

October 10, 2018

**Confidential Attorney-Client Privileged Information  
Do Not Disclose**

Paul M. Collins  
Attorney and Counselor at Law  
Miller Canfield  
One Michigan Avenue, Suite 900  
Lansing, Michigan 48933

**Re: Lansing Board of Water & Light  
Erickson Station  
Compliance with 40 CFR §257 – Location Restrictions**

Dear Mr. Collins:

Mayotte Design & Engineering, PC (MD&E) was commissioned by the Lansing Board of Water & Light (LBWL) to evaluate as-built engineering specifications for the existing impoundment system at the Erickson Station Power Plant (Erickson Station, subject property, or site) to verify compliance with the 40 Code of Federal Regulations (CFR) §257 – Location Restrictions for Coal Combustion Residual (CCR) Surface Impoundments. Specifically, this letter report focuses on compliance of the subject impoundment system with the restrictions associated with 40 CFR §257.60, §257.62, §257.63 and §257.64.

**Background**

**Description of Relevant Structures**

Erickson Station is an electrical power generation facility located at 3725 South Canal Road in Delta Township, Ingham County, Michigan (Figure 1). The latitude and longitude of power plant on the subject property are 42° 41' 32.83" N and 84° 39' 27.89" W, respectively. On-premises elevations range from 870 feet (ft) to 883 ft above geodetic datum (agd).

Erickson Station generates up to 165 megawatts of electric power from one coal-fired boiler, designated as Unit 1. Currently, bottom-ash slurries from Unit 1 are processed on-site in dewatering tanks (hydrobins) and a sequence of three surface impoundments. The first two impoundments in the sequence (i.e., Forebay and Retention Basin, respectively) were constructed in 2014 and lined using best available technology. The third impoundment, the Clear Water Pond (CWP), was constructed in 1970 and is lined with compacted clay.

The cores of the embankments for the Forebay, Retention Basin and CWP are constructed with clay-rich engineered fill with hydraulic permeabilities less than  $10^{-7}$  cm/sec. The flanks of the embankments also consist of clay-rich engineered fill. The base grade elevation of both the Forebay and Retention Basin is 871.5 ft agd. The base grades of the CWP range from 871 to 874 ft agd.

The interior embankments and floors of both the Forebay and Retention Basin are lined with a layer of geosynthetic clay (GCL) overlain with a 40-millimeter-thick flexible polyvinylchloride membrane (FML). Each FML is protected with geofabric and a 6- to 12-inch layer of sand. The tops of the embankments that are subject to wave action are protected with an additional layer of geofabric and 6 to 12 inches of stone rip-rap. Vents are positioned at 40 feet intervals (approximately) around the perimeters of the Forebay and Retention Basin to relieve gas pressures that may accumulate beneath the liner materials.

The floor of the CWP consist of compacted clay. The tops of the interior embankments of the CWP are protected with approximately 6 inches of stone rip-rap.

## **Geology and Hydrogeology**

Erickson Station resides within the Lansing Loamy Plains physiographic region of Michigan. According to the Michigan Geologic Survey, this region is characterized by a heterogeneous mix of glacial hilly and rolling landscapes associated with the Saginaw, Lake Michigan and Huron-Erie lobes of the Laurentide ice sheet. Unconsolidated deposits in the area surrounding the subject property consist of medium to coarse textured tills and ground moraine deposits associated with the Saginaw Lobe. Topographic relief in the area is moderate. Soils are predominantly loams.

Boring logs for 41 water wells located within a 1-mile radius of the impoundments at the Erickson Station (Figure 2 and Attachment A) were examined to further evaluate the geology and hydrogeology in the vicinity of the site. In general, these records indicate that the area is underlain by a 30 to 120 feet thick sequence of layered unconsolidated glacial till and alluvium over shales and sandstone bedrock associated with the Saginaw Formation. The unconsolidated deposits consist predominantly of interlayered and poorly sorted clays, sand and gravels. Water wells in the area are screened within the Saginaw Formation. Water levels measured in these wells range from 10 to 60 ft below grade.

### **Location Restrictions**

The location restrictions in the CCR Rule that were examined as part of the subject study include:

- §257.60 – Placement Above the Uppermost Aquifer
- §257.62 – Fault Areas
- §257.63 – Seismic Impact Zones
- §257.64 – Unstable Areas

### **§257.60 – Uppermost Aquifer**

The CCR Rule requires new CCR landfills, existing and new CCR surface impoundments, and lateral expansions of CCR units to be constructed with a base that is 5 feet above the upper limit of the uppermost aquifer (40 CFR §257.60, 2015). The CCR Rule defines the uppermost aquifer as the geologic formation nearest the natural ground surface that is an aquifer capable of yielding usable quantities of groundwater to wells or springs (40 CFR §257.53, 2015).

The till deposits beneath Erickson Station are not productive sources of groundwater. Sandstone layers within the Saginaw Formation are more productive and common targets for water well screen placement in the vicinity of the site (Attachment A). The potentiometric surfaces associated with these aquifers range from 10 feet below grade near the Grand River, southeast of Erickson Station, to over 60 feet north of the site, near Millett Highway (Figure 1).

Test pits excavated, and borings drilled, at Erickson Station (Figure 3, Attachment B) reveal that on-site soils are clay-rich and unsaturated to depths of at least 5 feet beneath the base grades of the impoundment system. Sands and sandy clays are differentially saturated at depths ranging from approximately 5 to 15 feet below base grades. Within these strata, moisture is layered, including thin zones of saturation interbedded between moist and dry sediments. The differential nature of moisture content within these materials is not characteristic of geologic materials that produce usable quantities of groundwater.

In-field permeability testing was performed at four test pit and boring locations within the footprint of the impoundment system in 1969 (Figure 3). The base elevation of the deepest of these pits was 867.5 ft agd (AP-5, Attachment B), positioned directly east of the CWP. A falling-head permeability test performed in soil boring AP-5 proved that saturated conditions did not exist within 5 feet of ground surface at that location.

Based on the analysis presented above, it is concluded that the base elevations of the Erickson Station impoundment system are significantly greater than 5 feet above the uppermost aquifer beneath the site. The Saginaw Formation is considered to be the uppermost aquifer beneath the subject property. The top of the Saginaw Formation beneath the impoundment system was identified in AP-5 (Attachment B) at a depth of approximately 67 ft below grade.

### **§257.62 – Fault Areas**

The CCR Rule limits the location of new CCR landfills, existing and new CCR surface impoundments, and lateral expansions of CCR units to areas outside fault damage zones (40 CFR §257.62, 2015). The CCR Rule requires these CCR units to be located at least 200 feet from the outermost damage zone of faults that have experienced displacement with the Holocene time period. The CCR Rule defines displacement as the relative movement of any two sides of a fault measured in any direction. The CCR Rule defines the Holocene time period as the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch, at 11,700 years before present, to present (40 CFR §257.53, 2015).

Consultation of the U.S. Quaternary Faults and Folds Database (US Geologic Hazards Science Center, Boulder, Colorado) reveals the presence of no faults in the Lansing, Michigan region, including area surrounding the subject property.

### **§257.63 – Seismic Impact Zones**

The CCR Rule requires new CCR landfills, existing and new CCR surface impoundments, and lateral expansions of CCR units to be located outside seismic impact zones (40 CFR §257.63, 2015). A seismic impact zone is defined in the CCR Rule as an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 50 years (40 CFR §257.53, 2015).

Figure 4 identifies Seismic Hazard Zones within the continental United States, as determined by the U.S. Geologic Survey (USGS). As revealed on this figure, the Lansing, Michigan area, including the Erickson Station, is considered by the USGS to be within a Seismic Impact Zone in which there is a less 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 50 years.

Further, the Federal Emergency Management Association has categorized central Michigan to be in Seismic Design Category A (Figure 4). Seismic Design Category A is defined as an area in which there is a very small probability of experiencing damaging earth-quake effects.

### **§257.64 – Unstable Areas**

The CCR Rule requires that existing and new CCR landfills, existing and new CCR surface impoundments, and lateral expansions of CCR units not be located in unstable areas (40 CFR §257.64, 2015). The CCR Rule defines an unstable area as a location that is susceptible to natural or human induced events or forces capable of impairing the integrity, including structural components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains (40 CFR §257.53, 2015). The CCR Rule lists minimum factors that must be considered when evaluating whether an area is unstable. These factors include:

- On-site or local soil conditions that may result in significant differential settling;
- On-site or local geologic or geomorphological features; and/or
- On-site or local human-made features or events, both surface and subsurface.

The Erickson Station impoundments have been built on relatively flat ground that is not subject to mass wasting. The poorly-sorted nature of the layered till and alluvium deposits beneath the site is favorable for stable geotechnical conditions with limited potential for differential settling.

Bedrock beneath the subject property consists predominantly of shale and sandstone, materials not susceptible to mineral dissolution and widespread development of karst features.

There are no man-made surface or subsurface features in the proximity of the Erickson Station that are likely to promote instability of the impoundment structures.

Note that the southern embankment of the CWP is adjacent to a railroad right-of-way (ROW, Figure 1). Since construction was completed in 1970, there have been no structural impacts to the embankment from vibrations or runoff from the ROW.

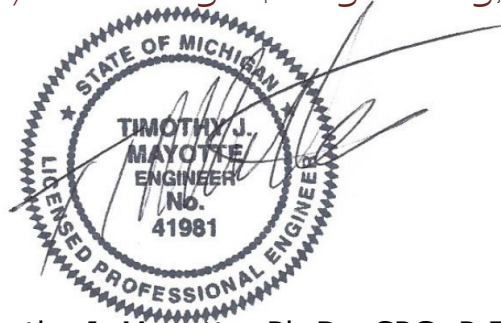
### **Certification**

As a Professional Engineer in the State of Michigan, I certify that this report was prepared in accordance with the requirements of 40 Code of Federal Regulations §257. The data and information presented in this letter report was assembled under my direct control. I further certify that a satisfactory demonstration of compliance with the requirements of 40CFR Sections §257.60, §257.62, §257.63 and §257.64 has been made for the impoundment system at Erickson Station.

This report is intended for the sole purpose of verifying the location restrictions associated with CCR Rule §257 and not intended to be reused by LBWL or others without my specific verification or authorization.

Sincerely,

Mayotte Design & Engineering, PC

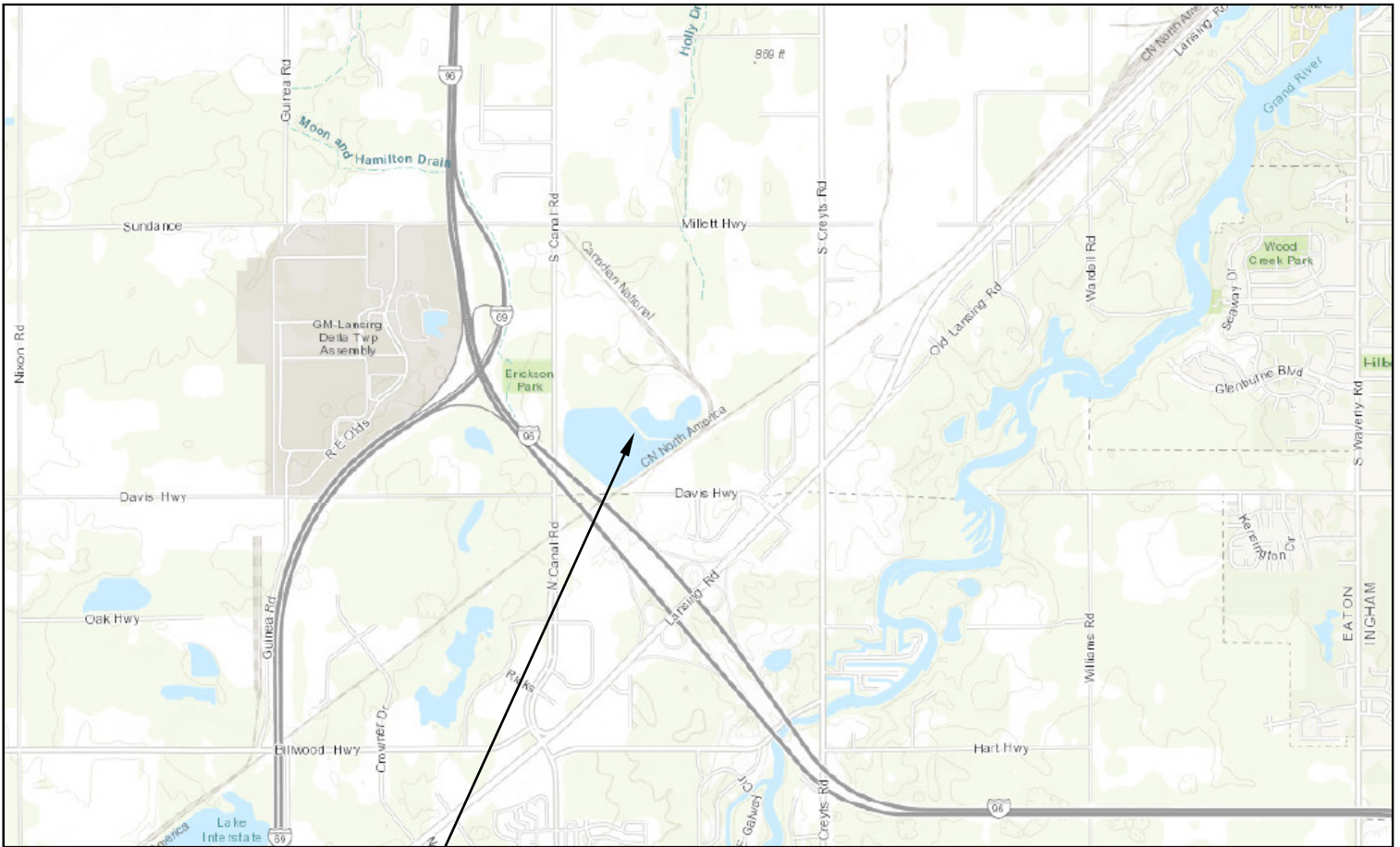


Timothy J. Mayotte, Ph.D., CPG, P.E.  
*Owner/President*  
Michigan Licensed Professional Engineer  
No. 41981

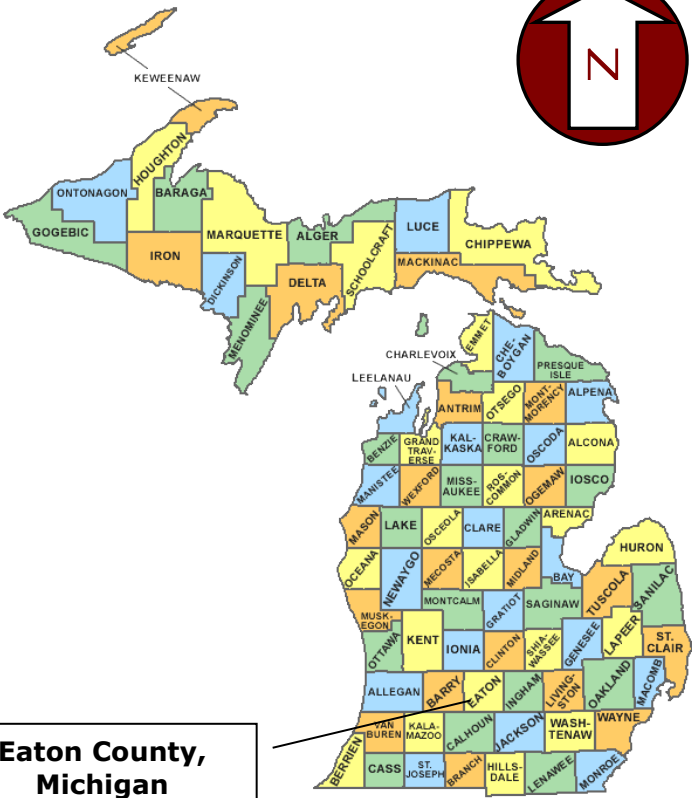
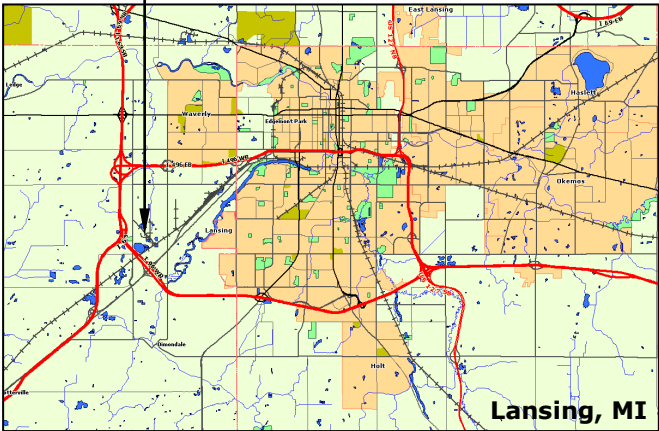
Attachments

cc: Cheryl Loudon - LBWL

## **FIGURES**



**LBWL Erickson Station**  
 3725 Canal Road  
 Delta Township, Michigan



**Eaton County,  
 Michigan**

Copyright 2005 digital-topo-maps.com

**FIGURE 1 - SITE LOCATION**





**NOTES:**

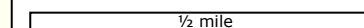
- Map well identifications (in red text) correspond to last 4 to 5 digits of well identification numbers on Welllogic® logs.

