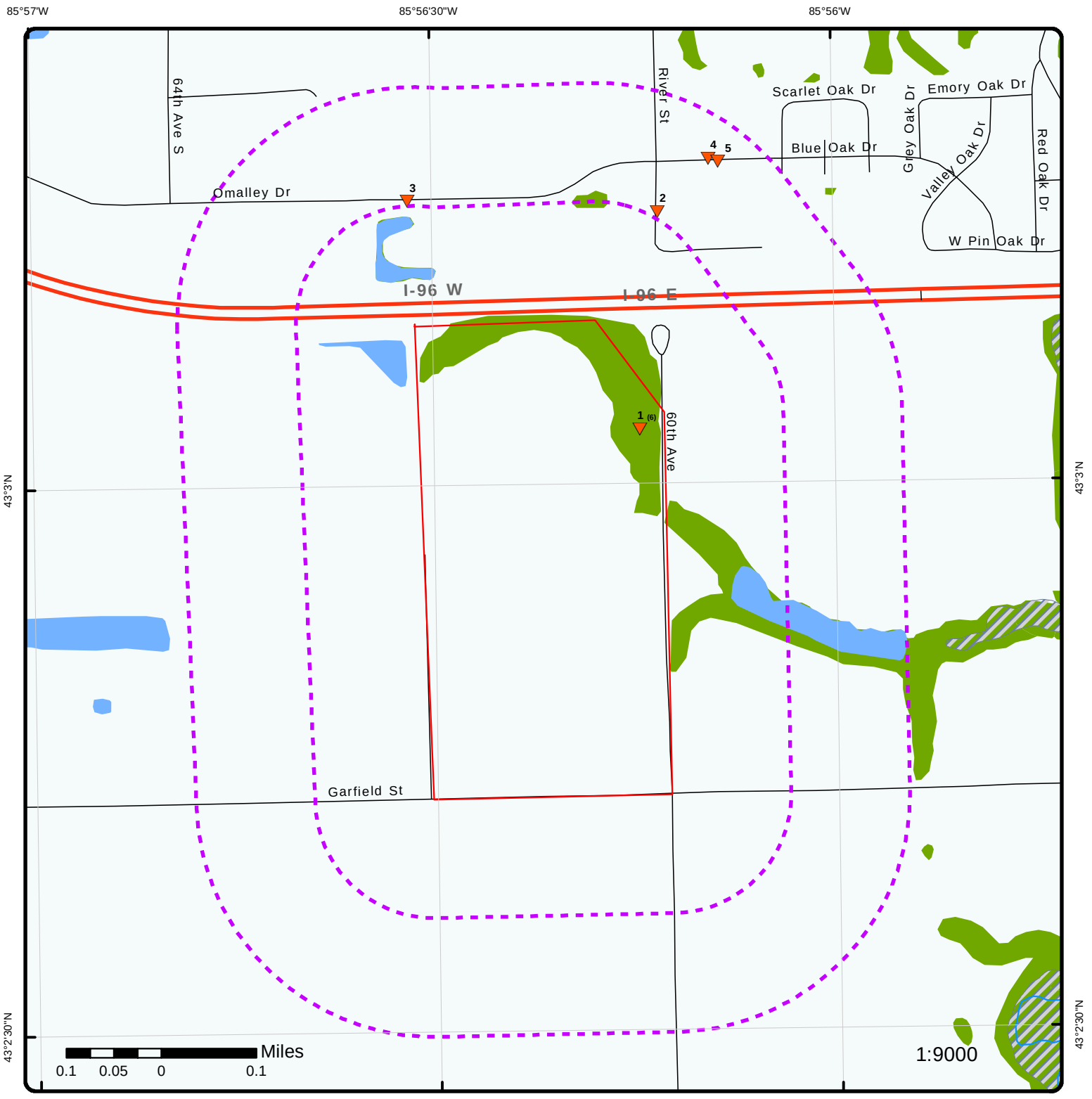

# Map : 0.5 Mile Radius

Order No: 20160105075

Address: 15550 68Th Ave, Coopersville, MI, 49404

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

| | | | |
|---|---|---|---|
| Project Property | Major Highways | County Boundary | Indian Reserve Land |
| **Buffer Outline** | Major Highways Ramps | State Boundary | Historic Fill |
| Eris Sites with Higher Elevation | Major Roads | 500 Year Flood Zone | State Brownfield Sites |
| Eris Sites with Same Elevation | Major Roads Ramps | 100 Year Flood Zone | State Brownfield Areas |
| Eris Sites with Lower Elevation | Secondary Roads | National Priority List Sites | State Superfund Areas:Dept. of Defense |
| Eris Sites with Unknown Elevation | Secondary Roads Ramps | National Wetland | State Superfund Areas:NPL |
| Rails | Local Roads and Ramps | FWS Special Designation Areas | WQARF Areas |




# Map : 0.25 Mile Radius

Order No: 20160105075

Address: 15550 68Th Ave, Coopersville, MI, 49404

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

| | | | |
|---|---|---|---|
| Project Property | Major Highways | County Boundary | Indian Reserve Land |
| **Buffer Outline** | Major Highways Ramps | State Boundary | Historic Fill |
| Eris Sites with Higher Elevation | Major Roads | 500 Year Flood Zone | State Brownfield Sites |
| Eris Sites with Same Elevation | Major Roads Ramps | 100 Year Flood Zone | State Brownfield Areas |
| Eris Sites with Lower Elevation | Secondary Roads | National Priority List Sites | State Superfund Areas:Dept. of Defense |
| Eris Sites with Unknown Elevation | Secondary Roads Ramps | National Wetland | State Superfund Areas:NPL |
| Rails | Local Roads and Ramps | FWS Special Designation Areas | WQARF Areas |


# Aerial

Order No: 20160105075

**Address: 15550 68Th Ave, Coopersville, MI, 49404**

**Source:** ESRI World Imagery, Updated October 2014

# Detail Report

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| 1 | 1 of 6 | -/0.00 | 640.06 | Ottawa County Farms<br>15550 68th Ave<br>Coopersville MI 49404-9705 | AST |

| | | | |
|---|---|---|---|
| **Facility ID:** | 91070167 | **Contact P Name:** | ROB CARR |
| **Facility Status:** | Active | **County Name:** | Ottawa |
| **Contact Phone:** | (616) 837-8195 | **Latitude:** | 42.9728130000 |
| **District Name:** | Region 3 - Grand Rapids District Office | **Longitude:** | -85.9538230000 |
| **Owner Name:** | Allied Waste Ind | **Dt of Collection:** | 27-06-2001 |
| **Owner Adress:** | 15550 68th Ave | **Accuracy:** | 10 |
| **Owner City:** | Coopersville | **Accu Value Unit:** | METERS |
| **Owner State:** | MI | **Source:** | STATE OF MICHIGAN |
| **Owner Zip 5:** | 49404-9705 | **Horizontal Datum:** | NAD83 |
| **Owner Country:** | USA | **Mthd of Collection:** | GPS Code Meas. Standard Positioning Service SA Off |
| **Owner Contact P:** | | **Desc Category:** | Plant Entrance (Freight) |
| **Owner Phone:** | (616) 837-8195 | **Point Line Area:** | POINT |

**--- Details ---**

| | | | |
|---|---|---|---|
| **Tank ID:** | 1 | **Substance Stored:** | DIESEL |
| **Tank Status:** | Currently In Use | **Tank Closed Dt:** | |
| **Capacity:** | 10000 | **Installation Dt:** | Aug 10 1995 |

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| 1 | 2 of 6 | -/0.00 | 640.06 | OTTAWA COUNTY FARMS LANDFILL<br>15550 68TH AVE.<br>COOPERSVILLE MI 49404-9705 | FINDS/FRS |

| | |
|---|---|
| **Registry ID:** | 110041099076 |
| **FIPS Code:** | 26139 |
| **Program Acronyms:** | |
| **HUC Code:** | 04050006 |
| **Site Type Name:** | STATIONARY |
| **EPA Region Code:** | 05 |
| **Conveyor:** | REGION |
| **County Name:** | OTTAWA |
| **Source:** | |
| **SIC Codes:** | 4953 |
| **SIC Code Descriptions:** | REFUSE SYSTEMS |
| **Federal Facility Code:** | |
| **NAICS Codes:** | 562212 |
| **NAICS Code Descriptions:** | SOLID WASTE LANDFILL. |
| **Federal Agency Name:** | |
| **US/Mexico Border Ind:** | |
| **Congressional Dist No:** | 02 |
| **Census Block Code:** | 261390232001045 |
| **Create Date:** | 25-MAY-2010 06:56:25 |
| **Update Date:** | 14-APR-2015 22:41:33 |
| **Location Description:** | |
| **Supplemental Location:** | |

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|

| | |
|---|---|
| **Tribal Land Code:** | |
| **Tribal Land Name:** | |
| **Latitude:** | 43.050628 |
| **Longitude:** | -85.956758 |
| **Coord Collection Method:** | THE GEOGRAPHIC COORDINATE DETERMINATION METHOD BASED ON ADDRESS MATCHING |
| **Accuracy Value:** | |
| **Datum:** | NAD83 |
| **Reference Point:** | |
| **Interest Types:** | AIR MAJOR, CRITERIA AIR POLLUTANT MAJOR, GREENHOUSE GAS REPORTER, LANDFILL GAS (LFG) RECOVERY, SOLID WASTE LANDFILL, UNSPECIFIED UNIVERSE |
| **Facility Detail Rprt URL:** | http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110041099076 |