Background imagery from MDEQ

**Site Name/Address:**

**LBWL Erickson Station**  
3725 South Canal Road  
Delta Township, Michigan

**Scale:**



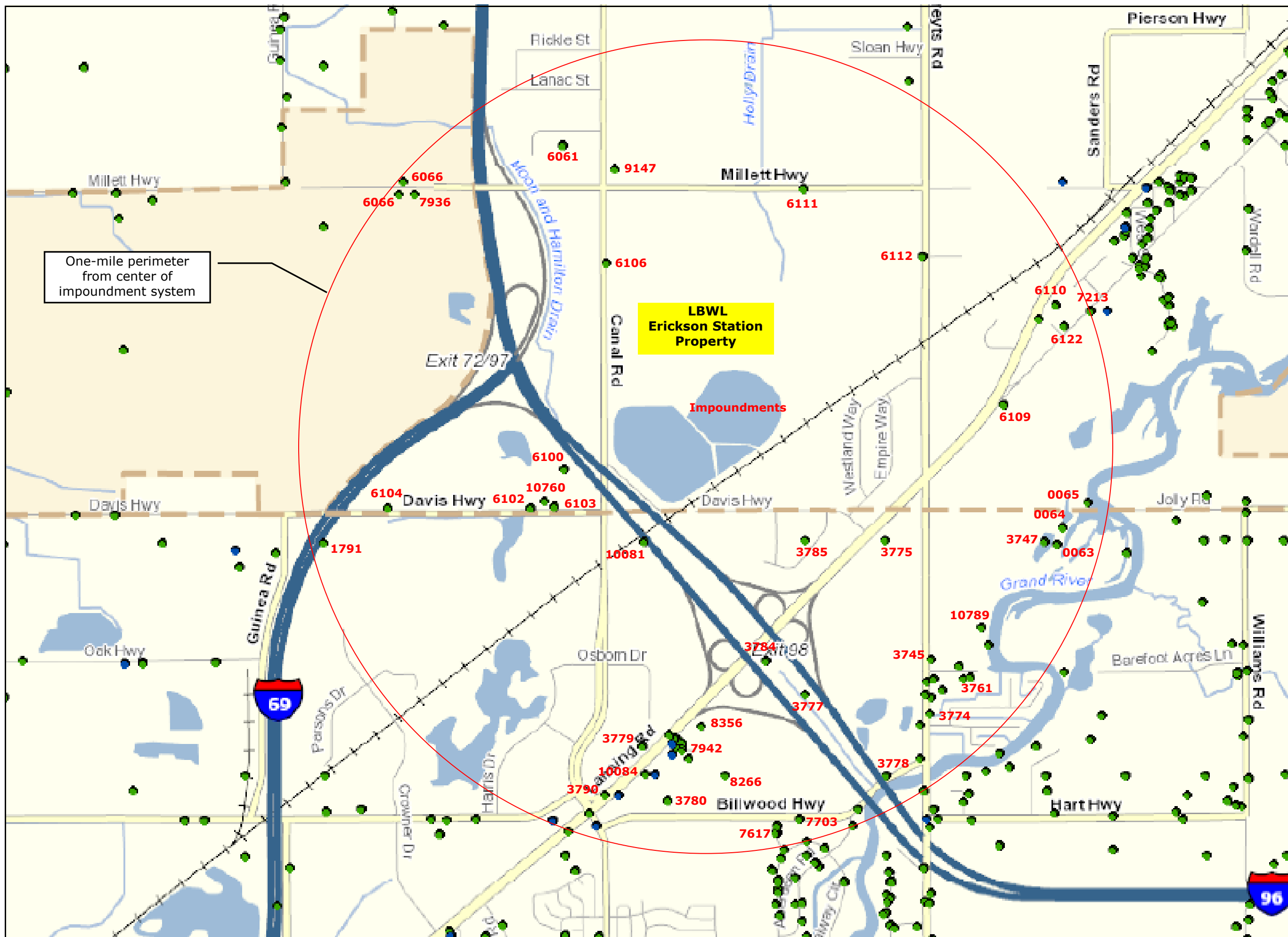
**Date:**

10/9/2018

**Drawn By:**

TJM

**FIGURE 2**  
**Water Well Locations**



One-mile perimeter from center of impoundment system

**LBWL Erickson Station Property**

**Impoundments**





**NOTES:**

- **Soil Borings:**  
 AP-3 (1969)  
 AP-4 (1969)  
 AP-5 (1969)  
 AP-6 (1969)  
 AP-7 (1969)  
 CW-SB-01 (2018)  
 CW-SB-02 (2018)  
 CW-SB-03 (2018)

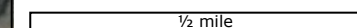
- **Test Pits:**  
 AP-1 (1969)  
 AP-2 (1969)  
 EW-F-1 (2014)  
 EW-F-2 (2014)  
 EW-F-3 (2014)  
 EW-F-4 (2014)  
 EW-F-5 (2014)  
 EW-F-6 (2014)

*Background imagery from Google Earth.*

**Site Name/Address:**

**LBWL Erickson Station**  
 3725 South Canal Road  
 Delta Township, Michigan

**Scale:**



**Date:**  
 10/9/2018

**Drawn By:**  
 TJM

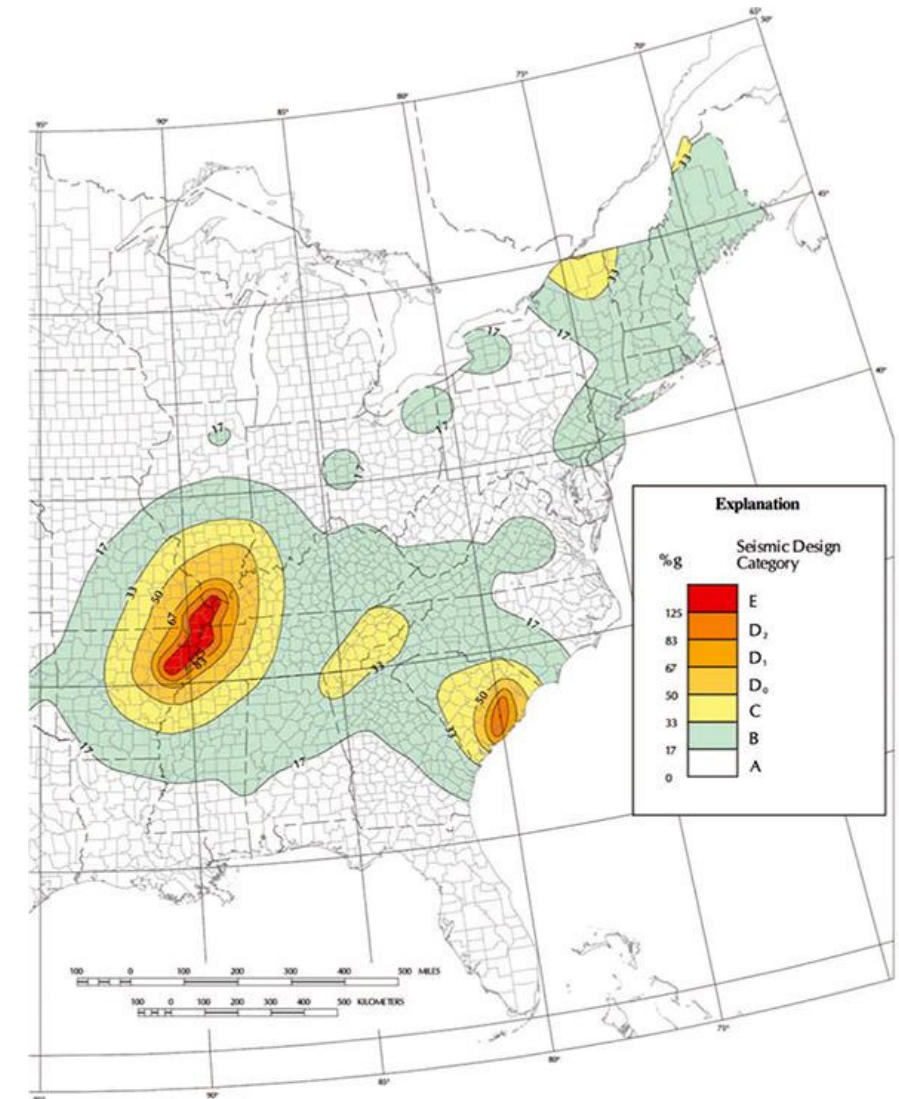
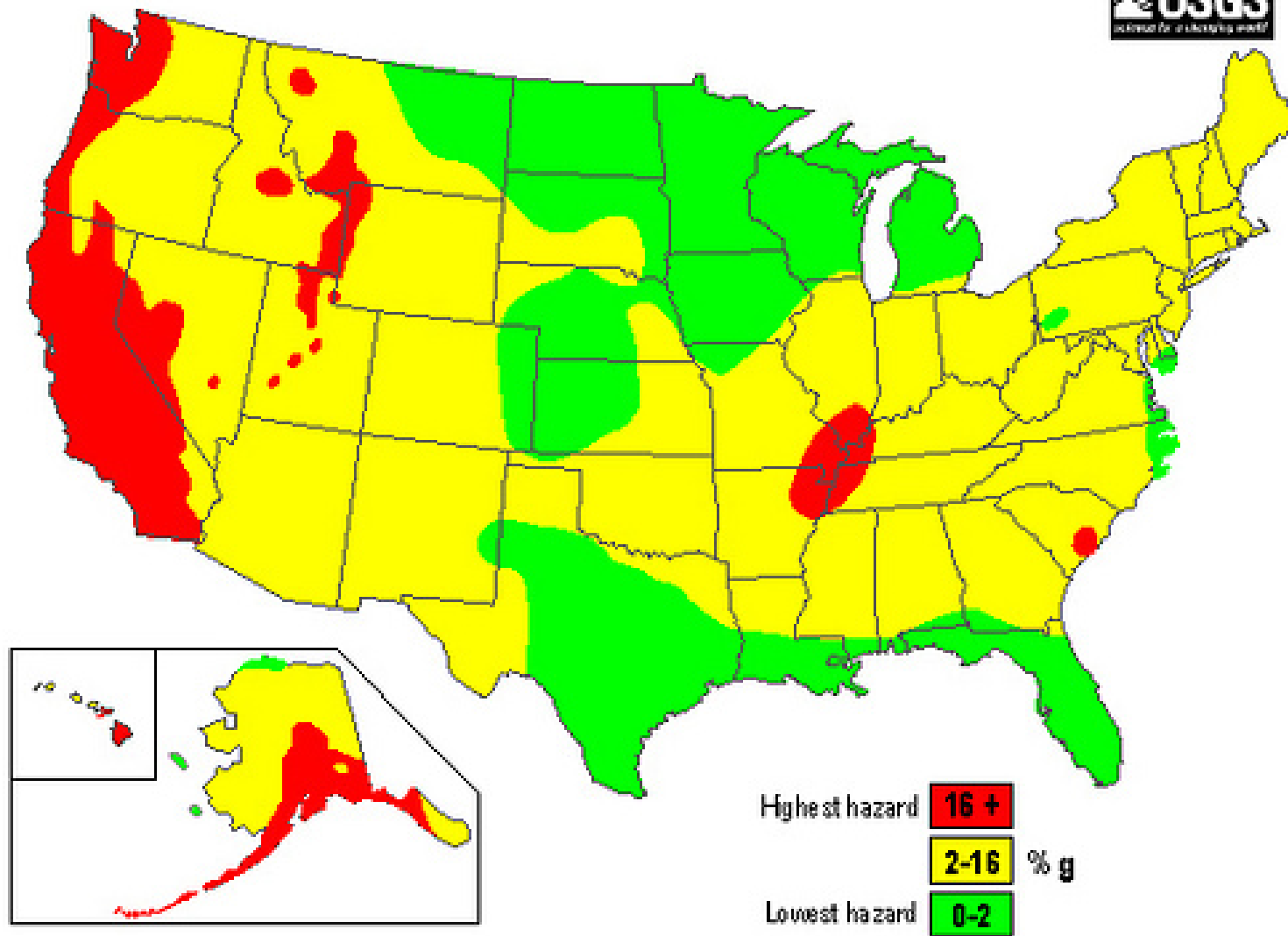
**FIGURE 3**  
**Site Layout**





# National Seismic Hazard Map

Adapted from [http://earthquake.usgs.gov/research/hazmaps/products\\_data/48\\_States/index.php](http://earthquake.usgs.gov/research/hazmaps/products_data/48_States/index.php)



<https://www.fema.gov/earthquake-hazard-maps>

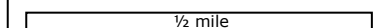
**NOTES:**

- USGS Seismic Hazard Map (left).
- FEMA Seismic Design Map (right).

**Site Name/Address:**

**LBWL Erickson Station**  
 3725 South Canal Road  
 Delta Township, Michigan

**Scale:**



**Date:**  
 10/9/2018

**Drawn By:**  
 TJM

**FIGURE 4**  
**Seismic Hazard Maps**

**ATTACHMENT A**  
**Local Water Well Logs**



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Windsor	
<b>Well ID: 23000000063</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 2	<b>Well Status:</b> Active	<b>WSSN:</b> 3760	<b>Source ID/Well No:</b> BWL WELL 85-01
		<b>Distance and Direction from Road Intersection:</b> WSSN #03760; 2400' W. OF WILLIAMS RD., 675' S OF JOLLY				
		<b>Well Owner:</b> BOARD OF WATER & LIGHT				
<b>Elevation:</b> 836 ft.		<b>Well Address:</b> BWL WELL 85-01 LANSING, MI		<b>Owner Address:</b> 123 W. OTTAWA ST. LANSING, MI 48933		
<b>Latitude:</b> 42.681387						
<b>Longitude:</b> -84.63426						
<b>Method of Collection:</b> Interpolation-Map						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Type I public	<b>Pump Installed:</b> No
<b>Well Depth:</b> 93.00 ft.	<b>Date Completed:</b> 11/21/1963	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> Replacement	<b>Height:</b> 0.00 ft. below grade	<b>Pressure Relief Valve Installed:</b> No
<b>Casing Type:</b> Unknown		
<b>Casing Joint:</b> Unknown		
<b>Casing Fitting:</b> None		
<b>Diameter:</b> 36.00 in. to 35.00 ft. depth		
<b>Borehole:</b>		

<b>Static Water Level:</b> 999.99 ft. Below Grade	<b>Well Yield Test:</b>	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Brown Sand & Gravel Silty	15.00	15.00
			Gray Sand Fine	41.00	56.00
			Clay	1.00	57.00
			Sand & Gravel	18.00	75.00
			Black Hardpan W/Boulders	9.00	84.00
			Gravel Coarse	6.00	90.00
			Hardpan W/Boulders	3.00	93.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	
<b>Screen Diameter:</b> 18.00 in.	<b>Blank:</b> 0.00 ft. Above	
<b>Screen Material Type:</b> Unknown		
<b>Slot</b>	<b>Length</b>	<b>Set Between</b>
0.00	0.00 ft.	0.00 ft. and 90.00 ft.
<b>Fittings:</b> None		

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Unknown	0.00	None	0.00 ft. to 55.00 ft.
<b>Wellhead Completion:</b> Unknown			

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> RUSSEL HOFACRE
<b>Type</b>	<b>Employment:</b> Unknown
None	
<b>Distance</b>	<b>Direction</b>
<b>Contractor Type:</b> Unknown	<b>Reg No:</b>

<b>Abandoned Well Plugged:</b> No	<b>Business Name:</b>
<b>Reason Not Plugged:</b> Unknown	<b>Business Address:</b>

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b> ORIGINAL WELLID# WAS 02001; CONTRACTOR DUNBAR DRILLING
<b>Other Remarks:</b>



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Windsor
<b>Well ID: 23000000064</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 2
		<b>Well Status:</b> Active	<b>WSSN:</b> 3760
<b>Elevation:</b> 837 ft.		<b>Source ID/Well No:</b> BWL WELL 85-02	
<b>Latitude:</b> 42.682167		<b>Distance and Direction from Road Intersection:</b> WSSN #03760; 2325' W OF WILLIAMS RD., 350' S OF JOLLY R	
<b>Longitude:</b> -84.633913		<b>Well Owner:</b> BOARD OF WATER & LIGHT	
<b>Method of Collection:</b> Interpolation-Map		<b>Well Address:</b> BWL WELL 85-02 LANSING, MI	<b>Owner Address:</b> 123 W. OTTAWA ST. LANSING, MI 48933

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Type I public	<b>Pump Installed:</b> No																																											
<b>Well Depth:</b> 85.00 ft.	<b>Date Completed:</b> 1/17/1964	<b>Pressure Tank Installed:</b> No																																											
<b>Well Type:</b> Replacement	<b>Height:</b> 0.00 ft. below grade	<b>Pressure Relief Valve Installed:</b> No																																											
<b>Casing Type:</b> Unknown		<table border="1"> <thead> <tr> <th>Formation Description</th> <th>Thickness</th> <th>Depth to Bottom</th> </tr> </thead> <tbody> <tr><td>Brown Clay</td><td>4.00</td><td>4.00</td></tr> <tr><td>Brown Sand &amp; Gravel</td><td>10.00</td><td>14.00</td></tr> <tr><td>Gray Sand &amp; Gravel</td><td>6.00</td><td>20.00</td></tr> <tr><td>Gray Sand &amp; Gravel</td><td>34.00</td><td>54.00</td></tr> <tr><td>Sand</td><td>18.00</td><td>72.00</td></tr> <tr><td>Sand Very Fine</td><td>13.00</td><td>85.00</td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </tbody> </table>		Formation Description	Thickness	Depth to Bottom	Brown Clay	4.00	4.00	Brown Sand & Gravel	10.00	14.00	Gray Sand & Gravel	6.00	20.00	Gray Sand & Gravel	34.00	54.00	Sand	18.00	72.00	Sand Very Fine	13.00	85.00																					
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<b>Casing Fitting:</b> None																																													
<b>Diameter:</b> 18.00 in. to 36.00 ft. depth																																													
<b>Borehole:</b> 36.00 in. to 0.00 ft. depth																																													
<b>Static Water Level:</b> 999.99 ft. Below Grade	<b>Yield Test Method:</b> Unknown																																												
<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b>																																											
<b>Screen Diameter:</b> 18.00 in.	<b>Blank:</b> 0.00 ft. Above																																												
<b>Screen Material Type:</b> Unknown																																													
<b>Slot</b>	<b>Length</b>																																												
0.00	36.00 ft.																																												
	<b>Set Between</b>																																												
	45.00 ft. and 81.00 ft.																																												
<b>Fittings:</b> None																																													
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown																																												
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>																																										
Unknown	0.00	None	0.00 ft. to 45.00 ft.																																										
<b>Wellhead Completion:</b> Unknown																																													
<b>Nearest Source of Possible Contamination:</b>	<b>Distance</b>	<b>Direction</b>	<b>Drilling Machine Operator Name:</b> RUSSEL HOFACRE																																										
<b>Type</b>			<b>Employment:</b> Unknown																																										
None			<b>Contractor Type:</b> Unknown																																										
<b>Abandoned Well Plugged:</b> No			<b>Reg No:</b>																																										
<b>Reason Not Plugged:</b> Unknown			<b>Business Name:</b>																																										
			<b>Business Address:</b>																																										
<b>Water Well Contractor's Certification</b>																																													
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.																																													
<b>Signature of Registered Contractor</b>			<b>Date</b>																																										
<b>General Remarks:</b> ORIGINAL WELLID# WAS 02002; CONTRACTOR DUNBAR DRILLING																																													
<b>Other Remarks:</b>																																													



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Delta	
<b>Well ID: 230000000065</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 2	<b>Well Status:</b> Active	<b>WSSN:</b> 3760	<b>Source ID/Well No:</b> BWL WELL 85-03
		<b>Distance and Direction from Road Intersection:</b> WSSN #03760; 2025' W OF WILLIAMS RD., 150' S OF JOLLY R				
		<b>Well Owner:</b> BOARD OF WATER & LIGHT				
<b>Elevation:</b> 836 ft.		<b>Well Address:</b> BWL WELL 85-03 LANSING, MI		<b>Owner Address:</b> 123 W. OTTAWA ST. LANSING, MI 48933		
<b>Latitude:</b> 42.683279						
<b>Longitude:</b> -84.632416						
<b>Method of Collection:</b> Interpolation-Map						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Type I public	<b>Pump Installed:</b> No
<b>Well Depth:</b> 105.00 ft.	<b>Date Completed:</b> 5/15/1964	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> Replacement	<b>Height:</b> 0.00 ft. below grade	<b>Pressure Relief Valve Installed:</b> No
<b>Casing Type:</b> Steel - black		
<b>Casing Joint:</b> Unknown		
<b>Casing Fitting:</b> None		
<b>Diameter:</b> 18.00 in. to 72.10 ft. depth		
<b>Borehole:</b>		

<b>Static Water Level:</b> 999.99 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>			
<b>Yield Test Method:</b> Unknown	Sand & Gravel W/Silt	14.00	14.00
	Sand & Gravel	27.00	41.00
	Gravel Coarse	17.00	58.00
	Clay & Stones Hard Dry	22.00	80.00
	Clay Sandy	3.00	83.00
	Sand Fine	2.00	85.00
	Hardpan Coarse	12.00	97.00
	Gravel & Boulders Coarse	8.00	105.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 18.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b> Unknown	
<b>Slot Length Set Between</b>	
0.00 36.00 ft. 67.00 ft. and 103.00 ft.	
<b>Fittings:</b> None	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown
<b>Grouting Material</b>	<b>Bags</b> <b>Additives</b> <b>Depth</b>
Unknown	0.00 None 0.00 ft. to 67.00 ft.

<b>Wellhead Completion:</b> Unknown	<b>Geology Remarks:</b>

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> RUSSELL HOFACRE
<b>Type</b>	<b>Employment:</b> Unknown
None	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
<b>Direction</b>	<b>Reg No:</b>

<b>Abandoned Well Plugged:</b> No	<b>Business Name:</b>
<b>Reason Not Plugged:</b> Unknown	<b>Business Address:</b>
	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

<b>General Remarks:</b> ORIGINAL WELLID# WAS 02003; CONTRACTOR DUNBAR DRILLING;36.6' OF 18
<b>Other Remarks:</b>



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030302004

<b>Tax No:</b> 080002100055	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Windsor			
<b>Well ID: 23000003745</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 2	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> Aquifer: ROCK Well #: 230500204				
<b>Elevation:</b> 858 ft.		<b>Well Owner:</b>				
<b>Latitude:</b> 42.6761989739		<b>Well Address:</b> 7566 CREYTS RD MI			<b>Owner Address:</b>	
<b>Longitude:</b> -84.6419790535						
<b>Method of Collection:</b> Interpolation-Map						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 235.00 ft.	<b>Date Completed:</b> 10/22/1980	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Unknown	<b>Height:</b>	<b>Manufacturer:</b> Unknown	<b>Pump Type:</b> Unknown
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 0.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 158.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 49.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 59.00 ft. after 1.00 hrs. at 28 GPM			
<b>Yield Test Method:</b> Unknown	Sand & Clay	10.00	10.00
	Sand & Clay	13.00	23.00
	Clay	42.00	65.00
	Gravel	4.00	69.00
	Gravel & Clay	39.00	108.00
	Gravel & Clay	26.00	134.00
	Shale	15.00	149.00
	Sandstone W/Shale	6.00	155.00
	Shale	9.00	164.00
	Sandstone W/Shale	52.00	216.00
	Sandstone	19.00	235.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks: (Continued On Page 2)</b>	
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	SAND/CLAY. [10] [28] [10] SAND/CLAY. [13] [28] [23] CLAY. [42] [10] [65]	
<b>Screen Material Type:</b>		GRAVEL. [4] [30] [69] GRAVEL/CLAY. [39] [31] [108] GRAVEL/CLAY. [26] [31]	
<b>Slot</b> <b>Length</b> <b>Set Between</b>		[134] SHALE. [15] [55] [149] SANDSTONE/SHALE. [6] [52] [155] SHALE. [9]	
0.00      0.00 ft.      0.00 ft. and 0.00 ft.		[55] [164] SANDSTONE/SHALE. [52] [52] [216] SANDSTONE. [19] [	
<b>Fittings:</b> None			
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b> <b>Bags</b> <b>Additives</b> <b>Depth</b>			
Other                      0.00      None                      0.00 ft. to 0.00 ft.			
<b>Wellhead Completion:</b> Pitless adapter			

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> Syd Dulaney      02/05/90
<b>Type</b> <b>Distance</b> <b>Direction</b>	<b>Employment:</b> Unknown
Septic tank                      75 ft.                      Southwest	

<b>Abandoned Well Plugged:</b> No	<b>(Continued on page 2)</b>
<b>Reason Not Plugged:</b>	

<b>General Remarks:</b>
<b>Other Remarks:</b> Grouting Material 1:Well grouted material unknown





# Water Well And Pump Record

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

Failure to comply is a misdemeanor.



Import ID: 23030302004

<b>Tax No:</b> 080002100055		<b>Permit No:</b>		<b>County:</b> Eaton		<b>Township:</b> Windsor		
<b>Well ID: 23000003745</b>  <b>Elevation:</b> 858 ft.  <b>Latitude:</b> 42.6761989739  <b>Longitude:</b> -84.6419790535  <b>Method of Collection:</b> Interpolation-Map				<b>Town/Range:</b> 03N 03W	<b>Section:</b> 2	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
				<b>Distance and Direction from Road Intersection:</b> Aquifer: ROCK Well #: 230500204				
				<b>Well Owner:</b>				
				<b>Well Address:</b> 7566 CREYTS RD MI		<b>Owner Address:</b>		

(Continued from Page 1)

Formation Description	Thickness	Depth to Bottom	GEOLOGY REMARKS:
			50] [235]
			<b>Contractor Type:</b> Unknown <b>Reg No:</b> 78-1511
			<b>Business Name:</b>
			<b>Business Address:</b>
			<b>Water Well Contractor's Certification</b>
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.			
<b>Signature of Registered Contractor</b>			<b>Date</b>



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030302006

<b>Tax No:</b> 080002300237	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Windsor			
<b>Well ID: 23000003747</b>  Elevation: 885 ft. Latitude: 42.681555 Longitude: -84.63503 Method of Collection: QQQ - Centroid		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 2	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> Aquifer: saginaw sandstone Well #: 230500206				
		<b>Well Owner:</b>		<b>Well Address:</b> 10275 HART HWY MI		<b>Owner Address:</b>

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 200.00 ft.	<b>Date Completed:</b> 1/12/1983	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Unknown	<b>Height:</b>	<b>Manufacturer:</b> Unknown	<b>Pump Type:</b> Unknown
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 0.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 110.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 40.00 ft. Below Grade <b>Well Yield Test:</b>	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
		Sand & Clay	31.00	31.00
		Sand & Gravel	31.00	62.00
		Gravel & Clay	40.00	102.00
		Sandstone	53.00	155.00
		Sandstone W/Shale	45.00	200.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b> SAND/CLAY. [31] [28] [31] SAND & GRAVEL. [31] [25] [62] GRAVEL/CLAY. [40] [31] [102] SANDSTONE. [53] [50] [155] SANDSTONE/SHALE. [45] [52] [200]	
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above		
<b>Screen Material Type:</b>			
<b>Slot Length Set Between</b> 0.00 0.00 ft. 0.00 ft. and 0.00 ft.			
<b>Fittings:</b> None			
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Other	0.00	None	0.00 ft. to 0.00 ft.
<b>Wellhead Completion:</b> Pitless adapter			

<b>Nearest Source of Possible Contamination:</b>			<b>Drilling Machine Operator Name:</b> Syd Dulaney 02/05/90
<b>Type</b>	<b>Distance</b>	<b>Direction</b>	<b>Employment:</b> Unknown
Septic tank	100 ft.	South	
<b>Abandoned Well Plugged:</b> No			<b>Contractor Type:</b> Unknown <b>Reg No:</b> 34-0383
<b>Reason Not Plugged:</b>			<b>Business Name:</b>
			<b>Business Address:</b>

<b>Water Well Contractor's Certification</b> This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	

**General Remarks:**  
**Other Remarks:** Grouting Material 1:Well grouted material unknown



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030302020

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton		<b>Township:</b> Windsor		
<b>Well ID: 23000003761</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 2	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> 7454 CAROL LANE				
<b>Elevation:</b> 842 ft.		<b>Well Owner:</b> LARRY LAW				
<b>Latitude:</b> 42.6753317178		<b>Well Address:</b>			<b>Owner Address:</b>	
<b>Longitude:</b> -84.6400001749		DIMONDALE, MI 48821			DIMONDALE, MI 48821	
<b>Method of Collection:</b> Loran C						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 180.00 ft.	<b>Well Type:</b> Unknown	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Unknown	<b>Date Completed:</b> 2/2/1982	<b>Manufacturer:</b> Other	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic	<b>Height:</b> 0.00 ft. below grade	<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 35.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 83.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 10.00 ft. Below Grade		<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>	<b>Yield Test Method:</b> Unknown	Sand	15.00	15.00
Pumping level 180.00 ft. after 1.00 hrs. at 30 GPM		Clay	15.00	30.00
		Gravel	40.00	70.00
<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	Sandstone	13.00	83.00
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	Shale W/Sandstone	97.00	180.00
<b>Screen Material Type:</b>				
<b>Slot</b>	<b>Length</b>	<b>Set Between</b>		
0.00	0.00 ft.	0.00 ft. and 0.00 ft.		
<b>Fittings:</b> None				
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown			
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>	
Bentonite slurry	0.00	None	0.00 ft. to 0.00 ft.	

**Geology Remarks:**  
SAND. [15] [20] [15] CLAY. [15] [10] [30] GRAVEL. [40] [30] [70]  
SANDSTONE. [13] [50] [83] SHALE, STREAKS SANDSTONE. [97] [56] [180]

<b>Wellhead Completion:</b> Pitless adapter			<b>Drilling Machine Operator Name:</b> LJT WELL DRILLING
<b>Nearest Source of Possible Contamination:</b>			<b>Employment:</b> Unknown
<b>Type</b>	<b>Distance</b>	<b>Direction</b>	<b>Contractor Type:</b> Unknown
Unknown	0 ft.	Unknown	<b>Reg No:</b> 23-1077
<b>Abandoned Well Plugged:</b> No			<b>Business Name:</b>
<b>Reason Not Plugged:</b>			<b>Business Address:</b>

**Water Well Contractor's Certification**

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

**Signature of Registered Contractor** **Date**

**General Remarks:**

**Other Remarks:** Pump Manufacturer:MCDONALD



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030302033

<b>Tax No:</b> 23080002300080		<b>Permit No:</b>		<b>County:</b> Eaton		<b>Township:</b> Windsor	
<b>Well ID: 23000003774</b>  Elevation: 1899 ft. Latitude: 42.673765 Longitude: -84.642118 Method of Collection: Address Matching-House Number				<b>Town/Range:</b> 03N 03W	<b>Section:</b> 2	<b>Well Status:</b>	<b>WSSN:</b>
				<b>Source ID/Well No:</b>			
<b>Distance and Direction from Road Intersection:</b> 3/8 MI N OF HART HWY ON THE EAST SIDE							
<b>Well Owner:</b> FAY FRANKLIN							
<b>Well Address:</b> 7378 CREYTS RD DIMONDALE, MI 48821				<b>Owner Address:</b> 7378 CREYTS RD DIMONDALE, MI 48821			

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 155.00 ft.	<b>Date Completed:</b> 8/19/1997	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 83.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 90.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 90.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 40.00 ft. Below Grade <b>Well Yield Test:</b> Pumping level 155.00 ft. after 0.50 hrs. at 10 GPM <b>Yield Test Method:</b> Unknown	Formation Description	Thickness	Depth to Bottom
	Sand	18.00	18.00
	Gravel	43.00	61.00
	Clay W/Shale	28.00	89.00
	Shale	27.00	116.00
	Sandstone	39.00	155.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b>	
<b>Slot</b>	<b>Length</b>
0.00	0.00 ft.
<b>Set Between</b>	0.00 ft. and 0.00 ft.
<b>Fittings:</b> None	
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown
<b>Grouting Material</b>	<b>Bags</b>
Bentonite slurry	0.00
<b>Additives</b>	<b>Depth</b>
None	0.00 ft. to 90.00 ft.