---

1 **3 of 6** **-/0.00** **640.06** **Laidlaw Waste Systems Inc** **LUST**
**15550 68th Ave**
**Coopersville MI 49404-9705**

| | | | |
|---|---|---|---|
| **Facility ID:** | 00037433 | **GIS Collection:** | Address Matching-House Number |
| **Site Status:** | CLOSED LUST | **Facility County:** | Ottawa |
| **Active Tanks:** | 0 | **Facility District:** | Region 3 - Grand Rapids District Office |
| **Source:** | STATE OF MICHIGAN | **Owner Name:** | Laidlaw Waste Syst Inc |
| **Desc Category:** | Plant Entrance (Freight) | **Owner Address:** | 15550 68th Ave |
| **Latitude:** | 43.0524190000 | **Owner City:** | Coopersville |
| **Longitude:** | -85.9565540000 | **Owner State:** | MI |
| **Date of Collection:** | 01-11-2001 | **Owner Zip:** | 49404-9705 |
| **Accuracy:** | 100 | **Owner Country:** | USA |
| **Accuracy Unit:** | FEET | **Owner Contact:** | |
| **Horizontal Datum:** | NAD83 | **Owner Phone:** | (616) 837-8195 |
| **Point Line Area:** | POINT | | |

**--- Details ---**

| | | | |
|---|---|---|---|
| **Leak NO:** | C-0414-94 | **Substance Rlsd:** | Diesel,Unknown |
| **Release Status:** | Closed | **Rls Date:** | May 5 1994 |
| **Rls Closed Dt:** | Nov 14 1994 | **LUST Site Name:** | Laidlaw Waste Systems, Inc |
| **Evaluation:** | | **Land Use Restric:** | |

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1 **4 of 6** **-/0.00** **640.06** **OTTAWA COUNTY LANDFILL INC** **RCRA**
**15550 68TH AVE** **NON GEN**
**COOPERSVILLE MI 49404**

| | |
|---|---|
| **EPA Handler ID:** | MID985582097 |
| **Current Site Name:** | OTTAWA COUNTY LANDFILL INC |
| **Generator Status Universe:** | No Report |
| **Land Type:** | County |
| **Activity Location:** | MI |
| **TSD Activity:** | N |
| **Mixed Waste Generator:** | N |
| **Importer Activity:** | N |
| **Transporter Activity:** | N |
| **Transfer Facility:** | N |
| **Recycler Activity:** | N |
| **Onsite Burner Exemption:** | N |
| **Furnace Exemption:** | N |
| **Underground Inject Activity:** | N |
| **Rece Waste From Off Site:** | N |
| **Used Oil Transporter:** | |
| **Used Oil Transfer Facility:** | |

***Used Oil Processor:***
***Used Oil Refiner:***
***Used Oil Burner:***
***Used Oil Market Burner:***
***Used Oil Spec Marketer:***
***Mailing Address:*** 15550 68TH AVE, , COOPERSVILLE, MI, 49404, US
***Contact Name:*** ROBERT CARR
***Contact Address:*** 15550 68TH AVE, , COOPERSVILLE, MI, 49404, US
***Contact Email:***
***Location Street 2:***

***Owner/Operator Information***
***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** COUNTY OF OTTAWA
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** C
***Date Became Current:*** 20021108
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** COUNTY OF OTTAWA
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** C
***Date Became Current:*** 20021108
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** COUNTY OF OTTAWA
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** C
***Date Became Current:*** 20021108
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** COUNTY OF OTTAWA
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** C
***Date Became Current:*** 20021108
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** COUNTY OF OTTAWA
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** C
***Date Became Current:*** 20021108
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** COUNTY OF OTTAWA
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** C
***Date Became Current:*** 20021108
***Date Ended Current:***

| | |
|---|---|
| ***Owner/Operator Indicator:*** | CP |
| ***Owner/Operator Name:*** | COUNTY OF OTTAWA |
| ***Owner/Operator Address:*** | |
| ***Owner/Operator Phone:*** | |
| ***Owner/Operator Type:*** | C |
| ***Date Became Current:*** | 20021108 |
| ***Date Ended Current:*** | |

| | |
|---|---|
| ***Owner/Operator Indicator:*** | CO |
| ***Owner/Operator Name:*** | COUNTY OF OTTAWA |
| ***Owner/Operator Address:*** | |
| ***Owner/Operator Phone:*** | |
| ***Owner/Operator Type:*** | C |
| ***Date Became Current:*** | 20021108 |
| ***Date Ended Current:*** | |

***NAICS Information***

| | |
|---|---|
| ***Naics Code:*** | 562212 |
| ***Naics Description:*** | SOLID WASTE LANDFILL |

***Handler Information***

| | |
|---|---|
| ***Date Received:*** | 19801117 |
| ***Facility Name:*** | OTTAWA COUNTY LANDFILL INC |
| ***Date Received:*** | 19900629 |
| ***Facility Name:*** | OTTAWA COUNTY LANDFILL INC |
| ***Date Received:*** | 19801118 |
| ***Facility Name:*** | OTTAWA COUNTY LANDFILL INC |
| ***Date Received:*** | 20021018 |
| ***Facility Name:*** | OTTAWA COUNTY LANDFILL INC |

***Hazardous Waste Information***

| | |
|---|---|
| ***Waste Code:*** | D001 |
| ***Waste:*** | IGNITABLE WASTE |

***Violation/Evaluation Information***

| | |
|---|---|
| ***Evaluation Start Date:*** | 20020904 |
| ***Evaluation Agency:*** | S |
| ***Evaluation Type Description:*** | COMPLIANCE EVALUATION INSPECTION ON-SITE |
| ***Violation Short Description:*** | |
| ***Violation Determined Date:*** | |
| ***Actual Return to Compliance Date:*** | |
| ***Violation Responsible Agency:*** | |
| ***Enforcement Action Date:*** | |
| ***Enforcement Agency:*** | |
| ***Disposition Status Date:*** | |
| ***Disposition Status:*** | |
| ***Enforcement Type Description:*** | |
| ***Proposed Penalty Amount:*** | |
| ***Paid Amount:*** | |
| ***Final Amount:*** | |

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| 1 | ***5 of 6*** | ***-/0.00*** | ***640.06*** | ***OTTAWA COUNTY FARMS LANDFILL***<br>***15550 68TH AVE*** | ***SWF/LF*** |

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| | | | | ***COOPERSVILLE MI*** | |

***WDS ID:*** 403061
***Site ID:*** MID985582097
***Report Name:*** OTTAWA COUNTY LANDFILL INC
***County:*** OTTAWA
***Operator Contact:*** ROBERT CARR - (616) 837-8195
***Operating Company:***
***Mailing Address:***
***Contact:*** DEBBIE NURMI - (616) 837-7316

***--- Details ---***
***Disposal Area Type:*** Type II MSW Landfill
***Disposal Area Status:*** Active - Accepting

---

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| 1 | 6 of 6 | -/0.00 | 640.06 | ***Laidlaw Waste Systems Inc***<br>***15550 68th Ave***<br>***Coopersville MI 49404-9705*** | ***UST*** |

***Facility ID:*** 00037433
***Facility County:*** Ottawa
***Latitude:*** 43.0524190000
***Longitude:*** -85.9565540000
***Date of Collection:*** 01-11-2001
***Accuracy:*** 100
***Accuracy Unit:*** FEET
***Horizontal Datum:*** NAD83
***Source:*** STATE OF MICHIGAN
***Point Line Area:*** POINT
***Desc Catergory:*** Plant Entrance (Freight)
***GIS Colleciton:*** Address Matching-House Number

***Facility District:*** Region 3 - Grand Rapids District Office
***Faci Cont Person:*** ROBERT CARR
***Facility Phone:*** (616) 837-8195
***Owner Name:*** Laidlaw Waste Syst Inc
***Owner City:*** Coopersville
***Owner State:*** MI
***Owner Zip:*** 49404-9705
***Owner Country:*** USA
***Owner Contact:***
***Owner Phone:*** (616) 837-8195
***Owner Address:*** 15550 68th Ave

***--- Details ---***
***Tank ID:*** 1
***Tank Status:*** Removed from Ground
***Capacity(Gal):*** 10000
***Substance Stored:*** Diesel
***Removed Closed Dt:*** May 5 1994
***Installation Date:*** Sep 1 1982
***Tank Rls Detection:*** Inventory Control,Manual Tank Gauging,Tank Tightness Testing
***Piping Rls Detection:***
***Piping Material:*** Fiberglass reinforced plastic
***Piping Type:*** Pressure
***Construction Material:*** Fiberglass Reinforced plastic
***Impressed Device:*** No

---

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| 2 | 1 of 1 | NNE/0.13 | 645.56 | ***BEST C C MFG INC***<br>***346 RIVER ST***<br>***COOPERSVILLE MI 49404*** | ***RCRA NON GEN*** |