<b>Wellhead Completion:</b> Other	<b>Geology Remarks:</b> SAND. [18] [20] [18] GRAVEL. [43] [30] [61] CLAY & SHALE. [28] [10] [89] SHALE. [27] [55] [116] SANDROCK. [39] [54] [155]
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> JOE WEST
<b>Type</b>	<b>Employment:</b> Unknown
Septic tank	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
90 ft.	<b>Reg No:</b> 19-1868
<b>Direction</b>	<b>Business Name:</b>
Northeast	<b>Business Address:</b>

<b>Abandoned Well Plugged:</b> Yes	<b>Water Well Contractor's Certification</b> This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
<b>Casing Removed:</b>	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Wellhead Completion:Approved Pit



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030303004

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Windsor	
<b>Well ID: 23000003775</b>  Elevation: 870 ft. Latitude: 42.681562 Longitude: -84.644809 Method of Collection: QQQ - Centroid		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> Aquifer: ROCK Well #: 230500304				
		<b>Well Owner:</b>		<b>Well Address:</b> 0 5 S-M78,W SID-CREYTS RD MI		<b>Owner Address:</b>

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 300.00 ft.	<b>Date Completed:</b> 1/8/1977	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Unknown	<b>Height:</b>	<b>Manufacturer:</b> Unknown	<b>Pump Type:</b> Unknown
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 0.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 72.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 10.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 50.00 ft. after 0.50 hrs. at 15 GPM			
<b>Yield Test Method:</b> Unknown	Clay	10.00	10.00
	Sand & Clay	25.00	35.00
	Sand & Gravel	37.00	72.00
	Shale	200.00	272.00
	Sandstone	28.00	300.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b> CLAY. [10] [10] [10] SAND/CLAY. [25] [28] [35] SAND & GRAVEL. [37] [25] [72] SHALE. [200] [55] [272] SANDSTONE. [28] [50] [300]	
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above		
<b>Screen Material Type:</b>			
<b>Slot Length Set Between</b>			
0.00 0.00 ft. 0.00 ft. and 0.00 ft.			
<b>Fittings:</b> None			
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Other	0.00	None	0.00 ft. to 0.00 ft.
<b>Wellhead Completion:</b> Pitless adapter			

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> Syd Dulaney	02/05/90
<b>Type</b>	<b>Employment:</b> Unknown	
Septic tank		
<b>Distance</b>	<b>Contractor Type:</b> Unknown	<b>Reg No:</b> 33-0050
55 ft.		
<b>Direction</b>	<b>Business Name:</b>	
North		

<b>Abandoned Well Plugged:</b> No	<b>Business Address:</b>
<b>Reason Not Plugged:</b>	
	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

**General Remarks:**

**Other Remarks:** Grouting Material 1:Well grouted material unknown



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030303006

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Windsor			
<b>Well ID: 23000003777</b>  Elevation: 900 ft. Latitude: 42.674621 Longitude: -84.649708 Method of Collection: QQQ - Centroid		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
		<b>Well Owner:</b> DARIN NARAMOR				
		<b>Well Address:</b> DIMONDALE, MI 48821			<b>Owner Address:</b> DIMONDALE, MI 48821	

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 216.00 ft.	<b>Date Completed:</b> 5/23/1989	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 80.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 88.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 7.80 in. to 88.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 45.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 215.00 ft. after 1.00 hrs. at 40 GPM			
<b>Yield Test Method:</b> Unknown	Sand & Gravel	30.00	30.00
	Gray Clay & Gravel	35.00	65.00
	Black & Gray Shale	5.00	70.00
	Gray Shale	20.00	90.00
	Gray Shale & Sandstone	110.00	200.00
	Black Shale	5.00	205.00
	Black Shale & Sandstone White	11.00	216.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b>	
<b>Slot Length Set Between</b>	
0.00 0.00 ft. 0.00 ft. and 0.00 ft.	
<b>Fittings:</b> None	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown
<b>Grouting Material</b>	<b>Bags Additives Depth</b>
Other	0.00 None 0.00 ft. to 0.00 ft.

<b>Wellhead Completion:</b> Pitless adapter	<b>Geology Remarks:</b> SAND & GRAVEL. [30] [25] [30] GRAY CLAY & GRAVEL. [35] [17] [65] GRAY & BLACK SHALE. [5] [55] [70] GRAY SHALE. [20] [55] [90] GRAY SHALE & SANDSTONE. [110] [56] [200] BLACK SHALE. [5] [55] [205] BLACK SHALE & WHITE SANDSTONE. [11] [56] [216]
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> CORNELL & SONS
<b>Type Distance Direction</b>	<b>Employment:</b> Unknown
Unknown 0 ft. Unknown	<b>Contractor Type:</b> Unknown <b>Reg No:</b> 43-0819

<b>Abandoned Well Plugged:</b> No	<b>Business Name:</b>
<b>Reason Not Plugged:</b>	<b>Business Address:</b>

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Grouting Material 1:Unknown



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030303007

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Windsor		
<b>Well ID: 23000003778</b>  Elevation: 900 ft. Latitude: 42.670986 Longitude: -84.644768 Method of Collection: QQQ - Centroid		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>	
		<b>Distance and Direction from Road Intersection:</b> .5 MI E OF CANAL RD 100' N OF BILLWOOD HWY					
		<b>Well Owner:</b> HOWARD AMMERMAN					
		<b>Well Address:</b> DIMONDALE, MI 49348			<b>Owner Address:</b> DIMONDALE, MI 49348		

<b>Drilling Method:</b> Cable Tool	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 408.00 ft.	<b>Date Completed:</b> 10/6/1975	<b>Pump Installation Date:</b>	<b>HP:</b> 0.33
<b>Well Type:</b> Unknown	<b>Height:</b> 80.00 ft. above grade	<b>Manufacturer:</b> Other	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Unknown	<b>Casing Joint:</b> Threaded & coupled	<b>Model Number:</b>	<b>Pump Capacity:</b> 5 GPM
<b>Casing Fitting:</b> Drive shoe	<b>Diameter:</b> 4.00 in. to 80.00 ft. depth	<b>Drop Pipe Length:</b> 70.00 ft.	<b>Pump Voltage:</b>
<b>Borehole:</b>		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
		<b>Draw Down Seal Used:</b> No	
		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 51.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>		Clay	16.00	16.00
		Clay Sandy	28.00	44.00
		Sand	14.00	58.00
<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	Clay	12.00	70.00
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	Shale	81.00	151.00
<b>Screen Material Type:</b>		Sandstone	4.00	155.00
<b>Slot Length Set Between</b>		Shale	253.00	408.00
0.00 0.00 ft. 0.00 ft. and 0.00 ft.				
<b>Fittings:</b> None				
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown			
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>	
Unknown	0.00	None	0.00 ft. to 0.00 ft.	

**Geology Remarks:**  
CLAY. [16] [10] [16] SANDY CLAY. [28] [13] [44] SAND. [14] [20] [58] CLAY. [12] [10] [70] SHALE. [81] [55] [151] SANDSTONE. [4] [54] [155] SHALE. [253] [55] [408]

<b>Wellhead Completion:</b> Pitless adapter	<b>Drilling Machine Operator Name:</b> RINGLE WELL DRILLING
	<b>Employment:</b> Unknown
<b>Nearest Source of Possible Contamination:</b>	<b>Contractor Type:</b> Unknown
<b>Type</b>	<b>Reg No:</b>
<b>Distance</b>	<b>Business Name:</b>
<b>Direction</b>	<b>Business Address:</b>
Sewer line 70 ft. North	
<b>Abandoned Well Plugged:</b> No	<b>Water Well Contractor's Certification</b>
<b>Reason Not Plugged:</b>	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

**General Remarks:**  
**Other Remarks:** Pump Manufacturer:F. E. MYERS



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030303008

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Windsor		
<b>Well ID: 23000003779</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>	
		<b>Distance and Direction from Road Intersection:</b> 1/4 MI NE OF CANAL ON 78 E SIDE					
<b>Elevation:</b> 900 ft.		<b>Well Owner:</b> DONS TRUCK STOP					
<b>Latitude:</b> 42.6723328466		<b>Well Address:</b>			<b>Owner Address:</b>		
<b>Longitude:</b> -84.6596669153		DIMONDALE, MI 49348			DIMONDALE, MI 49348		
<b>Method of Collection:</b> Loran C							

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Other	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 180.00 ft.	<b>Date Completed:</b>	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Unknown	<b>Height:</b>	<b>Manufacturer:</b> Other	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 84.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 90.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 50.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>			
	Clay	30.00	30.00
	Sand & Clay	50.00	80.00
	Shale & Sandstone	100.00	180.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b>	
<b>Slot</b>	<b>Length</b>
0.00	0.00 ft.
<b>Set Between</b>	0.00 ft. and 0.00 ft.
<b>Fittings:</b> None	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Other	0.00	None	0.00 ft. to 0.00 ft.
<b>Geology Remarks:</b> CLAY. [30] [10] [30] SAND AND CLAY. [50] [27] [80] SHALE & SAND ROCK. [100] [56] [180]			

<b>Wellhead Completion:</b> Pitless adapter
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<b>Nearest Source of Possible Contamination:</b>			<b>Drilling Machine Operator Name:</b> KLEINFELT
<b>Type</b>	<b>Distance</b>	<b>Direction</b>	<b>Employment:</b> Unknown
Sewer line	100 ft.	Northwest	
<b>Abandoned Well Plugged:</b> No			<b>Contractor Type:</b> Unknown
<b>Reason Not Plugged:</b>			<b>Reg No:</b> 23-0107
			<b>Business Name:</b>
			<b>Business Address:</b>

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Well Use:Commercial, Grouting Material 1:Unknown, Pump Manufacturer:RAPIDAYTON





# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030303009

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton		<b>Township:</b> Windsor		
<h2 style="margin: 0;">Well ID: 23000003780</h2> <p><b>Elevation:</b> 898 ft. <b>Latitude:</b> 42.6698318423 <b>Longitude:</b> -84.6581701931 <b>Method of Collection:</b> Loran C</p>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> LAST HOUSE ON N SIDE OF PATS DRIVE W END OF ROAD				
		<b>Well Owner:</b> DAVID BYERS				
		<b>Well Address:</b> 7099 PATS DR DIMONDALE, MI 48821			<b>Owner Address:</b> 4601 PARES RD DIMONDALE, MI 48821	

<p><b>Drilling Method:</b> Rotary <b>Well Depth:</b> 182.00 ft. <b>Well Type:</b> Replacement <b>Casing Type:</b> PVC plastic <b>Casing Joint:</b> Unknown <b>Casing Fitting:</b> Drive shoe  <b>Diameter:</b> 5.00 in. to 119.00 ft. depth  <b>Borehole:</b> 7.80 in. to 119.00 ft. depth</p>	<p><b>Well Use:</b> Household <b>Date Completed:</b> 3/16/1989 <b>Pump Installed:</b> Yes <b>Pump Installation Date:</b> <b>Manufacturer:</b> Red Jacket <b>Model Number:</b> <b>Drop Pipe Length:</b> 105.00 ft. <b>Drop Pipe Diameter:</b> <b>Draw Down Seal Used:</b> No <b>Pump Installation Only:</b> No <b>HP:</b> 0.50 <b>Pump Type:</b> Submersible <b>Pump Capacity:</b> 0 GPM <b>Pump Voltage:</b> <b>Drilling Record ID:</b> <b>Pressure Tank Installed:</b> No <b>Pressure Relief Valve Installed:</b> No</p>
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<p><b>Static Water Level:</b> 57.00 ft. Below Grade <b>Well Yield Test:</b> Pumping level 0.00 ft. after 0.00 hrs. at 30 GPM <b>Yield Test Method:</b> Unknown</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:70%;">Formation Description</th> <th style="width:10%;">Thickness</th> <th style="width:20%;">Depth to Bottom</th> </tr> </thead> <tbody> <tr> <td>Red Clay</td> <td>15.00</td> <td>15.00</td> </tr> <tr> <td>Gray Clay &amp; Gravel</td> <td>58.00</td> <td>73.00</td> </tr> <tr> <td>Black Shale Soft</td> <td>43.00</td> <td>116.00</td> </tr> <tr> <td>White Sandstone W/Cobbles Black</td> <td>66.00</td> <td>182.00</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Formation Description	Thickness	Depth to Bottom	Red Clay	15.00	15.00	Gray Clay & Gravel	58.00	73.00	Black Shale Soft	43.00	116.00	White Sandstone W/Cobbles Black	66.00	182.00																																	
Formation Description	Thickness	Depth to Bottom																																															
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Black Shale Soft	43.00	116.00																																															
White Sandstone W/Cobbles Black	66.00	182.00																																															

<p><b>Screen Installed:</b> Yes <b>Screen Diameter:</b> 0.00 in. <b>Screen Material Type:</b> <b>Slot Length Set Between:</b> 0.00 0.00 ft. 0.00 ft. and 0.00 ft. <b>Fittings:</b> None</p>	<p><b>Filter Packed:</b> No <b>Blank:</b> 0.00 ft. Above <b>Grouting Method:</b> Unknown <b>Grouting Material:</b> Bentonite slurry <b>Bags:</b> 0.00 <b>Additives:</b> None <b>Depth:</b> 0.00 ft. to 0.00 ft.</p>
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<p><b>Well Grouted:</b> Yes <b>Wellhead Completion:</b> Pitless adapter</p>	<p><b>Geology Remarks:</b> RED CLAY. [15] [10] [15] GREY CLAY &amp; GRAVEL. [58] [17] [73] SOFT BLACK SHALE. [43] [55] [116] WHITE SANDSTONE WITH STRIPS OF BLACK ROCK. [66] [53] [182]</p>
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<p><b>Nearest Source of Possible Contamination:</b> <b>Type:</b> Unknown <b>Distance:</b> 0 ft. <b>Direction:</b> Unknown</p>	<p><b>Drilling Machine Operator Name:</b> VANWORMER WELL DRILLING <b>Employment:</b> Unknown <b>Contractor Type:</b> Unknown <b>Reg No:</b> 19-0676</p>
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<p><b>Abandoned Well Plugged:</b> Yes  <b>Casing Removed:</b></p>	<p><b>Business Name:</b> <b>Business Address:</b> <b>Water Well Contractor's Certification</b> This well was drilled under my supervision and this report is true to the best of my knowledge and belief.  <b>Signature of Registered Contractor</b> <span style="float:right"><b>Date</b></span></p>
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<b>General Remarks:</b>	
<b>Other Remarks:</b>	



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030303034

<b>Tax No:</b> 23080003400015	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Windsor			
<b>Well ID: 23000003784</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> 300' W OF CREYTS RD				
<b>Elevation:</b> 1899 ft.		<b>Well Owner:</b> LULU GARRISON				
<b>Latitude:</b> 42.676156		<b>Well Address:</b> 7489 CREYTS RD LANSING, MI 48917		<b>Owner Address:</b> 7489 CREYTS RD LANSING, MI 48917		
<b>Longitude:</b> -84.652162						
<b>Method of Collection:</b> Section - Centroid						

<b>Drilling Method:</b> Cable Tool	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 175.00 ft.	<b>Date Completed:</b> 4/22/1994	<b>Pump Installation Date:</b>	<b>HP:</b> 2.00
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 30 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 100.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 170.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 34.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 100.00 ft. after 0.50 hrs. at 45 GPM		Clay & Sand	18.00	18.00
		Gravel	4.00	22.00
		Sandstone	10.00	32.00
		Gravel	4.00	36.00
		Shale	14.00	50.00
		Gravel	3.00	53.00
		Shale	117.00	170.00
		Green Sandstone	5.00	175.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b>	
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	CLAY & SAND. [18] [16] [18] GRAVEL. [4] [30] [22] SANDROCK. [10] [54] [32] GRAVEL. [4] [30] [36] SHALE. [14] [55] [50] GRAVEL. [3] [30] [53] SHALE. [117] [55] [170] GREEN SANDROCK. [5] [54] [175]	
<b>Screen Material Type:</b>	<b>Set Between</b>		
<b>Slot</b>	<b>Length</b>		
0.00	0.00 ft.		
<b>Fittings:</b> None			

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>
Bentonite slurry	0.00	None
		<b>Depth</b>
		0.00 ft. to 25.00 ft.
<b>Wellhead Completion:</b> Other		

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> STEVE
<b>Type</b>	<b>Employment:</b> Unknown
Septic tank	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
60 ft.	<b>Reg No:</b> 19-1733
<b>Direction</b>	<b>Business Name:</b>
South	<b>Business Address:</b>

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Wellhead Completion: Approved Pit



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030303035

<b>Tax No:</b> 23080050800700	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Windsor			
<b>Well ID: 23000003785</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> 3/4 M E OF CANAL HWY ON THE SOUTH SIDE				
<b>Elevation:</b> 1899 ft.		<b>Well Owner:</b> JOHN WILLIAMSON				
<b>Latitude:</b> 42.681558		<b>Well Address:</b> 9744 BILLWOOD HWY LANSING, MI 48917		<b>Owner Address:</b> 9744 BILLWOOD HWY LANSING, MI 48917		
<b>Longitude:</b> -84.649734						
<b>Method of Collection:</b> QQQ - Centroid						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 231.00 ft.	<b>Date Completed:</b> 8/23/1994	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Other	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 15 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 60.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 80.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 80.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 25.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 0.00 ft. after 0.00 hrs. at 40 GPM			
<b>Yield Test Method:</b> Unknown	Clay & Stones	28.00	28.00
	Clay & Sand	37.00	67.00
	Shale	11.00	78.00
	Shale & Sandstone	8.00	86.00
	Shale	23.00	109.00
	Lithology Unknown	19.00	128.00
	Shale	51.00	171.00
	Shale & Sandstone	13.00	172.00
	Shale	18.00	210.00
	Sandstone	21.00	231.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b>	
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	CLAY & STONES. [28] [10] [28] CLAY & SAND. [37] [16] [67] SHALE. [11] [55]	
<b>Screen Material Type:</b>		[78] SHALE & SANDROCK. [8] [56] [86] SHALE. [23] [55] [109] . [19] [0] [128]	
<b>Slot</b> <b>Length</b> <b>Set Between</b>		SHALE. [51] [55] [171] SHALE & SANDROCK. [13] [56] [172] SHALE. [18] [55]	
0.00      0.00 ft.      0.00 ft. and 0.00 ft.		[210] SANDROCK. [21] [54] [231]	
<b>Fittings:</b> Neoprene packer			
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b> <b>Bags</b> <b>Additives</b> <b>Depth</b>			
Bentonite slurry    0.00    None    0.00 ft. to 80.00 ft.			
<b>Wellhead Completion:</b> Pitless adapter			

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> STEVE PUNG
<b>Type</b> <b>Distance</b> <b>Direction</b>	<b>Employment:</b> Unknown
Septic tank      50 ft.      South	<b>Contractor Type:</b> Unknown <b>Reg No:</b> 19-1868
	<b>Business Name:</b>
	<b>Business Address:</b>
	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b> <b>Date</b>

**General Remarks:**

**Other Remarks:** Pump Manufacturer:F. E. MYERS



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030304002

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Windsor	
<b>Well ID: 23000003790</b>  Elevation: 895 ft. Latitude: 42.6701061707 Longitude: -84.6620274817 Method of Collection: Interpolation-Map		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 4	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> Aquifer: ROCK Well #: 230500402				
		<b>Well Owner:</b>		<b>Well Address:</b> 3 BLKS N-M78,1 BLK W-CANAL MI		<b>Owner Address:</b>

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 260.00 ft.	<b>Date Completed:</b> 5/22/1978	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Unknown	<b>Height:</b>	<b>Manufacturer:</b> Unknown	<b>Pump Type:</b> Unknown
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b> 14 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 0.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 176.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 32.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>		Gravel & Clay	34.00	34.00
		Sand & Clay	56.00	90.00
		Gravel & Clay	40.00	130.00
		Gravel & Clay	32.00	162.00
		Sandstone W/Shale	78.00	240.00
		Sandstone	20.00	260.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b>		
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	GRAVEL/CLAY. [34] [31] [34] SAND/CLAY. [56] [28] [90] GRAVEL/CLAY. [40] [31] [130] GRAVEL/CLAY. [32] [31] [162] SANDSTONE/SHALE. [78] [52] [240] SANDSTONE. [20] [50] [260]		
<b>Screen Material Type:</b>	<b>Set Between</b>			
<b>Slot</b>	<b>Length</b>			
0.00	0.00 ft.	0.00 ft. and 0.00 ft.		
<b>Fittings:</b> None				
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown			
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>	
Other	0.00	None	0.00 ft. to 0.00 ft.	
<b>Wellhead Completion:</b> Pitless adapter				

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> Syd Dulaney	02/05/90
<b>Type</b>	<b>Distance</b>	<b>Direction</b>
Sewer line	100 ft.	East
<b>Employment:</b> Unknown	<b>Contractor Type:</b> Unknown	<b>Reg No:</b> 34-0383
<b>Business Name:</b>	<b>Business Address:</b>	

<b>Abandoned Well Plugged:</b> No	<b>Water Well Contractor's Certification</b>	
<b>Reason Not Plugged:</b>	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
	<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Grouting Material 1:Well grouted material unknown



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23030304003

<b>Tax No:</b> 23070011400061	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Windsor			
<b>Well ID: 23000003791</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 4	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
<b>Elevation:</b> 1899 ft.		<b>Distance and Direction from Road Intersection:</b> 1/4 MI S OF DAVIS HWY ON EAST SIDE				
<b>Latitude:</b> 42.681461		<b>Well Owner:</b> RODNEY SUTFIN				
<b>Longitude:</b> -84.679251		<b>Well Address:</b> 7852 GUINEA RD DIMONDALE, MI 48821		<b>Owner Address:</b> 7852 GUINEA RD DIMONDALE, MI 48821		
<b>Method of Collection:</b> QQQ - Centroid						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 145.00 ft.	<b>Date Completed:</b> 11/19/1998	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Other	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Welded		<b>Drop Pipe Length:</b> 60.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 105.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 105.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 22.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 0.00 ft. after 0.00 hrs. at 40 GPM			
<b>Yield Test Method:</b> Unknown	Brown Clay	21.00	21.00
	Gray Clay & Stones Sandy	53.00	74.00
	Gravel Cemented	13.00	87.00
	Shale & Sandstone	31.00	118.00
	Sandstone	27.00	145.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b> BROWN CLAY. [21] [11] [21] GREY SANDY CLAY STONES. [53] [13] [74] GRAVEL CEMENTED. [13] [30] [87] SHALE & SANDROCK. [31] [55] [118] SANDROCK. [27] [54] [145]
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	
<b>Screen Material Type:</b>		
<b>Slot</b>	<b>Length</b>	<b>Set Between</b>
0.00	0.00 ft.	0.00 ft. and 0.00 ft.
<b>Fittings:</b> None		
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>
Bentonite slurry	0.00	None
		<b>Depth</b>
		0.00 ft. to 105.00 ft.
<b>Wellhead Completion:</b> Other		

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> MATT EWING
<b>Type</b>	<b>Employment:</b> Unknown
Septic tank	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
50 ft.	<b>Reg No:</b> 23-1612
<b>Direction</b>	<b>Business Name:</b>
Southwest	<b>Business Address:</b>
	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

**General Remarks:**

**Other Remarks:** Wellhead Completion:Approved Pit, Pump Manufacturer:F. E. MYERS



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040328005

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Delta			
<b>Well ID: 23000006061</b>  Elevation: 880 ft. Latitude: 42.699369 Longitude: -84.664557 Method of Collection: QQQ - Centroid		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 28	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
		<b>Well Owner:</b> LARVE W STUCK				
		<b>Well Address:</b> 7900 E MT HOPE RD LANSING, MI 48917		<b>Owner Address:</b> 7900 E MT HOPE RD LANSING, MI 48917		

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 200.00 ft.	<b>Date Completed:</b> 5/27/1970	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b> 0.00 ft. below grade	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Steel - black	<b>Casing Joint:</b> Threaded & coupled	<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Fitting:</b> Drive shoe	<b>Diameter:</b> 4.00 in. to 104.00 ft. depth	<b>Drop Pipe Length:</b> 63.00 ft.	<b>Pump Voltage:</b>
<b>Borehole:</b>		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
		<b>Draw Down Seal Used:</b> No	
		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 35.00 ft. Below Grade <b>Well Yield Test:</b> Pumping level 50.00 ft. after 1.00 hrs. at 30 GPM <b>Yield Test Method:</b> Unknown	Formation Description	Thickness	Depth to Bottom
	Clay W/Sand	95.00	95.00
	Shale	5.00	100.00
	White Sandstone	6.00	106.00
	Gray Shale	19.00	125.00
	White Sandstone	75.00	200.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b>	
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	CLAY WITH SAND. [95] [16] [95] SHALE. [5] [55] [100] WHITE SANDSTONE. [6] [50] [106] GRAY SHALE. [19] [55] [125] WHITE SANDSTONE. [75] [50] [200]	
<b>Screen Material Type:</b>	<b>Set Between</b>		
<b>Slot</b>	<b>Length</b>		
0.00	0.00 ft.		
	0.00 ft. and 0.00 ft.		
<b>Fittings:</b> None			
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Bentonite slurry	0.00	None	0.00 ft. to 104.00 ft.
<b>Wellhead Completion:</b> Pitless adapter			

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> GILBERT & INGALLS
<b>Type</b>	<b>Employment:</b> Unknown
Unknown	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
0 ft.	<b>Reg No:</b> 19-0408
<b>Direction</b>	<b>Business Name:</b>
Unknown	<b>Business Address:</b>
	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

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



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040328010

<b>Tax No:</b> 23040028300060	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Delta			
<b>Well ID: 23000006066</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 28	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
<b>Elevation:</b> 1899 ft.		<b>Well Owner:</b> GEORGE PARISH				
<b>Latitude:</b> 42.697734		<b>Well Address:</b> 8200 MILLETT HWY LANSING, MI 48917		<b>Owner Address:</b> 8200 MILLETT HWY LANSING, MI 48917		
<b>Longitude:</b> -84.67434						
<b>Method of Collection:</b> Address Matching-House Number						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 200.00 ft.	<b>Date Completed:</b> 2/22/1996	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Welded		<b>Drop Pipe Length:</b> 60.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 85.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 22.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 60.00 ft. after 0.50 hrs. at 25 GPM		Clay & Sand	30.00	30.00
		Clay	32.00	62.00
		Shale	53.00	115.00
<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	Sandstone & Shale	25.00	140.00
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	Shale	30.00	170.00
<b>Screen Material Type:</b>		Shale & Sandstone	30.00	200.00
<b>Slot</b>	<b>Length</b>			
0.00	0.00 ft.			
	<b>Set Between</b>			
	0.00 ft. and 0.00 ft.			
<b>Fittings:</b> None				
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown			
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>	
Other	0.00	None	0.00 ft. to 85.00 ft.	

<b>Wellhead Completion:</b> Pitless adapter	<b>Geology Remarks:</b> CLAY & SAND. [30] [16] [30] CLAY. [32] [10] [62] SHALE. [53] [55] [115] SANDROCK & SHALE. [25] [54] [140] SHALE. [30] [55] [170] SHALE & SANDROCK. [30] [56] [200]
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> STEVE
<b>Type</b>	<b>Employment:</b> Unknown
Septic tank	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
65 ft.	<b>Reg No:</b> 19-1733
<b>Direction</b>	<b>Business Name:</b>
West	<b>Business Address:</b>

<b>Abandoned Well Plugged:</b> No	<b>Water Well Contractor's Certification</b>
<b>Reason Not Plugged:</b>	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.

<b>General Remarks:</b>	<b>Signature of Registered Contractor</b>	<b>Date</b>
<b>Other Remarks:</b> Grouting Material 1:Unknown		



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040333001

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Delta		
<b>Well ID: 23000006099</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 33	<b>Well Status:</b>	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b> 870 ft. <b>Latitude:</b> 42.697166068 <b>Longitude:</b> -84.6746695607 <b>Method of Collection:</b> Loran C		<b>Distance and Direction from Road Intersection:</b>			
<b>Well Owner:</b> THERRIAN BROS BLDRS					
<b>Well Address:</b> 8407 W MILLETT LANSING, MI 48917			<b>Owner Address:</b> 7730 W ST JOE GRAND LEDGE, MI 48837		

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 191.00 ft.	<b>Date Completed:</b> 9/9/1970	<b>Pump Installation Date:</b>	<b>HP:</b> 0.75
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Aermotor	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Steel - black		<b>Model Number:</b>	<b>Pump Capacity:</b> 15 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 42.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 62.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 25.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 0.00 ft. after 0.00 hrs. at 30 GPM		Clay	15.00	15.00
		Sand	25.00	40.00
		Hardpan	15.00	55.00
<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	Shale Soft	6.00	61.00
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	Shale	99.00	160.00
<b>Screen Material Type:</b>		Unidentified Consolidated Fm	31.00	191.00
<b>Slot Length Set Between</b>				
0.00 0.00 ft. 0.00 ft. and 0.00 ft.				
<b>Fittings:</b> None				
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown			
<b>Grouting Material:</b> Other	<b>Bags:</b> 0.00			
	<b>Additives:</b> None			
	<b>Depth:</b> 0.00 ft. to 0.00 ft.			

<b>Wellhead Completion:</b> Pitless adapter	<b>Geology Remarks:</b> CLAY. [15] [10] [15] SAND. [25] [20] [40] HARD PAN. [15] [18] [55] SOFT SHALE. [6] [55] [61] SHALE. [99] [55] [160] ROCK. [31] [59] [191]
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> DAILY & JACKSON
<b>Type:</b> Septic tank	<b>Employment:</b> Unknown
<b>Distance:</b> 60 ft.	<b>Contractor Type:</b> Unknown
<b>Direction:</b> Unknown	<b>Reg No:</b> 33-0390

<b>Business Name:</b>	<b>Business Address:</b>
<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Grouting Material 1:Well grouted material unknown





# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040333002

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Delta	
<b>Well ID: 23000006100</b>  Elevation: 1899 ft. Latitude: 42.68481 Longitude: -84.664522 Method of Collection: QQQ - Centroid		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 33	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
		<b>Well Owner:</b> JAMES GADSON				
<b>Well Address:</b> 8627 N CANAL RD LANSING, MI 48917				<b>Owner Address:</b> 8627 N CANAL RD LANSING, MI 48917		

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> No
<b>Well Depth:</b> 280.00 ft.	<b>Date Completed:</b>	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> New		<b>Pressure Relief Valve Installed:</b> No
<b>Casing Type:</b> Steel - black	<b>Height:</b>	
<b>Casing Joint:</b> Threaded & coupled		
<b>Casing Fitting:</b> Drive shoe		
<b>Diameter:</b> 4.00 in. to 108.00 ft. depth		
<b>Borehole:</b>		

<b>Static Water Level:</b> 21.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>		Sand & Clay	40.00	40.00
		Shale	240.00	280.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b>	
<b>Slot</b>	<b>Length</b>
0.00	0.00 ft.
<b>Set Between</b>	
	0.00 ft. and 0.00 ft.
<b>Fittings:</b> None	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown
<b>Grouting Material</b>	<b>Bags</b>
Other	0.00
<b>Additives</b>	<b>Depth</b>
None	0.00 ft. to 0.00 ft.
<b>Geology Remarks:</b> SAND AND CLAY. [40] [16] [40] SHALE. [240] [55] [280]	

<b>Wellhead Completion:</b> 12 inches above grade
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> KLEINFELT
<b>Type</b>	<b>Employment:</b> Unknown
Sewer line	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
60 ft.	<b>Reg No:</b> 23-0107
<b>Direction</b>	<b>Business Name:</b>
West	<b>Business Address:</b>

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Grouting Material 1:Well grouted material unknown



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040333004

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Delta			
<b>Well ID: 23000006102</b>  Elevation: 1899 ft. Latitude: 42.683068 Longitude: -84.666539 Method of Collection: Address Matching-House Number		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 33	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
		<b>Well Owner:</b> DONALD CARNS				
<b>Well Address:</b> 8745 DAVIS HWY LANSING, MI 48917			<b>Owner Address:</b> 8745 DAVIS HWY LANSING, MI 48917			

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 325.00 ft.	<b>Date Completed:</b> 8/29/1995	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Welded		<b>Drop Pipe Length:</b> 40.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 120.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.50 in. to 120.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 12.00 ft. Below Grade <b>Well Yield Test:</b> Pumping level 0.00 ft. after 0.00 hrs. at 80 GPM <b>Yield Test Method:</b> Unknown	Formation Description	Thickness	Depth to Bottom
	Brown Clay	10.00	10.00
	Gray Sand	25.00	35.00
	Gray Clay W/Gravel	55.00	90.00
	Gray Shale	17.00	107.00
	Black Shale	1.00	108.00
	White Shale & Sandstone	2.00	110.00
	Gray Shale & Sandstone	70.00	180.00
	Sandstone	10.00	190.00
	Black & Gray Shale	20.00	210.00
	Sandstone	5.00	215.00
	Black & Gray Shale	25.00	240.00
	Sandstone W/Shale	85.00	325.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b>	
<b>Slot</b> <b>Length</b> <b>Set Between</b>	
0.00      0.00 ft.      0.00 ft. and 0.00 ft.	
<b>Fittings:</b> None	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown
<b>Grouting Material</b> <b>Bags</b> <b>Additives</b> <b>Depth</b>	
Bentonite slurry    0.00    None    0.00 ft. to 120.00 ft.	
<b>Wellhead Completion:</b> Pitless adapter	

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> GREG MEAD
<b>Type</b> <b>Distance</b> <b>Direction</b>	<b>Employment:</b> Unknown
Septic tank      80 ft.      East	

**(Continued on page 2)**

<b>General Remarks:</b> 12" ABOVE GRADE
<b>Other Remarks:</b>





# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040333005

<b>Tax No:</b> 23040033400090	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Delta	
<b>Well ID: 23000006103</b>  Elevation: 1899 ft. Latitude: 42.683076 Longitude: -84.665084 Method of Collection: Address Matching-House Number		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 33	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
		<b>Well Owner:</b> BEN PARKER				
<b>Well Address:</b> 8833 DAVIS HWY LANSING, MI 48917				<b>Owner Address:</b> 8833 DAVIS HWY LANSING, MI 48917		

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 200.00 ft.	<b>Date Completed:</b> 11/2/1996	<b>Pump Installation Date:</b>	<b>HP:</b> 0.75
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 18 GPM
<b>Casing Joint:</b> Welded		<b>Drop Pipe Length:</b> 60.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 104.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 7.78 in. to 104.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 29.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 0.00 ft. after 0.00 hrs. at 35 GPM			
<b>Yield Test Method:</b> Unknown	Clay	52.00	52.00
	Gravel	2.00	54.00
	Clay	22.00	76.00
	Lithology Unknown	20.00	98.00
	Shale	104.00	200.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>Geology Remarks:</b>	
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	CLAY. [52] [10] [52] GRAVEL. [2] [20] [54] CLAY. [22] [10] [76] TILL. [20] [19] [98] SHALE. [104] [55] [200]	
<b>Screen Material Type:</b>			
<b>Slot</b>	<b>Length</b>	<b>Set Between</b>	
0.00	0.00 ft.	0.00 ft. and 0.00 ft.	
<b>Fittings:</b> None			
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Bentonite slurry	0.00	None	0.00 ft. to 104.00 ft.
<b>Wellhead Completion:</b> Pitless adapter			