***EPA Handler ID:*** MIK146541495
***Current Site Name:*** BEST C C MFG INC
***Generator Status Universe:*** No Report
***Land Type:*** Private
***Activity Location:*** MI
***TSD Activity:*** N
***Mixed Waste Generator:*** N
***Importer Activity:*** N

| | |
|---|---|
| ***Transporter Activity:*** | N |
| ***Transfer Facility:*** | N |
| ***Recycler Activity:*** | N |
| ***Onsite Burner Exemption:*** | N |
| ***Furnace Exemption:*** | N |
| ***Underground Inject Activity:*** | N |
| ***Rece Waste From Off Site:*** | N |
| ***Used Oil Transporter:*** | |
| ***Used Oil Transfer Facility:*** | |
| ***Used Oil Processor:*** | |
| ***Used Oil Refiner:*** | |
| ***Used Oil Burner:*** | |
| ***Used Oil Market Burner:*** | |
| ***Used Oil Spec Marketer:*** | |
| ***Mailing Address:*** | 346 RIVER ST, , COOPERSVILLE, MI, 49404, US |
| ***Contact Name:*** | TIM OLEARY |
| ***Contact Address:*** | 346 RIVER ST, , COOPERSVILLE, MI, 49404, US |
| ***Contact Email:*** | |
| ***Location Street 2:*** | |

***Owner/Operator Information***

| | |
|---|---|
| ***Owner/Operator Indicator:*** | CP |
| ***Owner/Operator Name:*** | BEST C C MANUFACTURING |
| ***Owner/Operator Address:*** | |
| ***Owner/Operator Phone:*** | |
| ***Owner/Operator Type:*** | P |
| ***Date Became Current:*** | 20050615 |
| ***Date Ended Current:*** | |

| | |
|---|---|
| ***Owner/Operator Indicator:*** | CO |
| ***Owner/Operator Name:*** | BEST C C MANUFACTURING |
| ***Owner/Operator Address:*** | |
| ***Owner/Operator Phone:*** | |
| ***Owner/Operator Type:*** | P |
| ***Date Became Current:*** | 20050615 |
| ***Date Ended Current:*** | |

***NAICS Information***

| | |
|---|---|
| ***Naics Code:*** | 56291 |
| ***Naics Description:*** | REMEDIATION SERVICES |

***Handler Information***

| | |
|---|---|
| ***Date Received:*** | 20050615 |
| ***Facility Name:*** | BEST C C MFG INC |

***Hazardous Waste Information***

| | |
|---|---|
| ***Waste Code:*** | D001 |
| ***Waste:*** | IGNITABLE WASTE |

***Violation/Evaluation Information***

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| | | | | | |
|---|---|---|---|---|---|
| 3 | ***1 of 1*** | ***NNW/0.13*** | ***647.45*** | ***HAZZO LLC***<br>***654 OMALLEY DR***<br>***COOPERSVILLE MI 49404*** | ***RCRA GEN*** |

| | |
|---|---|
| ***EPA Handler ID:*** | MIK187177928 |
| ***Current Site Name:*** | HAZZO LLC |
| ***Generator Status Universe:*** | Conditionally Exempt Small Quantity Generator |
| ***Land Type:*** | Private |
| ***Activity Location:*** | MI |
| ***TSD Activity:*** | N |
| ***Mixed Waste Generator:*** | N |
| ***Importer Activity:*** | N |
| ***Transporter Activity:*** | N |
| ***Transfer Facility:*** | N |
| ***Recycler Activity:*** | N |
| ***Onsite Burner Exemption:*** | N |
| ***Furnace Exemption:*** | N |
| ***Underground Inject Activity:*** | N |
| ***Rece Waste From Off Site:*** | N |
| ***Used Oil Transporter:*** | |
| ***Used Oil Transfer Facility:*** | |
| ***Used Oil Processor:*** | |
| ***Used Oil Refiner:*** | |
| ***Used Oil Burner:*** | |
| ***Used Oil Market Burner:*** | |
| ***Used Oil Spec Marketer:*** | |
| ***Mailing Address:*** | 654 OMALLEY DR, , COOPERSVILLE, MI, 49404, US |
| ***Contact Name:*** | TIMOTHY HASELHUHN |
| ***Contact Address:*** | 654 OMALLEY DR, , COOPERSVILLE, MI, 49404, US |
| ***Contact Email:*** | |
| ***Location Street 2:*** | |

***Owner/Operator Information***

| | |
|---|---|
| ***Owner/Operator Indicator:*** | CP |
| ***Owner/Operator Name:*** | TIMOTHY H HASELHUHN |
| ***Owner/Operator Address:*** | |
| ***Owner/Operator Phone:*** | |
| ***Owner/Operator Type:*** | P |
| ***Date Became Current:*** | 20030806 |
| ***Date Ended Current:*** | |

| | |
|---|---|
| ***Owner/Operator Indicator:*** | CO |
| ***Owner/Operator Name:*** | JEFFREY J. DUPILKA |
| ***Owner/Operator Address:*** | |
| ***Owner/Operator Phone:*** | |
| ***Owner/Operator Type:*** | P |
| ***Date Became Current:*** | 20000412 |
| ***Date Ended Current:*** | |

| | |
|---|---|
| ***Owner/Operator Indicator:*** | CP |
| ***Owner/Operator Name:*** | TIMOTHY H HASELHUHN |
| ***Owner/Operator Address:*** | |
| ***Owner/Operator Phone:*** | |
| ***Owner/Operator Type:*** | P |
| ***Date Became Current:*** | 20030806 |
| ***Date Ended Current:*** | |

| | |
|---|---|
| ***Owner/Operator Indicator:*** | CO |
| ***Owner/Operator Name:*** | JEFFREY J. DUPILKA |
| ***Owner/Operator Address:*** | |
| ***Owner/Operator Phone:*** | |
| ***Owner/Operator Type:*** | P |
| ***Date Became Current:*** | 20000412 |

***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** TIMOTHY H HASELHUHN
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20030806
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** JEFFREY J. DUPILKA
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20000412
***Date Ended Current:***

***NAICS Information***

***Naics Code:*** 32199
***Naics Description:*** ALL OTHER WOOD PRODUCT MANUFACTURING

***Handler Information***

***Date Received:*** 20011204
***Facility Name:*** HAZZO LLC
***Classification:*** Conditionally Exempt Small Quantity

***Date Received:*** 20020927
***Facility Name:*** HAZZO LLC
***Classification:*** Conditionally Exempt Small Quantity

***Date Received:*** 20040426
***Facility Name:*** HAZZO LLC
***Classification:*** Conditionally Exempt Small Quantity

***Hazardous Waste Information***

***Waste Code:*** D001
***Waste:*** IGNITABLE WASTE

***Violation/Evaluation Information***

***Evaluation Start Date:*** 20020917
***Evaluation Agency:*** S
***Evaluation Type Description:*** COMPLIANCE EVALUATION INSPECTION ON-SITE
***Violation Short Description:***
***Violation Determined Date:***
***Actual Return to Compliance Date:***
***Violation Responsible Agency:***
***Enforcement Action Date:***
***Enforcement Agency:***
***Disposition Status Date:***
***Disposition Status:***
***Enforcement Type Description:***
***Proposed Penalty Amount:***
***Paid Amount:***
***Final Amount:***

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| 4 | 1 of 1 | NNE/0.21 | 645.86 | SATURN ELECTRONICS & ENGINEERING INC<br>323 SKEELS ST<br>COOPERSVILLE MI 49404 | RCRA GEN |

**EPA Handler ID:** MID005214911
**Current Site Name:** SATURN ELECTRONICS & ENGINEERING INC
**Generator Status Universe:** Conditionally Exempt Small Quantity Generator
**Land Type:** Private
**Activity Location:** MI
**TSD Activity:** N
**Mixed Waste Generator:** N
**Importer Activity:** N
**Transporter Activity:** N
**Transfer Facility:** N
**Recycler Activity:** N
**Onsite Burner Exemption:** N
**Furnace Exemption:** N
**Underground Inject Activity:** N
**Rece Waste From Off Site:** N
**Used Oil Transporter:**
**Used Oil Transfer Facility:**
**Used Oil Processor:**
**Used Oil Refiner:**
**Used Oil Burner:**
**Used Oil Market Burner:**
**Used Oil Spec Marketer:**
**Mailing Address:** 323 SKEELS ST, , COOPERSVILLE, MI, 49404, US
**Contact Name:** KATHY STEBBINS
**Contact Address:** 323 SKEELS ST, , COOPERSVILLE, MI, 49404, US
**Contact Email:**
**Location Street 2:**

**Owner/Operator Information**
**Owner/Operator Indicator:** CP
**Owner/Operator Name:** SATURN ELECTRONICS & ENGINEERING
**Owner/Operator Address:**
**Owner/Operator Phone:**
**Owner/Operator Type:** P
**Date Became Current:** 19850102
**Date Ended Current:**

**Owner/Operator Indicator:** CO
**Owner/Operator Name:** MASCO CORP (DBA MASCO IND/MASCOTECH)
**Owner/Operator Address:**
**Owner/Operator Phone:**
**Owner/Operator Type:** P
**Date Became Current:** 19850102
**Date Ended Current:**

**Owner/Operator Indicator:** CO
**Owner/Operator Name:** SATURN ELECTRONICS & ENGINEERING
**Owner/Operator Address:**
**Owner/Operator Phone:**
**Owner/Operator Type:** P
**Date Became Current:** 19850102
**Date Ended Current:**

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** SATURN ELECTRONICS & ENGINEERING
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 19850102
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** MASCO CORP (DBA MASCO IND/MASCOTECH)
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 19850102
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** SATURN ELECTRONICS & ENGINEERING
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 19850102
***Date Ended Current:***