<b>Nearest Source of Possible Contamination:</b>			<b>Drilling Machine Operator Name:</b> DOODY
<b>Type</b>	<b>Distance</b>	<b>Direction</b>	<b>Employment:</b> Unknown
Septic tank	85 ft.	North	
			<b>Contractor Type:</b> Unknown
			<b>Reg No:</b> 78-1616
			<b>Business Name:</b>
			<b>Business Address:</b>
<b>Water Well Contractor's Certification</b>			
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.			
			<b>Signature of Registered Contractor</b>
			<b>Date</b>

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



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040333006

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Delta	
<b>Well ID: 23000006104</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 33	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
		<b>Well Owner:</b> ROGER LANCASTER				
<b>Elevation:</b> 1899 ft.		<b>Well Address:</b> 8313 DAVIS HWY LANSING, MI 48917			<b>Owner Address:</b> 8313 DAVIS HWY LANSING, MI 48917	
<b>Latitude:</b> 42.683052						
<b>Longitude:</b> -84.675288						
<b>Method of Collection:</b> Address Matching-House Number						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 201.00 ft.	<b>Date Completed:</b> 10/24/1996	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Welded		<b>Drop Pipe Length:</b> 80.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 115.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 4.50 in. to 201.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 35.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 80.00 ft. after 2.00 hrs. at 50 GPM	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Clay	10.00	10.00
<b>Screen Installed:</b> Yes <b>Screen Diameter:</b> 0.00 in. <b>Screen Material Type:</b> <b>Slot Length Set Between:</b> 0.00 0.00 ft. 0.00 ft. and 0.00 ft. <b>Fittings:</b> None	<b>Filter Packed:</b> No <b>Blank:</b> 0.00 ft. Above		Clay & Sand	20.00	30.00
			Clay	50.00	80.00
			Sand & Gravel	20.00	100.00
			Shale & Sandstone	30.00	130.00
			Shale	50.00	180.00
			Sandstone	21.00	201.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>Geology Remarks:</b>	
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 0.00	<b>Additives:</b> None	<b>Depth:</b> 0.00 ft. to 115.00 ft.
CLAY. [10] [10] [10] CLAY & SAND. [20] [16] [30] CLAY. [50] [10] [80] SAND & GRAVEL. [20] [25] [100] SHALE & SANDSTONE. [30] [56] [130] SHALE. [50] [55] [180] SANDSTONE. [21] [50] [201]			

<b>Wellhead Completion:</b> Pitless adapter	
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> STEVE PUNG
<b>Type:</b> Septic tank	<b>Employment:</b> Unknown
<b>Distance:</b> 59 ft.	<b>Contractor Type:</b> Unknown
<b>Direction:</b> South	<b>Reg No:</b> 19-1733

<b>Abandoned Well Plugged:</b> No	<b>Business Name:</b>
<b>Reason Not Plugged:</b>	<b>Business Address:</b>

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b> 12" ABOVE GRADE
<b>Other Remarks:</b>



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040334002

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Delta		
<b>Well ID: 23000006106</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 34	<b>Well Status:</b>	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b> 1899 ft. <b>Latitude:</b> 42.694103 <b>Longitude:</b> -84.661887 <b>Method of Collection:</b> Address Matching-House Number		<b>Distance and Direction from Road Intersection:</b>			
		<b>Well Owner:</b> BOARD OF WATER & LIGHT			
		<b>Well Address:</b> 3725 S CANAL RD LANSING, MI 48901		<b>Owner Address:</b> 3725 S CANAL RD LANSING, MI 48901	

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Other	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 380.00 ft.	<b>Date Completed:</b> 4/17/1998	<b>Pump Installation Date:</b>	<b>HP:</b> 10.00
<b>Well Type:</b> New	<b>Height:</b> 2.00 ft. above grade	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 55 GPM
<b>Casing Joint:</b> Welded		<b>Drop Pipe Length:</b> 306.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 8.00 in. to 104.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 12.25 in. to 102.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 26.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 183.00 ft. after 10.00 hrs. at 35 GPM		Lithology Unknown Fill	2.00	2.00
		Muck	4.00	6.00
		Brown Clay & Sand	7.00	13.00
<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	Gray Clay Gravel Sand	23.00	36.00
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	Black & Gray Shale	58.00	94.00
<b>Screen Material Type:</b>		Gray Shale & Sandstone	75.00	169.00
<b>Slot Length Set Between</b>		Sandstone	12.00	181.00
0.00 0.00 ft. 0.00 ft. and 0.00 ft.		Shale	68.00	249.00
<b>Fittings:</b> None		Sandstone	8.00	257.00
		Gray Shale & Limestone	27.00	284.00
		Sandstone	9.00	293.00
		Shale	43.00	336.00
		Sandstone	3.00	339.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>(Continued On Page 2)</b>	
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Neat cement	0.00	None	0.00 ft. to 100.00 ft.
<b>Wellhead Completion:</b> Pitless adapter			
<b>Geology Remarks: (Continued On Page 2)</b> FILL. [2] [49] [2] MUCK. [4] [44] [6] BROWN CLAY SAND. [7] [16] [13] GRAY CLAY GRAVEL SAND. [23] [17] [36] GRAY BLACK SHALE. [58] [55] [94] GRAY SHALE SANDSTONE. [75] [50] [169] SANDSTONE. [12] [50] [181] SHALE. [68] [55] [249] SANDSTONE. [8] [50] [257] GRAY SHALE LIMESTONE. [27]			

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> CHRIS FELL
<b>Type</b>	<b>Employment:</b> Unknown
Septic tank	
<b>Distance</b>	<b>(Continued on page 2)</b>
600 ft.	
<b>Direction</b>	
Southwest	

**General Remarks:**

**Other Remarks:** Well Use:Type Use Unknown



# Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.  
Failure to comply is a misdemeanor.



Import ID: 23040334002

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Delta		
<b>Well ID: 23000006106</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 34	<b>Well Status:</b>	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b> 1899 ft. <b>Latitude:</b> 42.694103 <b>Longitude:</b> -84.661887 <b>Method of Collection:</b> Address Matching-House Number		<b>Distance and Direction from Road Intersection:</b>			
		<b>Well Owner:</b> BOARD OF WATER & LIGHT			
		<b>Well Address:</b> 3725 S CANAL RD LANSING, MI 48901	<b>Owner Address:</b> 3725 S CANAL RD LANSING, MI 48901		

(Continued from Page 1)			
Formation Description	Thickness	Depth to Bottom	GEOLOGY REMARKS:
Gray Shale	6.00	345.00	[57] [284] SANDSTONE. [9] [50] [293] SHALE. [43] [55] [336] SANDSTONE.
Sandstone	3.00	348.00	[3] [50] [339] GRAY SHALE. [6] [55] [345] SANDSTONE. [3] [50] [348] GRAY
Gray Shale	13.00	361.00	SHALE. [13] [55] [361] SANDSTONE LIMESTONE. [15] [51] [376] GRAY
Sandstone & Limestone	15.00	376.00	SHALE. [4] [55] [380]
Gray Shale	4.00	380.00	
		<b>Contractor Type:</b> Unknown	<b>Reg No:</b> 33-1686
		<b>Business Name:</b>	
		<b>Business Address:</b>	
<b>Water Well Contractor's Certification</b>			
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.			
<b>Signature of Registered Contractor</b>			<b>Date</b>



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040335003

<b>Tax No:</b> 040035300200	<b>Permit No:</b>	<b>County:</b> Eaton	<b>Township:</b> Delta
<b>Well ID: 23000006109</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 35
<b>Elevation:</b> 872 ft.		<b>Well Status:</b>	<b>WSSN:</b>
<b>Latitude:</b> 42.6877355991		<b>Source ID/Well No:</b>	
<b>Longitude:</b> -84.6375731826		<b>Distance and Direction from Road Intersection:</b>	
<b>Method of Collection:</b> Interpolation-Map		Aquifer: ROCK Well #: 230403503	
<b>Well Owner:</b>			
<b>Well Address:</b>		<b>Owner Address:</b>	
6300 LANSING RD			
MI			

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Other	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 340.00 ft.	<b>Date Completed:</b> 4/21/1980	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Unknown	<b>Height:</b>	<b>Manufacturer:</b> Unknown	<b>Pump Type:</b> Unknown
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b> 28 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 0.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 95.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 36.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 101.00 ft. after 1.00 hrs. at 50 GPM		Clay	7.00	7.00
		Gravel & Clay	9.00	16.00
		Gravel	38.00	54.00
		Gravel & Clay	21.00	75.00
		Coal W/Shale	9.00	84.00
		Shale	9.00	93.00
		Sandstone W/Shale	6.00	99.00
		Sandstone	17.00	116.00
		Black Shale Organic	14.00	130.00
		Limestone W/Shale	25.00	155.00
		Sandstone W/Shale	60.00	215.00
		Shale	60.00	275.00
		Sandstone	6.00	281.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	<b>(Continued On Page 2)</b>	
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above	<b>Geology Remarks: (Continued On Page 2)</b>	
<b>Screen Material Type:</b>		CLAY. [7] [10] [7] GRAVEL/CLAY. [9] [31] [16] GRAVEL. [38] [30] [54]	
<b>Slot Length Set Between</b>		GRAVEL/CLAY. [21] [31] [75] SHALE/COAL. [9] [58] [84] SHALE. [9] [55] [93]	
0.00 0.00 ft. 0.00 ft. and 0.00 ft.		SANDSTONE/SHALE. [6] [52] [99] SANDSTONE. [17] [50] [116] BLACK	
<b>Fittings:</b> None		SHALE (ORGANIC RICH). [14] [67] [130] LIME/SHALE. [25] [57] [155]	
		SANDST	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>Drilling Machine Operator Name:</b> Syd Dulaney 02/05/90
<b>Grouting Material:</b> Other	<b>Bags Additives Depth:</b> 0.00 None 0.00 ft. to 0.00 ft.	<b>Employment:</b> Unknown

<b>Wellhead Completion:</b> Pitless adapter	<b>(Continued on page 2)</b>	
<b>Nearest Source of Possible Contamination:</b>	<b>Type</b>	<b>Distance</b>
	Septic tank	75 ft.
		<b>Direction</b>
		South
<b>Abandoned Well Plugged:</b> No		
<b>Reason Not Plugged:</b>		

<b>General Remarks:</b>
<b>Other Remarks:</b> Well Use:Commercial, Grouting Material 1:Well grouted material unknown





# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040335003

Tax No: 040035300200		Permit No: _____		County: Eaton		Township: Delta	
Well ID: 23000006109			Town/Range: 04N 03W	Section: 35	Well Status:	WSSN:	Source ID/Well No:
			Distance and Direction from Road Intersection: Aquifer: ROCK Well #: 230403503				
			Well Owner:				
Elevation: 872 ft.		Well Address: 6300 LANSING RD MI			Owner Address:		
Latitude: 42.6877355991							
Longitude: -84.6375731826							
Method of Collection: Interpolation-Map							

(Continued from Page 1)

Formation Description	Thickness	Depth to Bottom	GEOLOGY REMARKS:
Black Shale Organic	18.00	299.00	ONE/SHALE. [60] [52] [215] SHALE. [60] [55] [275] SANDSTONE. [6] [50] [281] BLACK SHALE (ORGANIC RICH). [18] [67] [299] SANDSTONE/SHALE. [38] [52] [337] SHALE. [3] [55] [340]
Sandstone W/Shale	38.00	337.00	
Shale	3.00	340.00	
		Contractor Type: Unknown	Reg No: 81-0522
		Business Name:	
		Business Address:	
<b>Water Well Contractor's Certification</b>			
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.			
			Date
			Signature of Registered Contractor



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040335004

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Delta	
<b>Well ID: 23000006110</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 35	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
<b>Elevation:</b> 860 ft.		<b>Well Owner:</b> KENNETH JOHNSTON				
<b>Latitude:</b> 42.6921646111		<b>Well Address:</b> 5750 LANSING RD WAYLAND, MI 49348		<b>Owner Address:</b> 3470 DOBIE RD. MASON, MI 48854		
<b>Longitude:</b> -84.6343923066						
<b>Method of Collection:</b> Loran C						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 300.00 ft.	<b>Date Completed:</b> 1/10/1978	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Unknown	<b>Height:</b> 0.00 ft. below grade	<b>Manufacturer:</b> Goulds	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Steel - black		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 47.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 54.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 40.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>			
<b>Yield Test Method:</b> Unknown	Clay	19.00	19.00
	Sand & Clay	22.00	41.00
	Shale W/Sandstone	259.00	300.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b>	
<b>Slot</b>	<b>Length</b>
0.00	0.00 ft.
<b>Set Between</b>	0.00 ft. and 0.00 ft.
<b>Fittings:</b> None	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Bentonite slurry	0.00	None	0.00 ft. to 0.00 ft.
<b>Geology Remarks:</b> CLAY. [19] [10] [19] SAND AND CLAY. [22] [27] [41] SHALE W/STRIPS OF SANDSTONE. [259] [58] [300]			

<b>Wellhead Completion:</b> Pitless adapter
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> CENTRAL DRILLING COMPANY
<b>Type</b>	<b>Employment:</b> Unknown
Unknown	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
0 ft.	<b>Reg No:</b>
<b>Direction</b>	
Unknown	

<b>Abandoned Well Plugged:</b> No	<b>Business Name:</b>
	<b>Business Address:</b>

<b>Reason Not Plugged:</b>	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b> _____ <b>Date</b> _____

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



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040335008

<b>Tax No:</b>		<b>Permit No:</b>		<b>County:</b> Eaton			<b>Township:</b> Delta		
<b>Well ID: 23000006111</b>				<b>Town/Range:</b> 04N 03W	<b>Section:</b> 34	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>	
				<b>Distance and Direction from Road Intersection:</b>					
<b>Elevation:</b> 870 ft. <b>Latitude:</b> 42.697399 <b>Longitude:</b> -84.649826 <b>Method of Collection:</b> Address Matching-House Number				<b>Well Owner:</b> CLARK FOUNDATIN					
				<b>Well Address:</b> 6851 MILLET RD LANSING, MI 48917			<b>Owner Address:</b> 6851 MILLET RD LANSING, MI 48917		

<b>Drilling Method:</b> Rotary		<b>Well Use:</b> Household		<b>Pump Installed:</b> Yes		<b>Pump Installation Only:</b> No	
<b>Well Depth:</b> 335.00 ft.		<b>Date Completed:</b> 6/26/1974		<b>Pump Installation Date:</b>		<b>HP:</b> 0.50	
<b>Well Type:</b> New		<b>Height:</b>		<b>Manufacturer:</b> Other		<b>Pump Type:</b> Submersible	
<b>Casing Type:</b> Steel - black		<b>Casing Joint:</b> Threaded & coupled		<b>Model Number:</b>		<b>Pump Capacity:</b> 10 GPM	
<b>Casing Fitting:</b> None		<b>Diameter:</b> 4.00 in. to 76.00 ft. depth		<b>Drop Pipe Length:</b> 84.00 ft.		<b>Pump Voltage:</b>	
<b>Borehole:</b>				<b>Drop Pipe Diameter:</b>		<b>Drilling Record ID:</b>	
				<b>Draw Down Seal Used:</b> No			
				<b>Pressure Tank Installed:</b> No			
				<b>Pressure Relief Valve Installed:</b> No			

<b>Static Water Level:</b> 40.00 ft. Below Grade		<b>Well Yield Test:</b>		<b>Yield Test Method:</b> Unknown	
<b>Pumping level:</b> 40.00 ft. after 0.00 hrs. at 20 GPM					
<b>Screen Installed:</b> Yes		<b>Filter Packed:</b> No			
<b>Screen Diameter:</b> 0.00 in.		<b>Blank:</b> 0.00 ft. Above			
<b>Screen Material Type:</b>					
<b>Slot</b>	<b>Length</b>	<b>Set Between</b>			
0.00	0.00 ft.	0.00 ft. and 0.00 ft.			
<b>Fittings:</b> None					
<b>Well Grouted:</b> Yes		<b>Grouting Method:</b> Unknown			
<b>Grouting Material:</b> Other		<b>Bags:</b> 0.00	<b>Additives:</b> None	<b>Depth:</b> 0.00 ft. to 0.00 ft.	