***NAICS Information***

***Naics Code:*** 11131
***Naics Description:*** ORANGE GROVES

***Handler Information***

***Date Received:*** 19961127
***Facility Name:*** SATURN ELECTRONICS & ENGINEERING INC
***Classification:*** Conditionally Exempt Small Quantity

***Date Received:*** 19871009
***Facility Name:*** SATURN ELECTRONICS & ENGINEERING INC
***Classification:*** Conditionally Exempt Small Quantity

***Hazardous Waste Information***

***Waste Code:*** D001
***Waste:*** IGNITABLE WASTE

***Violation/Evaluation Information***

***Evaluation Start Date:*** 19961120
***Evaluation Agency:*** S
***Evaluation Type Description:*** COMPLIANCE EVALUATION INSPECTION ON-SITE
***Violation Short Description:***
***Violation Determined Date:***
***Actual Return to Compliance Date:***
***Violation Responsible Agency:***
***Enforcement Action Date:***
***Enforcement Agency:***
***Disposition Status Date:***
***Disposition Status:***
***Enforcement Type Description:***
***Proposed Penalty Amount:***

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| **Paid Amount:** | | | | | |
| **Final Amount:** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 5 | 1 of 1 | NNE/0.21 | 646.79 | RIVER STREET PARTNERS<br>350 SKEELS ST<br>COOPERSVILLE MI 49404 | RCRA<br>NON GEN |

**EPA Handler ID:** MID985581271
**Current Site Name:** RIVER STREET PARTNERS
**Generator Status Universe:** No Report
**Land Type:** Private
**Activity Location:** MI
**TSD Activity:** N
**Mixed Waste Generator:** N
**Importer Activity:** N
**Transporter Activity:** N
**Transfer Facility:** N
**Recycler Activity:** N
**Onsite Burner Exemption:** N
**Furnace Exemption:** N
**Underground Inject Activity:** N
**Rece Waste From Off Site:** N
**Used Oil Transporter:**
**Used Oil Transfer Facility:**
**Used Oil Processor:**
**Used Oil Refiner:**
**Used Oil Burner:**
**Used Oil Market Burner:**
**Used Oil Spec Marketer:**
**Mailing Address:** 761 76TH ST SE, , WYOMING, MI, 49508, US
**Contact Name:** DAVID APOL
**Contact Address:** 350 SKEELS ST, , COOPERSVILLE, MI, 49404, US
**Contact Email:**
**Location Street 2:**

***Owner/Operator Information***
**Owner/Operator Indicator:** CP
**Owner/Operator Name:** RIVER STREET PARTNERS
**Owner/Operator Address:**
**Owner/Operator Phone:**
**Owner/Operator Type:** P
**Date Became Current:** 19900102
**Date Ended Current:**

**Owner/Operator Indicator:** CO
**Owner/Operator Name:** RIVER STREET PARTNERS
**Owner/Operator Address:**
**Owner/Operator Phone:**
**Owner/Operator Type:** P
**Date Became Current:** 19900102
**Date Ended Current:**

***NAICS Information***

**Naics Code:** 11131
**Naics Description:** ORANGE GROVES

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|

***Handler Information***

| | |
|---|---|
| ***Date Received:*** | 19900620 |
| ***Facility Name:*** | RIVER STREET PARTNERS |

***Hazardous Waste Information***

| | |
|---|---|
| ***Waste Code:*** | D001 |
| ***Waste:*** | IGNITABLE WASTE |

***Violation/Evaluation Information***

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| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| 6 | 1 of 1 | NNE/0.72 | 634.29 | ***Heath Manufacturing, Inc.*** ***140 Mill Street*** ***Coopersville MI 49404*** | SHWS |

| | | | |
|---|---|---|---|
| ***Facility ID:*** | 70000366 | ***County:*** | Ottawa |
| ***Data Source:*** | Part 201 | ***Township:*** | Coopersville |
| ***Latitude:*** | 43.06241 | ***District:*** | Grand Rapids |
| ***Longitude:*** | -85.93173 | ***Baseline Assess NO:*** | |

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| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| 7 | 1 of 2 | NW/0.71 | 666.33 | ***CONTINENTAL DAIRY FACILITIES LLC*** ***999 W RANDALL ST SUITE A*** ***COOPERSVILLE MI 49404*** | RCRA CORRACTS |

| | |
|---|---|
| ***EPA Handler ID:*** | MID000721738 |
| ***Current Site Name:*** | CONTINENTAL DAIRY FACILITIES LLC |
| ***Generator Status Universe:*** | Small Quantity Generator |
| ***Land Type:*** | Private |
| ***Activity Location:*** | MI |
| ***TSD Activity:*** | Y |
| ***Mixed Waste Generator:*** | N |
| ***Importer Activity:*** | N |
| ***Transporter Activity:*** | N |
| ***Transfer Facility:*** | N |
| ***Recycler Activity:*** | N |
| ***Onsite Burner Exemption:*** | N |
| ***Furnace Exemption:*** | N |
| ***Underground Inject Activity:*** | N |
| ***Rece Waste From Off Site:*** | N |
| ***Used Oil Transporter:*** | N |
| ***Used Oil Transfer Facility:*** | N |
| ***Used Oil Processor:*** | N |
| ***Used Oil Refiner:*** | N |
| ***Used Oil Burner:*** | N |
| ***Used Oil Market Burner:*** | N |
| ***Used Oil Spec Marketer:*** | N |
| ***Mailing Address:*** | 999 W RANDALL ST, SUITE A, COOPERSVILLE, MI, 49404, US |
| ***Contact Name:*** | DERRICK T SCHEIDEL |
| ***Contact Address:*** | |
| ***Contact Email:*** | DSCHEIDEL@CONTINENTALDFLLC.COM |
| ***Location Street 2:*** | SUITE A |

***Owner/Operator Information***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***

***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CS FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 20100601
***Date Ended Current:***

***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** DELPHI AUTOMOTIVE SYSTEMS LLC
***Owner/Operator Address:*** US
***Owner/Operator Phone:***

***Owner/Operator Type:*** P
***Date Became Current:*** 19990102
***Date Ended Current:***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** DELPHI AUTOMOTIVE SYSTEMS LLC
***Owner/Operator Address:*** US
***Owner/Operator Phone:***
***Owner/Operator Type:*** P
***Date Became Current:*** 19990102
***Date Ended Current:***

***NAICS Information***

***Naics Code:*** 311514
***Naics Description:*** DRY, CONDENSED, AND EVAPORATED DAIRY PRODUCT MANUFACTURING

***Naics Code:*** 23621
***Naics Description:*** INDUSTRIAL BUILDING CONSTRUCTION

***Naics Code:*** 81111
***Naics Description:*** AUTOMOTIVE MECHANICAL AND ELECTRICAL REPAIR AND MAINTENANCE

***Naics Code:*** 336399
***Naics Description:*** ALL OTHER MOTOR VEHICLE PARTS MANUFACTURING

***Handler Information***

***Date Received:*** 19801119
***Facility Name:*** CS FACILITIES LLC
***Date Received:*** 20120301
***Facility Name:*** CS FACILITIES LLC
***Classification:*** Conditionally Exempt Small Quantity

***Date Received:*** 19950728
***Facility Name:*** CS FACILITIES LLC
***Classification:*** Conditionally Exempt Small Quantity

***Date Received:*** 20020910
***Facility Name:*** CS FACILITIES LLC
***Classification:*** Conditionally Exempt Small Quantity

***Date Received:*** 19800818
***Facility Name:*** CS FACILITIES LLC
***Classification:*** Conditionally Exempt Small Quantity

***Date Received:*** 20060306
***Facility Name:*** CS FACILITIES LLC
***Classification:*** Conditionally Exempt Small Quantity

***Date Received:*** 20100914
***Facility Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Classification:*** Small Quantity Generator

***Date Received:*** 20110407
***Facility Name:*** CS FACILITIES LLC
***Classification:*** Large Quantity Generator

***Date Received:*** 20130130
***Facility Name:*** CONTINENTAL DAIRY FACILITIES LLC

***Classification:*** Small Quantity Generator

***Date Received:*** 20130604
***Facility Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Classification:*** Small Quantity Generator

***Date Received:*** 20140722
***Facility Name:*** CONTINENTAL DAIRY FACILITIES LLC
***Classification:*** Small Quantity Generator

***Date Received:*** 19900214
***Facility Name:*** AC ROCHESTER G.M.C.
***Classification:*** Large Quantity Generator

***Date Received:*** 19920217
***Facility Name:*** AC ROCHESTER G.M.C.
***Classification:*** Large Quantity Generator

***Date Received:*** 19940221
***Facility Name:*** GMC, AC ROCHESTER DIVISION
***Classification:*** Large Quantity Generator

***Date Received:*** 20060301
***Facility Name:*** DELPHI ENERGY & ENGINE MANAGEMENT SYSTEM
***Classification:*** Conditionally Exempt Small Quantity