Formation Description	Thickness	Depth to Bottom
Clay	20.00	20.00
Hardpan	32.00	52.00
Shale	52.00	270.00
Unidentified Consolidated Fm	15.00	285.00
Shale	50.00	335.00

<b>Wellhead Completion:</b> Pitless adapter		<b>Geology Remarks:</b>	
		CLAY. [20] [10] [20] HARD PAN. [32] [18] [52] SHALE. [52] [55] [270] ROCK. [15] [59] [285] SHALE. [50] [55] [335]	
<b>Nearest Source of Possible Contamination:</b>		<b>Drilling Machine Operator Name:</b> DAILY & JACKSON	
<b>Type:</b> Unknown	<b>Distance:</b> 0 ft.	<b>Employment:</b> Unknown	
	<b>Direction:</b> Unknown	<b>Contractor Type:</b> Unknown	
		<b>Reg No:</b> 33-0390	

<b>Business Name:</b>	
<b>Business Address:</b>	
<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Grouting Material 1:Well grouted material unknown, Pump Manufacturer:FLINT & WALLING



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040335009

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton		<b>Township:</b> Delta	
<b>Well ID: 23000006112</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 34	<b>Well Status:</b>	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b> 1899 ft. <b>Latitude:</b> 42.694398 <b>Longitude:</b> -84.642508 <b>Method of Collection:</b> Address Matching-House Number		<b>Distance and Direction from Road Intersection:</b>			
<b>Well Owner:</b> TOM SCOZZABONE					
<b>Well Address:</b> 3712 CREYTS RD LANSING, MI 48917			<b>Owner Address:</b> 3737 LANSING RD LANSING, MI 48917		

<b>Drilling Method:</b> Rotary <b>Well Depth:</b> 245.00 ft. <b>Well Type:</b> New <b>Casing Type:</b> Steel - black <b>Casing Joint:</b> Threaded & coupled <b>Casing Fitting:</b> Drive shoe <b>Diameter:</b> 4.00 in. to 68.00 ft. depth <b>Borehole:</b>	<b>Well Use:</b> Household <b>Date Completed:</b> 5/20/1974 <b>Height:</b>	<b>Pump Installed:</b> Yes <b>Pump Installation Date:</b> <b>Manufacturer:</b> Red Jacket <b>Model Number:</b> <b>Drop Pipe Length:</b> 59.00 ft. <b>Drop Pipe Diameter:</b> <b>Draw Down Seal Used:</b> No <b>Pressure Tank Installed:</b> No <b>Pressure Relief Valve Installed:</b> No	<b>Pump Installation Only:</b> No <b>HP:</b> 0.50 <b>Pump Type:</b> Submersible <b>Pump Capacity:</b> 10 GPM <b>Pump Voltage:</b> <b>Drilling Record ID:</b>
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<b>Static Water Level:</b> 25.00 ft. Below Grade <b>Well Yield Test:</b> Pumping level 0.00 ft. after 0.00 hrs. at 40 GPM <b>Yield Test Method:</b> Unknown	<table border="1"> <thead> <tr> <th>Formation Description</th> <th>Thickness</th> <th>Depth to Bottom</th> </tr> </thead> <tbody> <tr><td>Sand &amp; Clay</td><td>24.00</td><td>24.00</td></tr> <tr><td>Gravel</td><td>25.00</td><td>49.00</td></tr> <tr><td>Shale</td><td>192.00</td><td>241.00</td></tr> <tr><td>Sandstone</td><td>4.00</td><td>245.00</td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Formation Description	Thickness	Depth to Bottom	Sand & Clay	24.00	24.00	Gravel	25.00	49.00	Shale	192.00	241.00	Sandstone	4.00	245.00																																	
Formation Description	Thickness	Depth to Bottom																																															
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Gravel	25.00	49.00																																															
Shale	192.00	241.00																																															
Sandstone	4.00	245.00																																															

<b>Screen Installed:</b> Yes <b>Screen Diameter:</b> 0.00 in. <b>Screen Material Type:</b> <b>Slot</b> <b>Length</b> <b>Set Between</b> 0.00            0.00 ft.            0.00 ft. and 0.00 ft. <b>Fittings:</b> None	<b>Filter Packed:</b> No <b>Blank:</b> 0.00 ft. Above <b>Set Between</b>
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<b>Well Grouted:</b> Yes <b>Grouting Material:</b> Other <b>Grouting Method:</b> Unknown <b>Bags:</b> 0.00 <b>Additives:</b> None <b>Depth:</b> 0.00 ft. to 49.00 ft.	<b>Geology Remarks:</b> SAND AND CLAY. [24] [27] [24] GRAVEL. [25] [30] [49] SHALE. [192] [55] [241] SAND ROCK. [4] [54] [245]
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<b>Wellhead Completion:</b> Pitless adapter
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<b>Nearest Source of Possible Contamination:</b> <b>Type:</b> None <b>Distance:</b> <b>Direction:</b>	<b>Drilling Machine Operator Name:</b> VANWORMER WELL DRILLING <b>Employment:</b> Unknown
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<b>Contractor Type:</b> Unknown <b>Business Name:</b> <b>Business Address:</b>	<b>Reg No:</b> 19-0676
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<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Grouting Material 1:Unknown



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID: 23040335019

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Delta	
<b>Well ID: 23000006122</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 34	<b>Well Status:</b>	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b>				
		<b>Well Owner:</b> KENNETH JOHNSTON				
<b>Elevation:</b> 858 ft.		<b>Well Address:</b> 5750 LANSING RD LANSING, MI 48917			<b>Owner Address:</b> 3470 DOBIE RD MASON, MI 48854	
<b>Latitude:</b> 42.6912485284						
<b>Longitude:</b> -84.6339030615						
<b>Method of Collection:</b> Loran C						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 300.00 ft.	<b>Date Completed:</b> 1/10/1978	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b> 0.00 ft. below grade	<b>Manufacturer:</b> Goulds	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Steel - black		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 47.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 54.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 40.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>			
	Clay	19.00	19.00
	Sand & Clay	22.00	41.00
	Shale W/Sandstone	259.00	300.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 0.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b>	
<b>Slot</b>	<b>Length</b>
0.00	0.00 ft.
<b>Set Between</b>	0.00 ft. and 0.00 ft.
<b>Fittings:</b> None	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Bentonite slurry	0.00	None	0.00 ft. to 0.00 ft.
<b>Geology Remarks:</b> CLAY. [19] [10] [19] SAND AND CLAY. [22] [27] [41] SHALE WITH FEW STRIPS OF SANDSTONE. [259] [56] [300]			

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

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> CENTRAL DRILLING CO
<b>Type</b>	<b>Employment:</b> Unknown
Unknown	
<b>Distance</b>	<b>Contractor Type:</b> Unknown
0 ft.	<b>Reg No:</b>
<b>Direction</b>	<b>Business Name:</b>
Unknown	<b>Business Address:</b>

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

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



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 16476	<b>County:</b> Eaton	<b>Township:</b> Delta
<b>Well ID: 23000007213</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 35
<b>Elevation:</b>		<b>Well Status:</b> Active	<b>WSSN:</b>
<b>Latitude:</b> 42.69192		<b>Source ID/Well No:</b>	
<b>Longitude:</b> -84.632244		<b>Distance and Direction from Road Intersection:</b> 1 mile east of Lansing Rd. and 80' north of Old Lansing Rd.	
<b>Method of Collection:</b> Address Matching-House Number		<b>Well Owner:</b> Jack Glesson	
		<b>Well Address:</b> 5638 Old Lansing Rd. Lansing, MI	<b>Owner Address:</b> 5638 Old Lansing Rd. Lansing, MI

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 320.00 ft.	<b>Date Completed:</b> 9/14/2001	<b>Pump Installation Date:</b> 9/14/2001	<b>HP:</b> 0.50
<b>Well Type:</b> Replacement	<b>Height:</b> 1.00 ft. above grade	<b>Manufacturer:</b> F.E. Myers	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> 2Nf152-12	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Solvent welded/glued		<b>Drop Pipe Length:</b> 120.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Shale packer/trap		<b>Drop Pipe Diameter:</b> 1.00 in.	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 61.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 4.50 in. to 320.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	
		<b>Pressure Tank Type:</b> Diaphragm/bladder	
		<b>Manufacturer:</b> Well-Rite-Flexcon	
		<b>Model Number:</b> W-80	<b>Tank Capacity:</b> 26.0 Gallons
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 40.00 ft. Below Grade	<b>Yield Test Method:</b> Air	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 100.00 ft. after 1.00 hrs. at 25 GPM		Clay	9.00	9.00
		Clay & Sand	5.00	14.00
		Clay & Gravel	14.00	28.00

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well	Shale	100.00	128.00
		Sandstone	11.00	139.00
		Shale	131.00	270.00
		Sandstone & Shale	15.00	285.00
		Shale	25.00	310.00
		Sandstone	8.00	318.00
		Shale	2.00	320.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe outside casing	<b>Geology Remarks:</b>		
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 4.00	<b>Additives:</b> Other	<b>Depth:</b> 0.00 ft. to 61.00 ft.	

<b>Wellhead Completion:</b> Pitless adapter, 12 inches above grade
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> Steve Pung
<b>Type:</b> Sewer line	<b>Employment:</b> Employee
<b>Distance:</b> 50 ft.	
<b>Direction:</b> West	

<b>Abandoned Well Plugged:</b> Yes	<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 34-2246
	<b>Business Name:</b> Johnson Well Drilling	
	<b>Business Address:</b> 12577 State Rd	
	<b>Water Well Contractor's Certification</b>	
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Casing Removed:</b>	<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Grouting Additive 1:Retarder, Map Scale:Unknown



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 16843	<b>County:</b> Eaton		<b>Township:</b> Windsor	
<b>Well ID: 23000007617</b>  Elevation: 876 ft. Latitude: 42.66837999 Longitude: -84.65145432 Method of Collection: Address Matching-House Number	<b>Town/Range:</b> 03N 03W	<b>Section:</b> 10	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
	<b>Distance and Direction from Road Intersection:</b> HILL & HOLLOW SUBDV. LOT#22				
	<b>Well Owner:</b> ROBERT HILL BUILDER				
	<b>Well Address:</b> 6953 THORNHILL DRIVE DIMONDALE, MI 48821		<b>Owner Address:</b> 755 E. COLUMBIA MASON, MI 48854		

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 180.00 ft.	<b>Date Completed:</b> 6/10/2002	<b>Pump Installation Date:</b> 6/17/2002	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b> 1.00 ft. above grade	<b>Manufacturer:</b> Sta-Rite	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic	<b>Casing Joint:</b> Solvent welded/glued	<b>Model Number:</b> 10SP40025	<b>Pump Capacity:</b> 12 GPM
<b>Casing Fitting:</b> None		<b>Drop Pipe Length:</b> 80.00 ft.	<b>Pump Voltage:</b>
<b>Diameter:</b> 5.00 in. to 100.00 ft. depth		<b>Drop Pipe Diameter:</b> 1.00 in.	<b>Drilling Record ID:</b>
<b>Borehole:</b> 8.50 in. to 100.00 ft. depth 4.75 in. to 180.00 ft. depth		<b>Draw Down Seal Used:</b> No	
		<b>Pressure Tank Installed:</b> Yes	
		<b>Pressure Tank Type:</b> Diaphragm/bladder	
		<b>Manufacturer:</b> Pro-Source	
		<b>Model Number:</b> 202	<b>Tank Capacity:</b> 20.0 Gallons
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 50.00 ft. Below Grade <b>Well Yield Test:</b> Pumping level 180.00 ft. after 1.00 hrs. at 80 GPM <b>Yield Test Method:</b> Air	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
	Brown Clay & Sand	20.00	20.00
<b>Screen Installed:</b> No <b>Intake:</b> Bedrock Well	Gray Clay	40.00	60.00
	Gray Shale	15.00	75.00
	Black & Gray Shale	5.00	80.00
	Gray Shale	9.00	89.00
	White Shale	4.00	93.00
	Shale & Sandstone	10.00	103.00
	Gray & White Sandstone W/Shale	77.00	180.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe outside casing		
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 5.00	<b>Additives:</b> None	<b>Depth:</b> 0.00 ft. to 100.00 ft.
<b>Wellhead Completion:</b> Pitless adapter			

<b>Geology Remarks:</b>			
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<b>Nearest Source of Possible Contamination:</b>			<b>Drilling Machine Operator Name:</b> GREG MEAD/TIM WALTZ
<b>Type:</b> Sewer line	<b>Distance:</b> 10 ft.	<b>Direction:</b> East	<b>Employment:</b> Employee

<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 23-2227
<b>Business Name:</b> DYER WELL DRILLING&SERVICE,INC	
<b>Business Address:</b> 12520 PEACOCK RD, LAINGSBURG, MI, 48848	

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

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



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 15470	<b>County:</b> Eaton	<b>Township:</b> Windsor		
<b>Well ID: 23000007703</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 10	<b>Well Status:</b> Active	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b>		<b>Distance and Direction from Road Intersection:</b> appx. .5 mi W of Creyts rd on S side of Billwood Hwy			
<b>Latitude:</b> 42.669052		<b>Well Owner:</b> Perception Development			
<b>Longitude:</b> -84.650089		<b>Well Address:</b> 9562 Billwood Hwy. Dimondale, MI		<b>Owner Address:</b> 403 S Clinton Grand Ledge, MI 48837	
<b>Method of Collection:</b> Address Matching-House Number					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 180.00 ft.	<b>Date Completed:</b> 1/22/2001	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Aermotor	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> T1250	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 60.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 100.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.50 in. to 100.00 ft. depth 4.75 in. to 180.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	
		<b>Pressure Tank Type:</b> Unknown	
		<b>Manufacturer:</b> Amtrol	
		<b>Model Number:</b> 203	<b>Tank Capacity:</b> 32.0 Gallons
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 28.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 180.00 ft. at 50 GPM	<b>Yield Test Method:</b> Air	<b>Formation Description</b>		<b>Thickness</b>	<b>Depth to Bottom</b>
			Brown Clay & Gravel	65.00	65.00	
			Gray Clay	8.00	73.00	
			Gray Shale	7.00	80.00	
			Light Gray Shale & Sandstone	22.00	102.00	
			Gray & White Sandstone	78.00	180.00	

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well	<b>Geology Remarks:</b>			
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown				
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 5.00	<b>Additives:</b> None	<b>Depth:</b> 0.00 ft. to 100.00 ft.		

<b>Wellhead Completion:</b> Pitless adapter, 12 inches above grade	
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> Derrick Davis
<b>Type:</b> Septic tank	<b>Employment:</b> Employee
<b>Distance:</b> 70 ft.	
<b>Direction:</b> Northeast	

<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 23-2227
<b>Business Name:</b> Dyer Well Drilling & Services	
<b>Business Address:</b>	

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

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





# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 16540	<b>County:</b> Eaton		<b>Township:</b> Delta	
<b>Well ID: 23000007936</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 33	<b>Well Status:</b> Active	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b>		<b>Distance and Direction from Road Intersection:</b> 1/4 mile north of Davis Road on the east side of Guinea Road			
<b>Latitude:</b> 42.697192		<b>Well Owner:</b> Angelo Infrate			
<b>Longitude:</b> -84.6737067		<b>Well Address:</b> Guinea Road Lansing, MI		<b>Owner Address:</b> 26400 Sherwood Warren, MI 48091	
<b>Method of Collection:</b> Address Matching-Street Centerline					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> No
<b>Well Depth:</b> 340.00 ft.	<b>Date Completed:</b> 11/13/2001	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> New	<b>Height:</b> 1.00 ft. above grade	<b>Pressure Relief Valve Installed:</b> No
<b>Casing Type:</b> PVC plastic		
<b>Casing Joint:</b> Welded		
<b>Casing Fitting:</b> None		
<b>Diameter:</b> 5.00 in. to 90.00 ft. depth		
<b>Borehole:</b> 8.75 in. to 90.00 ft. depth 5.88 in. to 100.00 ft. depth 4.75 in. to 340.00 ft. depth		

<b>Static Water Level:</b> 100.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 340.00 ft. after 1.00 hrs. at 25 GPM	<b>Yield Test Method:</b> Air	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Sand	10.00	10.00
<b>Screen Installed:</b> No <b>Intake:</b> Bedrock Well			Clay	50.00	60.00
			Shale	40.00	100.00
			Sandstone	5.00	105.00
			Shale	105.00	210.00
			Sandstone	3.00	213.00
			Shale	115.00	328.00
			Sandstone	6.00	334.00
			Shale	6.00	340.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe outside casing
<b>Grouting Material:</b> Bentonite slurry	<b>Depth:</b> 0.00 ft. to 90.00 ft.
<b>Bags:</b> 9.00	<b>Additives:</b> None

<b>Wellhead Completion:</b> 12 inches above grade	<b>Geology Remarks:</b>
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> Dan Cesal
<b>Type:</b> None	<b>Employment:</b> Employee
<b>Distance:</b>	<b>Contractor Type:</b> Water Well Drilling Contractor
<b>Direction:</b>	<b>Reg No:</b> 78-1607
	<b>Business Name:</b> Ed Birkmeier Well Drilling Ltd
	<b>Business Address:</b> 10655 Easton Road, New Lothrop, MI, 48460
	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

<b>General Remarks:</b> Owner is hooking up system
<b>Other Remarks:</b> Coordinate Source:Google well address geocoding