***Hazardous Waste Information***

***Waste Code:*** D001
***Waste:*** IGNITABLE WASTE

***Waste Code:*** F002
***Waste:*** THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

***Violation/Evaluation Information***

***Evaluation Start Date:*** 19880308
***Evaluation Agency:*** S
***Evaluation Type Description:*** COMPLIANCE EVALUATION INSPECTION ON-SITE
***Violation Short Description:***
***Violation Determined Date:***
***Actual Return to Compliance Date:***
***Violation Responsible Agency:***
***Enforcement Action Date:***
***Enforcement Agency:***
***Disposition Status Date:***
***Disposition Status:***
***Enforcement Type Description:***
***Proposed Penalty Amount:***
***Paid Amount:***
***Final Amount:***

| | |
|---|---|
| ***Evaluation Start Date:*** | 20150507 |
| ***Evaluation Agency:*** | S |
| ***Evaluation Type Description:*** | COMPLIANCE EVALUATION INSPECTION ON-SITE |
| ***Violation Short Description:*** | |
| ***Violation Determined Date:*** | |
| ***Actual Return to Compliance Date:*** | |
| ***Violation Responsible Agency:*** | |
| ***Enforcement Action Date:*** | |
| ***Enforcement Agency:*** | |
| ***Disposition Status Date:*** | |
| ***Disposition Status:*** | |
| ***Enforcement Type Description:*** | |
| ***Proposed Penalty Amount:*** | |
| ***Paid Amount:*** | |
| ***Final Amount:*** | |

| | |
|---|---|
| ***Evaluation Start Date:*** | 19880607 |
| ***Evaluation Agency:*** | S |
| ***Evaluation Type Description:*** | FINANCIAL RECORD REVIEW |
| ***Violation Short Description:*** | TSD - Financial Requirements |
| ***Violation Determined Date:*** | 19880607 |
| ***Actual Return to Compliance Date:*** | 19881117 |
| ***Violation Responsible Agency:*** | S |
| ***Enforcement Action Date:*** | 19880914 |
| ***Enforcement Agency:*** | S |
| ***Disposition Status Date:*** | |
| ***Disposition Status:*** | |
| ***Enforcement Type Description:*** | WRITTEN INFORMAL |
| ***Proposed Penalty Amount:*** | |
| ***Paid Amount:*** | |
| ***Final Amount:*** | |

| | |
|---|---|
| ***Evaluation Start Date:*** | 19881117 |
| ***Evaluation Agency:*** | S |
| ***Evaluation Type Description:*** | COMPLIANCE SCHEDULE EVALUATION |
| ***Violation Short Description:*** | |
| ***Violation Determined Date:*** | |
| ***Actual Return to Compliance Date:*** | |
| ***Violation Responsible Agency:*** | |
| ***Enforcement Action Date:*** | |
| ***Enforcement Agency:*** | |
| ***Disposition Status Date:*** | |
| ***Disposition Status:*** | |
| ***Enforcement Type Description:*** | |
| ***Proposed Penalty Amount:*** | |
| ***Paid Amount:*** | |
| ***Final Amount:*** | |

| | |
|---|---|
| ***Evaluation Start Date:*** | 19890330 |
| ***Evaluation Agency:*** | S |
| ***Evaluation Type Description:*** | COMPLIANCE EVALUATION INSPECTION ON-SITE |
| ***Violation Short Description:*** | TSD - General |
| ***Violation Determined Date:*** | 19890330 |
| ***Actual Return to Compliance Date:*** | 19890511 |
| ***Violation Responsible Agency:*** | S |
| ***Enforcement Action Date:*** | 19890405 |
| ***Enforcement Agency:*** | S |
| ***Disposition Status Date:*** | |
| ***Disposition Status:*** | |
| ***Enforcement Type Description:*** | WRITTEN INFORMAL |

***Proposed Penalty Amount:***
***Paid Amount:***
***Final Amount:***

***Evaluation Start Date:*** 19890331
***Evaluation Agency:*** S
***Evaluation Type Description:*** FINANCIAL RECORD REVIEW
***Violation Short Description:*** TSD - Financial Requirements
***Violation Determined Date:*** 19890331
***Actual Return to Compliance Date:*** 19890510
***Violation Responsible Agency:*** S
***Enforcement Action Date:*** 19890405
***Enforcement Agency:*** S
***Disposition Status Date:***
***Disposition Status:***
***Enforcement Type Description:*** WRITTEN INFORMAL
***Proposed Penalty Amount:***
***Paid Amount:***
***Final Amount:***

***Evaluation Start Date:*** 19900312
***Evaluation Agency:*** S
***Evaluation Type Description:*** COMPLIANCE EVALUATION INSPECTION ON-SITE
***Violation Short Description:***
***Violation Determined Date:***
***Actual Return to Compliance Date:***
***Violation Responsible Agency:***
***Enforcement Action Date:***
***Enforcement Agency:***
***Disposition Status Date:***
***Disposition Status:***
***Enforcement Type Description:***
***Proposed Penalty Amount:***
***Paid Amount:***
***Final Amount:***

***Evaluation Start Date:*** 19910711
***Evaluation Agency:*** S
***Evaluation Type Description:*** COMPLIANCE EVALUATION INSPECTION ON-SITE
***Violation Short Description:***
***Violation Determined Date:***
***Actual Return to Compliance Date:***
***Violation Responsible Agency:***
***Enforcement Action Date:***
***Enforcement Agency:***
***Disposition Status Date:***
***Disposition Status:***
***Enforcement Type Description:***
***Proposed Penalty Amount:***
***Paid Amount:***
***Final Amount:***

***Evaluation Start Date:*** 19921109
***Evaluation Agency:*** S
***Evaluation Type Description:*** COMPLIANCE EVALUATION INSPECTION ON-SITE
***Violation Short Description:***
***Violation Determined Date:***
***Actual Return to Compliance Date:***
***Violation Responsible Agency:***
***Enforcement Action Date:***

***Enforcement Agency:***
***Disposition Status Date:***
***Disposition Status:***
***Enforcement Type Description:***
***Proposed Penalty Amount:***
***Paid Amount:***
***Final Amount:***

***Evaluation Start Date:*** 19940104
***Evaluation Agency:*** S
***Evaluation Type Description:*** COMPLIANCE EVALUATION INSPECTION ON-SITE
***Violation Short Description:***
***Violation Determined Date:***
***Actual Return to Compliance Date:***
***Violation Responsible Agency:***
***Enforcement Action Date:***
***Enforcement Agency:***
***Disposition Status Date:***
***Disposition Status:***
***Enforcement Type Description:***
***Proposed Penalty Amount:***
***Paid Amount:***
***Final Amount:***

***Event***

***Corrective Action Event Code:*** CA070NO
***Corrective Action Event Description:*** DETERMINATION OF NEED FOR AN INVESTIGATION-INVESTIGATION IS NOT NECESSARY
***Original Schedule Date of Event:***
***New Schedule Date of Event:***
***Actual Date of Event:*** 20090501

***Corrective Action Event Code:*** CA075LO
***Corrective Action Event Description:*** CA PRIORITIZATION-LOW CA PRIORITY
***Original Schedule Date of Event:***
***New Schedule Date of Event:***
***Actual Date of Event:*** 19920929

---

| 7 | 2 of 2 | NW/0.71 | 666.33 | 999 West Randall Street<br>999 West Randall Street<br>Coopersville MI 49404 | SHWS |
|---|---|---|---|---|---|

***Facility ID:*** 70000425
***Data Source:*** Part 201
***Latitude:*** 43.06299
***Longitude:*** -85.95216
***County:*** Ottawa
***Township:*** Coopersville
***District:*** Grand Rapids
***Baseline Assess NO:***

---

| 8 | 1 of 1 | N/0.75 | 638.20 | Coopersville & Marne Railway Co.<br>Danforth & Eastmanville<br>Coopersville MI 49404 | SHWS |
|---|---|---|---|---|---|

***Facility ID:*** 70000093
***Data Source:*** Part 201
***County:*** Ottawa
***Township:*** Coopersville

| Map Key | Number of Records | Direction/ Distance mi | Elevation ft | Site | DB |
|---|---|---|---|---|---|
| **Latitude:** 43.06372<br>**Longitude:** -85.9358 | | | | **District:** Grand Rapids<br>**Baseline Assess NO:** | |
| 9 | 1 of 1 | N/0.87 | 632.63 | **Center Street, 270 & Main Street, 365 270 Center Street and 365 Main Street Coopersville MI 49404** | SHWS |
| **Facility ID:** 70000393<br>**Data Source:** Part 201<br>**Latitude:** 43.06434<br>**Longitude:** -85.93677 | | | | **County:** Ottawa<br>**Township:** Coopersville<br>**District:** Grand Rapids<br>**Baseline Assess NO:** | |

# Unplottable Summary

**Total: 8 Unplottable sites**

| DB | Company Name/Site Name | Address | City | Zip | ERIS ID |
|---|---|---|---|---|---|
| FINDS/FRS | WHITE ACRE TURKEY, LLC | 1585 68TH AVE | COOPERSVILLE MI | 49404 | 817602264 |
| RCRA NON GEN | MI DEPT/TRANSPORTATION | I 96 E&WBD OVER DEER CREEK | POLKTON TOWNSHIP MI | 49404 | 810233132 |
| RCRA NON GEN | MI DEPT/TRANSPORTATION | I 96 FROM 16TH AVE TO 68TH AVE | COOPERSVILLE MI | 49404 | 810234758 |
| SHWS | Lincoln Street Property | Lincoln Street | Coopersville MI | 49404 | 818761623 |
| SPILLS | | ON 68 AND 96 | COOPERSVILLE MI | | 818897362 |
| SPILLS | | Eastbound I-96 at 17 Mile Marker | Coopersville MI | | 818885404 |
| SPILLS | | | Polkton twp. MI | | 826094420 |
| SPILLS | | 68th Avenue | Coopersville MI | | 818902634 |

# Unplottable Report

***Site:*** ***WHITE ACRE TURKEY, LLC***
***1585 68TH AVE  COOPERSVILLE MI 49404***

FINDS/FRS

| | |
|---|---|
| ***Registry ID:*** | 110010598184 |
| ***FIPS Code:*** | 26139 |
| ***Program Acronyms:*** | |
| ***HUC Code:*** | 04050006 |
| ***Site Type Name:*** | STATIONARY |
| ***EPA Region Code:*** | 05 |
| ***Conveyor:*** | FRS-GEOCODE |
| ***County Name:*** | OTTAWA |
| ***Source:*** | |
| ***SIC Codes:*** | |
| ***SIC Code Descriptions:*** | |
| ***Federal Facility Code:*** | |
| ***NAICS Codes:*** | |
| ***NAICS Code Descriptions:*** | |
| ***Federal Agency Name:*** | |
| ***US/Mexico Border Ind:*** | |
| ***Congressional Dist No:*** | 02 |
| ***Census Block Code:*** | 261390202001001 |
| ***Create Date:*** | 01-MAR-2000 00:00:00 |
| ***Update Date:*** | 05-MAR-2013 09:59:37 |
| ***Location Description:*** | |
| ***Supplemental Location:*** | |
| ***Tribal Land Code:*** | |
| ***Tribal Land Name:*** | |
| ***Latitude:*** | 43.07462 |
| ***Longitude:*** | -85.9569 |
| ***Coord Collection Method:*** | ADDRESS MATCHING-STREET CENTERLINE |
| ***Accuracy Value:*** | 2000 |
| ***Datum:*** | NAD83 |
| ***Reference Point:*** | ENTRANCE POINT OF A FACILITY OR STATION |
| ***Interest Types:*** | FORMAL ENFORCEMENT ACTION |
| ***Facility Detail Rprt URL:*** | http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110010598184 |

***Site:*** ***MI DEPT/TRANSPORTATION***
***I 96 E&WBD OVER DEER CREEK  POLKTON TOWNSHIP MI 49404***

RCRA NON GEN

| | |
|---|---|
| ***EPA Handler ID:*** | MIK826631186 |
| ***Current Site Name:*** | MI DEPT/TRANSPORTATION |
| ***Generator Status Universe:*** | No Report |
| ***Land Type:*** | State |
| ***Activity Location:*** | MI |
| ***TSD Activity:*** | N |
| ***Mixed Waste Generator:*** | N |
| ***Importer Activity:*** | N |
| ***Transporter Activity:*** | N |
| ***Transfer Facility:*** | N |
| ***Recycler Activity:*** | N |
| ***Onsite Burner Exemption:*** | N |
| ***Furnace Exemption:*** | N |

***Underground Inject Activity:*** N
***Rece Waste From Off Site:*** N
***Used Oil Transporter:***
***Used Oil Transfer Facility:***
***Used Oil Processor:***
***Used Oil Refiner:***
***Used Oil Burner:***
***Used Oil Market Burner:***
***Used Oil Spec Marketer:***
***Mailing Address:*** 1420 FRONT AVE NW, , GRAND RAPIDS, MI, 49504, US
***Contact Name:*** SUZETTE PEPLINSKI
***Contact Address:*** I 96 E&WBD OVER DEER CREEK, , POLKTON TOWNSHIP, MI, 49404, US
***Contact Email:***
***Location Street 2:***

***--*** --
***Owner/Operator Information***

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20020729
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20020729
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20020729
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20020729
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20020729
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S

| | |
|---|---|
| ***Date Became Current:*** | 20020729 |
| ***Date Ended Current:*** | |
| *--* | -- |
| ***NAICS Information*** | |
| *--* | -- |
| ***Naics Code:*** | 23731 |
| ***Naics Description:*** | HIGHWAY, STREET, AND BRIDGE CONSTRUCTION |
| *--* | -- |
| ***Handler Information*** | |
| *--* | -- |
| ***Date Received:*** | 20010729 |
| ***Facility Name:*** | MI DEPT/TRANSPORTATION |
| ***Classification:*** | Large Quantity Generator |
| *--* | -- |
| ***Date Received:*** | 20011231 |
| ***Facility Name:*** | MI DEPT/TRANSPORTATION |
| ***Classification:*** | Conditionally Exempt Small Quantity |
| *--* | -- |
| ***Date Received:*** | 20050222 |
| ***Facility Name:*** | MI DEPT/TRANSPORTATION |
| ***Hazardous Waste Information*** | |
| *--* | -- |
| ***Waste Code:*** | D001 |
| ***Waste:*** | IGNITABLE WASTE |
| *--* | -- |
| ***Violation/Evaluation Information*** | |
| *--* | -- |

***Site:*** ***MI DEPT/TRANSPORTATION***
***I 96 FROM 16TH AVE TO 68TH AVE COOPERSVILLE MI 49404***

RCRA NON GEN

| | |
|---|---|
| ***EPA Handler ID:*** | MIK857386585 |
| ***Current Site Name:*** | MI DEPT/TRANSPORTATION |
| ***Generator Status Universe:*** | No Report |
| ***Land Type:*** | State |
| ***Activity Location:*** | MI |
| ***TSD Activity:*** | N |
| ***Mixed Waste Generator:*** | N |
| ***Importer Activity:*** | N |
| ***Transporter Activity:*** | N |
| ***Transfer Facility:*** | N |
| ***Recycler Activity:*** | N |
| ***Onsite Burner Exemption:*** | N |
| ***Furnace Exemption:*** | N |
| ***Underground Inject Activity:*** | N |
| ***Rece Waste From Off Site:*** | N |
| ***Used Oil Transporter:*** | |
| ***Used Oil Transfer Facility:*** | |
| ***Used Oil Processor:*** | |
| ***Used Oil Refiner:*** | |
| ***Used Oil Burner:*** | |
| ***Used Oil Market Burner:*** | |
| ***Used Oil Spec Marketer:*** | |
| ***Mailing Address:*** | 1420 FRONT AVE NW, , GRAND RAPIDS, MI, 49504, US |
| ***Contact Name:*** | ERICK KIND |
| ***Contact Address:*** | I 96 FROM 16TH AVE TO 68TH AVE, , COOPERSVILLE, MI, 49404, US |
| ***Contact Email:*** | |
| ***Location Street 2:*** | |
| *--* | -- |
| ***Owner/Operator Information*** | |

***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20040712
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20040712
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20040712
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20040712
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CP
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20040712
***Date Ended Current:***
***--*** --
***Owner/Operator Indicator:*** CO
***Owner/Operator Name:*** MICH DEPT OF TRANSPORTATION
***Owner/Operator Address:***
***Owner/Operator Phone:***
***Owner/Operator Type:*** S
***Date Became Current:*** 20040712
***Date Ended Current:***
***--*** --
***NAICS Information***
***--*** --
***Naics Code:*** 23731
***Naics Description:*** HIGHWAY, STREET, AND BRIDGE CONSTRUCTION
***--*** --
***Handler Information***
***--*** --
***Date Received:*** 20040712
***Facility Name:*** MI DEPT/TRANSPORTATION
***Classification:*** Large Quantity Generator
***--*** --
***Date Received:*** 20040930
***Facility Name:*** MI DEPT/TRANSPORTATION

| | |
|---|---|
| ***Date Received:*** | 20060531 |
| ***Facility Name:*** | MI DEPT/TRANSPORTATION |
| ***Hazardous Waste Information*** | |
| ***--*** | -- |
| ***Waste Code:*** | D001 |
| ***Waste:*** | IGNITABLE WASTE |
| ***--*** | -- |
| ***Violation/Evaluation Information*** | |
| ***--*** | -- |

***Site:*** ***Lincoln Street Property***
***Lincoln Street Coopersville MI 49404*** SHWS

| | | | |
|---|---|---|---|
| ***Facility ID:*** | 70000340 | ***County:*** | Ottawa |
| ***Data Source:*** | Part 201 | ***Township:*** | Coopersville |
| ***Latitude:*** | 43.063 | ***District:*** | Grand Rapids |
| ***Longitude:*** | -85.94033 | ***Baseline Assess NO:*** | |

***Site:***
***ON 68 AND 96 COOPERSVILLE MI*** SPILLS

| | |
|---|---|
| ***Description - 1(2):*** | |
| ***Incident NO:*** | |
| ***Cl up Compl Dt/Time Estim:*** | |
| ***Pollutant:*** | ODOR |
| ***Pollutant Released to:*** | |
| ***Amt Released to Air:*** | |
| ***Amt Rlsd Ground/Pavement:*** | |
| ***Amt Released to Water:*** | |
| ***Body of Water/Ditch Invol:*** | |
| ***Cl up Contractor Name:*** | |
| ***Agencies Notified:*** | |
| ***Cleanup Efforts So Far:*** | |
| ***Volume Recovered So Far:*** | |
| ***Description - 1:*** | WANTS TO COMPLAIN THAT THE DUMP SMELLS BAD. THEY ARE DUMPING SEWAGE |
| ***Description - 2:*** | |
| ***Description - 3:*** | |
| ***Description - 4:*** | |
| ***Description - 5:*** | |
| ***Description - 6:*** | |
| ***Date:*** | 8/17/2006 |
| ***Date Discovered:*** | 8/17/2006 |
| ***Time Discovered:*** | 4:00 |
| ***Time (hrs):*** | 2:47 PM |
| ***Date Occurred:*** | |
| ***Time Occurred:*** | |
| ***Emerg Crews on Scene:*** | |
| ***Weather or Wind:*** | |
| ***Operator (In):*** | |
| ***Date Rec'd by DEQ Staff:*** | |
| ***Time Rec'd by DEQ Staff:*** | |
| ***DEQ Contact:*** | APRIL LAZZARO |
| ***Division or On Call:*** | AQD |
| ***Time DEQ Paged:*** | 14:56 |
| ***Time DEQ Took Call:*** | |
| ***No of Staff Contacts:*** | |
| ***Post Review Initials:*** | |
| ***Referral Notes:*** | |

***Company-Complainant:***
***City Complainant:*** COOPERSVILLE
***State Complainant:*** MI
***Zip Complainant:***
***Party / Company Involved:*** UNKNOWN
***Party Involved-Addr:*** UNKNOWN
***Party Involved-City:***
***Party Involved-State:***
***Party Involved-Zip:***
***Incident Township:***
***Incident County:*** OTTAWA
***Cross Streets - Incident:***
***Rain Condition:***
***District:*** Grand Rapids
***Wind Direction:***
***Office/After Hours:***

***Site:***

***Eastbound I-96 at 17 Mile Marker  Coopersville MI***

SPILLS

***Description - 1(2):***
***Incident NO:***
***Cl up Compl Dt/Time Estim:***
***Pollutant:*** Diesel fuel/Unknown
***Pollutant Released to:***
***Amt Released to Air:***
***Amt Rlsd Ground/Pavement:***
***Amt Released to Water:***
***Body of Water/Ditch Invol:*** Unknown
***Cl up Contractor Name:***
***Agencies Notified:***
***Cleanup Efforts So Far:***
***Volume Recovered So Far:***
***Description - 1:*** There was a truck accident.  Diesel fuel spilled into a ditch.  The fire
***Description - 2:*** 32 Road.  He has done this before.
***Description - 3:***
***Description - 4:***
***Description - 5:***
***Description - 6:***
***Date:*** 4/22/2002
***Date Discovered:*** 4/22/2002
***Time Discovered:*** 1:19:00 PM
***Time (hrs):*** 1:16:00 PM
***Date Occurred:***
***Time Occurred:***
***Emerg Crews on Scene:***
***Weather or Wind:***
***Operator (In):*** ERA
***Date Rec'd by DEQ Staff:***
***Time Rec'd by DEQ Staff:***
***DEQ Contact:*** Marcia Mead
***Division or On Call:*** ERD
***Time DEQ Paged:*** 1:32:00 PM
***Time DEQ Took Call:***
***No of Staff Contacts:***
***Post Review Initials:*** DD
***Referral Notes:***
***Company-Complainant:***
***City Complainant:*** Grand Haven
***State Complainant:*** MI
***Zip Complainant:***

| | |
|---|---|
| ***Party / Company Involved:*** | Unknown |
| ***Party Involved-Addr:*** | Unknown |
| ***Party Involved-City:*** | |
| ***Party Involved-State:*** | |
| ***Party Involved-Zip:*** | |
| ***Incident Township:*** | |
| ***Incident County:*** | Ottawa |
| ***Cross Streets - Incident:*** | |
| ***Rain Condition:*** | |
| ***District:*** | Grand Rapids |
| ***Wind Direction:*** | |
| ***Office/After Hours:*** | |

***Site:***

***Polkton twp. MI***

SPILLS

| | |
|---|---|
| ***Description - 1(2):*** | |
| ***Incident NO:*** | 11045 |
| ***Cl up Compl Dt/Time Estim:*** | |
| ***Pollutant:*** | unknown if pollution related |
| ***Pollutant Released to:*** | |
| ***Amt Released to Air:*** | |
| ***Amt Rlsd Ground/Pavement:*** | |
| ***Amt Released to Water:*** | |
| ***Body of Water/Ditch Invol:*** | Deer Creek |
| ***Cl up Contractor Name:*** | |
| ***Agencies Notified:*** | |
| ***Cleanup Efforts So Far:*** | |
| ***Volume Recovered So Far:*** | |
| ***Description - 1:*** | Deer Creek close to Coopersville - south of I96 - south of garfield about 1/4 to 1/2 mile - lots of dead suckers, chubs, minnows. Happens a few times over the years. There are 3 big farms in the upstream watershed that might possibly be involved, but no direct evidence of this is observed. PEAS advised the caller that we will refer it to water quality specialists in the DEQ and fisheries specialists in DNR to determine causation. |
| ***Description - 2:*** | |
| ***Description - 3:*** | |
| ***Description - 4:*** | |
| ***Description - 5:*** | |
| ***Description - 6:*** | |
| ***Date:*** | 6/7/2014 |
| ***Date Discovered:*** | |
| ***Time Discovered:*** | |
| ***Time (hrs):*** | 9:30 |
| ***Date Occurred:*** | 6/7/2014 |
| ***Time Occurred:*** | |
| ***Emerg Crews on Scene:*** | |
| ***Weather or Wind:*** | |
| ***Operator (In):*** | |
| ***Date Rec'd by DEQ Staff:*** | |
| ***Time Rec'd by DEQ Staff:*** | |
| ***DEQ Contact:*** | |
| ***Division or On Call:*** | |
| ***Time DEQ Paged:*** | |
| ***Time DEQ Took Call:*** | |
| ***No of Staff Contacts:*** | |
| ***Post Review Initials:*** | |
| ***Referral Notes:*** | |
| ***Company-Complainant:*** | |
| ***City Complainant:*** | |
| ***State Complainant:*** | |
| ***Zip Complainant:*** | |

***Party / Company Involved:***
***Party Involved-Addr:***
***Party Involved-City:***
***Party Involved-State:***
***Party Involved-Zip:***
***Incident Township:***
***Incident County:*** Ottawa
***Cross Streets - Incident:*** south of I-96 and Garfield 1/4 mi
***Rain Condition:***
***District:*** Grand Rapids
***Wind Direction:***
***Office/After Hours:*** After Hours

***Site:***
***68th Avenue Coopersville MI***

SPILLS

***Description - 1(2):***
***Incident NO:***
***Cl up Compl Dt/Time Estim:***
***Pollutant:*** Unknown chemicals - Raw sewage/Unknown volume
***Pollutant Released to:***
***Amt Released to Air:***
***Amt Rlsd Ground/Pavement:***
***Amt Released to Water:***
***Body of Water/Ditch Invol:*** Unknown
***Cl up Contractor Name:***
***Agencies Notified:***
***Cleanup Efforts So Far:***
***Volume Recovered So Far:***
***Description - 1:*** The dump smells and someone is putting chemicals on the dump. That is causing
***Description - 2:***
***Description - 3:***
***Description - 4:***
***Description - 5:***
***Description - 6:***
***Date:*** 6/14/2005
***Date Discovered:*** 6/12/2005
***Time Discovered:*** 7:00
***Time (hrs):*** 11:09 AM
***Date Occurred:***
***Time Occurred:***
***Emerg Crews on Scene:***
***Weather or Wind:***
***Operator (In):***
***Date Rec'd by DEQ Staff:***
***Time Rec'd by DEQ Staff:***
***DEQ Contact:*** Kelly Orent
***Division or On Call:***
***Time DEQ Paged:***
***Time DEQ Took Call:***
***No of Staff Contacts:***
***Post Review Initials:***
***Referral Notes:***
***Company-Complainant:***
***City Complainant:*** Grand Haven
***State Complainant:*** MI
***Zip Complainant:***
***Party / Company Involved:*** Coopersville Dump
***Party Involved-Addr:*** 68th Avenue
***Party Involved-City:***
***Party Involved-State:***

***Party Involved-Zip:***
***Incident Township:***
***Incident County:*** Ottawa
***Cross Streets - Incident:***
***Rain Condition:***
***District:*** Grand Rapids
***Wind Direction:***
***Office/After Hours:***

# Appendix: Database Descriptions

*Ecolog Environmental Risk Information Services Ltd (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:*

*"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."*

## *Standard Environmental Record Sources*

### *Federal*

***National Priority List:*** NPL

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

***Government Publication Date: Oct 8, 2015***

***National Priority List - Proposed:*** PROPOSED NPL

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

***Government Publication Date: Oct 8, 2015***

***Deleted NPL:*** DELETED NPL

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.

***Government Publication Date: Oct 8, 2015***

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

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

***Government Publication Date: Oct 25, 2013***

***CERCLIS - No Further Remedial Action Planned:*** CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means 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). 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.

***Government Publication Date: Oct 25, 2013***

***CERCLIS Liens:*** CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

***Government Publication Date: Jan 30, 2014***

***RCRA CORRACTS- Corrective Action:*** RCRA CORRACTS

RCRA Info 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. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

***Government Publication Date: Oct 13, 2015***

***RCRA non-CORRACTS TSD Facilities:*** RCRA TSD

RCRA Info 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. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

***Government Publication Date: Oct 13, 2015***

***RCRA Generator List:*** RCRA GEN

RCRA Info 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10).

***Government Publication Date: Oct 13, 2015***

***RCRA Non-Generators:*** RCRA NON GEN

RCRA Info 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

***Government Publication Date: Oct 13, 2015***

***Federal Engineering Controls-ECs:*** FED ENG

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

***Government Publication Date: Jul 30, 2014***

***Federal Institutional Controls- ICs:*** FED INST

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency ) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

***Government Publication Date: Jul 30, 2014***

***Emergency Response Notification System:*** ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

***Government Publication Date: 1982-1986***

***Emergency Response Notification System:*** ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

***Government Publication Date: 1987-1989***

***Emergency Response Notification System:*** ERNS

Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. This database is made available by the United States Environmental Protection Agency (EPA).

***Government Publication Date: Oct 7, 2015***

***The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database:*** FED BROWNFIELDS

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 protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

***Government Publication Date: Jul 20, 2015***

***Material Licensing Tracking System (MLTS):*** MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC.

***Government Publication Date: Oct 7, 2014***

## *State*

***Part 201 Site List:*** SHWS

A Part 201 Facility is an area, place, or property where a hazardous substance in excess of the concentrations that satisfy the cleanup criteria for unrestricted residential use has been released, deposited, disposed of, or otherwise comes to be located. This list is maintained by the Remediation and Redevelopment Division in Department of Environmental Quality (DEQ). This database is state equivalent CERCLIS.

***Government Publication Date: May 8, 2015***

***Delisted Hazardous and BEA Sites:*** DELISTED SHWS

This list is comprised of sites that were once included in the inventory of facilities (Part 201, BEA) list but have been removed. After the Department of Environmental Quality (DEQ) has determined that a BEA Part 201 site has been remediated, the site is removed from the inventory of facilities. This database is state equivalent CERCLIS.

***Government Publication Date: May 8, 2015***

***State Sites Cleanup List of Sites:*** SITE CLEANUP

Public Act 380 of 1996 amended Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, PA 451 of 1994, by adding Section 20108c and creating the State Sites Cleanup Fund (SSCUF) and the State Sites Cleanup Program (SSCUP). Its intent was to fund environmental cleanups at contaminated sites where the state is a liable party as an owner or operator of the site, as defined in Section 20126 of Part 201. This list is maintained by the Department of Environmental Quality (DEQ).

***Government Publication Date: Jan 26, 2015***

***Solid Waste Facilities and Landfills:*** SWF/LF

An inventory of solid waste and landfill facilities maintained by the Department of Environmental Quality (DEQ). This list contains all disposal area types and status types.

***Government Publication Date: Jun 25, 2015***

***Leaking Underground Storage Tank:*** LUST

At the time of a release, the owner/operator is responsible for the corrective actions mandated by Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 of PA 451, as amended (NREPA). Owners/operators are required to hire consultants that meet the qualifications in Section 21325 of Part 213 to perform corrective actions, and to submit specific reports required by the statute. The Remediation Division of the Department of Environmental Quality (DEQ) is charged with selectively auditing the final assessment reports and closure reports.

***Government Publication Date: Jun 25, 2015***

***Underground Storage Tank:*** UST

The Department of Environmental Quality (DEQ) collects Underground Storage Tank (UST) data. The Active UST facilities are those where there is at least one tank at the facility that is not closed in place or removed and is regulated under Part 211, Underground Storage Tank Regulations, of the Natural Resources and Environment Protection Act, 1994 PA 451, as amended (Act 451). There may be closed tanks and/or active non-regulated tanks (such as heating oil tanks) at the facility. Closed UST facilities are those where all tanks at the facility that are regulated under Part 211 of Act 451 are closed. There may be non-regulated active tanks at the facility, such as heating oil tanks or tanks that are smaller than the regulatory cut-off.

***Government Publication Date: Jun 25, 2015***

***Aboveground Storage Tanks:*** AST

The Aboveground Storage Tank (AST) Program in the Department of Licensing and Regulatory Affairs (LARA) regulates the following: storage and handling of flammable and combustible liquids with flash point less than 200 degrees Fahrenheit, storage and handling of liquefied petroleum gases compressed natural gas vehicular systems. The regulatory authority is from the Fire Prevention Code, 1941 PA 207, as amended, and the rules promulgated under the act.

***Government Publication Date: Jun 26, 2015***

***Delisted Leaking Underground Storage Tank:*** DELISTED LST

This list is comprised of sites that were once included in the Leaking Underground Storage Tank list but have been removed. After the Department of Environmental Quality (DEQ) has determined that a Leaking Underground Storage Tank (LUST) site has been excluded from the DEQ STID Database, the site is removed from the inventory of facilities.

***Government Publication Date: Jun 25, 2015***

***Delisted Storage Tank:*** DELISTED TANK

This list is comprised of sites that were once included in the Storage Tank list but have been removed. After the Department of Environmental Quality (DEQ) has determined that an Storage Tank site has been excluded from the DEQ STID Database, the site is removed from the inventory of facilities.

***Government Publication Date: Jun 26, 2015***

***Engineering and Institutional Controls:*** AUL

A list of Engineering and Institutional Controls. According to U.S. Environmental Protection Agency (EPA), these engineering and institutional controls are usually legal controls intended to influence human activities in such a way as to prevent or reduce exposure to hazardous wastes or hazardous constituents that are left on a site following active cleanup work. Institutional controls, however, are not intended to be used as secured abandonment (i.e., physically securing a site and preventing exposure while making little or no effort to ensure that chemicals of concerns do not migrate to and beyond the property boundary). Institutional controls may not be appropriate as the sole remedy for off-site releases. EPA's expectation is for sites to be remediated to allow for reasonable beneficial reuse. U.S. EPA has developed guidance on the use of institutional controls at Superfund and RCRA corrective action sites, and the guidance should be consulted for additional information concerning their applicability and use.

***Government Publication Date: Jun 3, 2015***

***Brownfield Redevelopment Financing Act Sites:*** BROWNFIELDS

List of sites included in the Michigan Department of Environmental Quality (DEQ)'s reporting on Brownfield Redevelopment Financing Act activities from 2003-2012. In Michigan, the Brownfield Redevelopment Financing Act (Act 381) of 1996 authorizes municipalities to create brownfield redevelopment authorities to facilitate the implementation of brownfield plans and to create brownfield redevelopment zones in order to promote the revitalization, redevelopment, and reuse of certain properties.

***Government Publication Date: Sep 30, 2012***

## *Tribal*

***Leaking Underground Storage Tanks on Indian Lands:*** INDIAN LUST

LUSTs on Tribal/Indian Lands in Region 5, which includes Michigan, Minnesota, and Wisconsin.

***Government Publication Date: Feb 26, 2015***

***Underground Storage Tanks (USTs) on Indian Lands:*** INDIAN UST

USTs on Tribal/Indian Lands in Region 5, which includes Michigan, Minnesota, and Wisconsin.

***Government Publication Date: Feb 26, 2015***

## *County*

***No County standard environmental record sources available for this State.***

## *Additional Environmental Record Sources*

## *Federal*

***Facility Registry Service/Facility Index:*** FINDS/FRS

The US Environmental Protection Agency (EPA)'s Facility Registry System (FRS) is a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, data collected from EPA's Central Data Exchange registrations and data management personnel.

***Government Publication Date: Sep 24, 2015***

***Toxics Release Inventory (TRI) Program:*** TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

***Government Publication Date: 1987-2013***

***Hazardous Materials Information Reporting System:*** HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

***Government Publication Date: Feb 24, 2015***

***National Clandestine Drug Labs:*** NCDL

The U.S. Department of Justice ("the Department") provides this data 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.

***Government Publication Date: Sep 5, 2015***

***Inventory of Open Dumps, June 1985:*** ODI

The Resource Conservation and Recovery Act (RCRA of the Act) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

***Government Publication Date: Jun 1985***

***EPA Report on the Status of Open Dumps on Indian Lands:*** IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified ongressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

***Government Publication Date: Dec 31, 1998***

***Toxic Substances Control Act:*** TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

***Government Publication Date: Jun 30, 2014***

***Hist TSCA:*** HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

***Government Publication Date: 2006***

***FTTS Administrative Case Listing:*** FTTS ADMIN

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

***Government Publication Date: Jan 19, 2007***

***FTTS Inspection Case Listing:*** FTTS INSP

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

***Government Publication Date: Jan 19, 2007***

## *State*

***Pollution Emergency Alerting (PEAS):*** SPILLS

The PEAS listing maintained by the Department of Environmental Equity (DEQ) points out the environmental damages/pollution, such as tanker accidents, pipeline breaks, and releases of reportable quantities of hazardous substances. Inconsistencies which existed in the data as it came from the source have not been interpreted or fixed, the data is provided as it was received from the DEQ.

***Government Publication Date: Mar 31, 2014***

***Baseline Environmental Assessment:*** BEA

A Michigan Baseline Environmental Assessment (BEA) from the Department of Environmental Quality (DEQ) allows people to purchase or begin operating at a facility without being held liable for existing contamination. BEAs are used to gather enough information about the property being transferred so that existing contamination can be distinguished from any new releases that might occur after the new owner or operator takes over the property.

***Government Publication Date: May 8, 2015***

## *Tribal*

***No Tribal additional environmental record sources available for this State.***

## *County*

***No County additional environmental record sources available for this State.***

# Definitions

***Database Descriptions:*** This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

***Detail Report***: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

***Distance:*** The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

***Direction:*** The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

***Elevation:*** The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

***Executive Summary:*** This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

***Map Key:*** The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

***Unplottables:*** These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.