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b> 0647301KA04	<b>Permit No:</b> 16497	<b>County:</b> Eaton	<b>Township:</b> Windsor		
<b>Well ID: 23000007942</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b> Active	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b>		<b>Distance and Direction from Road Intersection:</b> 80' EAST OF PATS DR, 750' SOUTH OF LANSING RD			
<b>Latitude:</b> 42.67222194		<b>Well Owner:</b> BRENDA FINCH			
<b>Longitude:</b> -84.65757727		<b>Well Address:</b> 7332 PATS DR DIMONDALE, MI		<b>Owner Address:</b> 980 S MEECH RD DANSVILLE, MI 48819	
<b>Method of Collection:</b> Interpolation-Map					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 300.00 ft.	<b>Well Type:</b> Replacement	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Replacement	<b>Date Completed:</b> 10/12/2001	<b>Manufacturer:</b> Goulds	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic	<b>Height:</b> 2.00 ft. above grade	<b>Model Number:</b> 10LS05421	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Solvent welded/glued		<b>Drop Pipe Length:</b> 100.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 157.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.75 in. to 155.00 ft. depth 4.75 in. to 300.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 40.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 100.00 ft. after 0.50 hrs. at 20 GPM			
<b>Yield Test Method:</b> Air	Brown Clay	11.00	11.00
	Gravel	5.00	16.00
	Gray Clay	8.00	24.00
<b>Screen Installed:</b> No	Sand W/Gravel Fine	25.00	49.00
<b>Intake:</b> Unknown	Gray Clay	6.00	55.00
	Gravel	8.00	63.00
	Gray Clay	14.00	77.00
	Gray Shale	6.00	83.00
	White Shale & Sandstone	14.00	97.00
	Black Shale	3.00	100.00
	Gray Shale	21.00	121.00
	Gray Sandstone & Shale	48.00	169.00
	Gray Shale	24.00	193.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown
<b>Grouting Material:</b> Bentonite slurry	<b>Depth:</b> 0.00 ft. to 155.00 ft.
<b>Bags:</b> 7.00	<b>Additives:</b> None

**Wellhead Completion:** Pitless adapter

<b>Nearest Source of Possible Contamination:</b>		
<b>Type:</b> Other	<b>Distance:</b> 40 ft.	<b>Direction:</b> North

**Abandoned Well Plugged:** Yes

**Casing Removed:**

**Drilling Machine Operator Name:** FRED WEITLING

**Employment:** Employee

**Geology Remarks:**

**General Remarks:** DRILLED BY AARDVARK DRLG

**Other Remarks:** Contamination Source 1:OLD WATER WELL





# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 14886	<b>County:</b> Eaton		<b>Township:</b> Windsor	
<b>Well ID: 23000008266</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b> Active	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b>		<b>Distance and Direction from Road Intersection:</b> 30 FEET WEST OF PATS DRIVE AT DEAD END			
<b>Latitude:</b> 42.671013		<b>Well Owner:</b> RICHARD GOHER			
<b>Longitude:</b> -84.654616		<b>Well Address:</b> 7281 PATS DRIVE MI		<b>Owner Address:</b> 7281 PATS DRIVE MI	
<b>Method of Collection:</b> QQQ - Centroid					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 200.00 ft.	<b>Date Completed:</b> 12/9/1999	<b>Pump Installation Date:</b>	<b>HP:</b> 10.00
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b>	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Shale packer/trap		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 94.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 4.50 in. to 200.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	<b>Tank Capacity:</b> 28.0 Gallons
		<b>Pressure Tank Type:</b> Unknown	
		<b>Manufacturer:</b> Well-Rite-Flexcon	
		<b>Model Number:</b> W80	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 30.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 100.00 ft. after 0.50 hrs. at 30 GPM	<b>Yield Test Method:</b> Air	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Clay & Gravel W/Stones	20.00	20.00
			Sand	10.00	30.00
			Muck W/Clay	20.00	50.00
			Shale	10.00	60.00
			Muck W/Clay	5.00	65.00
			Shale	55.00	120.00
			Sandstone & Shale	20.00	140.00
			Shale	30.00	170.00
			Sandstone	30.00	200.00

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well	<b>Geology Remarks:</b>
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 6.00	
<b>Additives:</b> None	<b>Depth:</b> 0.00 ft. to 94.00 ft.	

<b>Wellhead Completion:</b> Pitless adapter, 12 inches above grade
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<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> STEVE PERRY
<b>Type:</b> Other	<b>Employment:</b> Unknown
<b>Distance:</b> 10 ft.	
<b>Direction:</b> South	
	<b>Contractor Type:</b> Water Well Drilling Contractor
	<b>Reg No:</b> 34-2246
	<b>Business Name:</b> J WELL DRLG
	<b>Business Address:</b>

<b>Abandoned Well Plugged:</b> Yes	<b>Water Well Contractor's Certification</b> This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
<b>Casing Removed:</b>	
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Contamination Source 1:OLD WELL



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 10552	<b>County:</b> Eaton		<b>Township:</b> Windsor	
<b>Well ID: 23000008356</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b> Active	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b>		<b>Distance and Direction from Road Intersection:</b> 85 FEET EAST OF PATS DR			
<b>Latitude:</b> 42.67318453		<b>Well Owner:</b> CHRIS DAVIS			
<b>Longitude:</b> -84.656051		<b>Well Address:</b> 7382 PATS DRIVE DIMONDALE, MI		<b>Owner Address:</b> 7382 PATS DRIVE DIMONDALE, MI	
<b>Method of Collection:</b> Interpolation-Map					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 290.00 ft.	<b>Date Completed:</b> 12/23/2002	<b>Pump Installation Date:</b>	<b>HP:</b> 0.50
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> F.E. Myers	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b>	<b>Pump Capacity:</b> 10 GPM
<b>Casing Joint:</b> Unknown		<b>Drop Pipe Length:</b> 100.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 116.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 116.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	
		<b>Pressure Tank Type:</b> Unknown	
		<b>Manufacturer:</b> Champion	
		<b>Model Number:</b> CM-203	<b>Tank Capacity:</b> 32.0 Gallons
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 62.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 320.00 ft. after 0.50 hrs. at 20 GPM	<b>Yield Test Method:</b> Air	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Clay	70.00	70.00
<b>Screen Installed:</b> No <b>Intake:</b> Bedrock Well			Gravel & Clay	10.00	80.00
			Shale	30.00	110.00
			Sandstone & Shale	20.00	130.00
			Shale	30.00	160.00
			Sandstone & Shale	70.00	230.00
			Shale	60.00	290.00
			Shale & Sandstone	30.00	320.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Bentonite slurry	5.00	None	0.00 ft. to 116.00 ft.

<b>Wellhead Completion:</b> Pitless adapter	<b>Geology Remarks:</b>

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> JASON MANNING
<b>Type</b>	<b>Employment:</b> Subcontractor
Septic tank	
<b>Distance</b>	
<b>Direction</b>	

<b>Abandoned Well Plugged:</b> Yes	<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 19-2330
	<b>Business Name:</b> MAURER & PARKS WELL DRLG	
	<b>Business Address:</b>	

<b>Casing Removed:</b>	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b> <b>Date</b>

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



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Eaton			<b>Township:</b> Delta	
<b>Well ID: 23000009147</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 27	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> N.E CORNER MILLETT HWY & CANAL				
<b>Elevation:</b>		<b>Well Owner:</b> LOWELL SMITH				
<b>Latitude:</b> 42.69829723		<b>Well Address:</b>			<b>Owner Address:</b> 3333 CANAL RD LANSING, MI 48910	
<b>Longitude:</b> -84.66143605						
<b>Method of Collection:</b> Unknown						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Unknown	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 270.00 ft.	<b>Date Completed:</b>	<b>Pump Installation Date:</b>	<b>HP:</b> 1.50
<b>Well Type:</b> Unknown	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b> 15 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 84.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 90.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 60.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>			
	Clay	50.00	50.00
	Shale	210.00	260.00
	Sandstone	10.00	270.00

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well

<b>Well Grouted:</b> No
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<b>Wellhead Completion:</b> Pitless adapter	<b>Geology Remarks:</b>

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b>	
<b>Type</b>	<b>Distance</b>	<b>Direction</b>
Septic tank	50 ft.	East
<b>Employment:</b> Unknown		

<b>Abandoned Well Plugged:</b> No	<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 23-0107
<b>Reason Not Plugged:</b>	<b>Business Name:</b> CHAS KLEINFELT & SON	
	<b>Business Address:</b>	

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

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



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> w051091	<b>County:</b> Eaton			<b>Township:</b> Windsor
<b>Well ID: 23000010081</b>  <b>Elevation:</b>  <b>Latitude:</b> 42.658438  <b>Longitude:</b> -84.679803  <b>Method of Collection:</b> Interpolation-Aerial Photo	<b>Town/Range:</b> 03N 03W	<b>Section:</b> 9	<b>Well Status:</b> Active	<b>WSSN:</b> 795	<b>Source ID/Well No:</b> 1-North
	<b>Distance and Direction from Road Intersection:</b> Blue Water #1 north				
	<b>Well Owner:</b> BLUE WATER VILLAGE				
	<b>Well Address:</b> BLUE WATER 1 Dimondale, MI 48821			<b>Owner Address:</b> STROBEL ROAD DIMONDALE, MI 48821	

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Type I public	<b>Pump Installed:</b> No
<b>Well Depth:</b> 460.00 ft.	<b>Date Completed:</b> 8/17/2004	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> New	<b>Height:</b> 1.00 ft. above grade	<b>Pressure Relief Valve Installed:</b> No
<b>Casing Type:</b> PVC plastic		
<b>Casing Joint:</b> Solvent welded/glued		
<b>Casing Fitting:</b> None		
<b>Diameter:</b> 6.90 in. to 92.00 ft. depth SDR: 21.00		
<b>Borehole:</b> 10.00 in. to 92.00 ft. depth 5.75 in. to 460.00 ft. depth		

<b>Static Water Level:</b> 31.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b>			
<b>Yield Test Method:</b> Air	Black Clay Sandy	16.00	16.00
Pumping level 260.00 ft. after 1.00 hrs. at 55 GPM	Brown Clay	1.00	17.00
Pumping level 360.00 ft. after 1.00 hrs. at 65 GPM	Gravel & Sand	10.00	27.00
Pumping level 460.00 ft. after 1.00 hrs. at 80 GPM	Gray Clay	11.00	38.00
<b>Screen Installed:</b> No	Sand & Stones W/Gravel	7.00	45.00
<b>Intake:</b> Bedrock Well	Gray Sandstone Soft	6.00	51.00
	Gray Sandstone Hard	19.00	70.00
	Gray & White Shale	5.00	75.00
	Black & Gray Shale	12.00	87.00
	Gray & White Sandstone	11.00	98.00
	Gray Shale & Sandstone	3.00	101.00
	Gray Shale	2.00	103.00
	Black Shale	1.00	104.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe outside casing		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Neat cement	36.00	None	0.00 ft. to 92.00 ft.

**Wellhead Completion:** 12 inches above grade

<b>Nearest Source of Possible Contamination:</b>		
<b>Type</b>	<b>Distance</b>	<b>Direction</b>
None		

(Continued On Page 2)

**Geology Remarks:**

**Drilling Machine Operator Name:** KEVIN OUELLETTE, JOEL TEVELDE  
**Employment:** Employee

(Continued on page 2)

**General Remarks:** 75-80GPM@460', 60-65GPM@360', 50-55GPM@260', 25-30GPM@160', 10-15GPM@60'. SEVERAL ITEMS CORRECTED BY DNRE 6/25/2010.

**Other Remarks:**







# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> W051091	<b>County:</b> Eaton		<b>Township:</b> Windsor	
<b>Well ID: 23000010084</b>	<b>Town/Range:</b> 03N 03W	<b>Section:</b> 9	<b>Well Status:</b> Active	<b>WSSN:</b> 795	<b>Source ID/Well No:</b> 4-East
	<b>Distance and Direction from Road Intersection:</b> BLUE WATER #4 EAST				
	<b>Well Owner:</b> BLUE WATER VILLAGE				
<b>Elevation:</b>	<b>Well Address:</b>		<b>Owner Address:</b>		
<b>Latitude:</b> 42.658386	BLUE WATER 4		STROBEL RD		
<b>Longitude:</b> -84.679641	DIMONDALE, MI 48821		DIMONDALE, MI 48821		
<b>Method of Collection:</b> Interpolation-Aerial Photo					

<b>Drilling Method:</b> Rotary	<b>Pump Installed:</b> No
<b>Well Depth:</b> 460.00 ft.	<b>Pressure Tank Installed:</b> No
<b>Well Use:</b> Type I public	<b>Pressure Relief Valve Installed:</b> No
<b>Well Type:</b> New	
<b>Date Completed:</b> 8/19/2004	
<b>Casing Type:</b> PVC plastic	
<b>Height:</b> 1.00 ft. above grade	
<b>Casing Joint:</b> Solvent welded/glued	
<b>Casing Fitting:</b> None	
<b>Diameter:</b> 6.00 in. to 88.00 ft. depth SDR: 21.00	
<b>Borehole:</b> 10.00 in. to 83.00 ft. depth	
5.75 in. to 460.00 ft. depth	

Static Water Level:	Formation Description	Thickness	Depth to Bottom
16.70 ft. Below Grade	Black Clay Sandy	13.00	13.00
<b>Well Yield Test:</b>	Gravel & Sand	11.00	24.00
<b>Yield Test Method:</b> Air	Gray Clay & Gravel	11.00	35.00
Pumping level 260.00 ft. after 1.00 hrs. at 55 GPM	Gravel & Sand W/Stones	13.00	48.00
Pumping level 360.00 ft. after 1.00 hrs. at 65 GPM	Gray Sandstone Soft	4.00	52.00
Pumping level 460.00 ft. after 1.00 hrs. at 80 GPM	Gray & White Shale	31.00	83.00
<b>Screen Installed:</b> No	Gray Sandstone	14.00	97.00
<b>Intake:</b> Bedrock Well	Black & Gray Shale	7.00	104.00
	Gray Sandstone	5.00	109.00
	Gray Shale & Sandstone	9.00	118.00
	Gray Shale & Limestone	25.00	143.00
	Gray Shale & Sandstone	5.00	148.00
	Black & Gray Shale	2.00	150.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe outside casing		
<b>Grouting Material</b>	<b>Bags</b>	<b>Additives</b>	<b>Depth</b>
Neat cement	26.00	None	0.00 ft. to 88.00 ft.

(Continued On Page 2)

**Geology Remarks:**

**Wellhead Completion:** 12 inches above grade

<b>Nearest Source of Possible Contamination:</b>		
<b>Type</b>	<b>Distance</b>	<b>Direction</b>
None		

**Drilling Machine Operator Name:** KEVIN OUELLETTE

**Employment:** Employee

(Continued on page 2)

**General Remarks:** 75-80gpm@460', 60-65gpm@360', 50-55gpm@260', 25-30gpm@160', 10-15gpm@60'. Date of completion and remarks corrected by DNRE 6/25/2010.

**Other Remarks:**



# Water Well And Pump Record

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



Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> W051091	<b>County:</b> Eaton	<b>Township:</b> Windsor
<b>Well ID:</b> 23000010084	<b>Town/Range:</b> 03N 03W	<b>Section:</b> 9	<b>Well Status:</b> Active
	<b>WSSN:</b> 795		
	<b>Source ID/Well No:</b> 4-East		
<b>Elevation:</b>	<b>Distance and Direction from Road Intersection:</b> BLUE WATER #4 EAST		
<b>Latitude:</b> 42.658386	<b>Well Owner:</b> BLUE WATER VILLAGE		
<b>Longitude:</b> -84.679641	<b>Well Address:</b> BLUE WATER 4 DIMONDALE, MI 48821		<b>Owner Address:</b> STROBEL RD DIMONDALE, MI 48821
<b>Method of Collection:</b> Interpolation-Aerial Photo			

(Continued from Page 1)

Formation Description	Thickness	Depth to Bottom
Gray Shale & Sandstone	4.00	154.00
Gray Sandstone	19.00	173.00
Gray Shale & Limestone	19.00	192.00
White Sandstone	3.00	195.00
Gray Shale	1.00	196.00
Gray Sandstone	19.00	215.00
Sandstone Cemented	6.00	221.00
Gray Shale & Sandstone	19.00	240.00
Black & White Shale	2.00	242.00
Shale & Limestone	39.00	281.00
Gray Sandstone	8.00	289.00
Gray Shale & Limestone	55.00	344.00
Gray Sandstone	23.00	367.00
Limestone	11.00	378.00
Iron Formation W/Sandstone	21.00	399.00
Gray & White Sandstone	5.00	404.00
Limestone	7.00	411.00
Gray Shale & Sandstone	12.00	423.00
Limestone	1.00	424.00
Gray Shale & Sandstone	12.00	436.00
Limestone	2.00	438.00
Iron Formation W/Shale	15.00	453.00
Limestone	1.00	454.00
Gray Shale & Sandstone	6.00	460.00

<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 23-2309
<b>Business Name:</b> Dyer Well Drilling & Service	
<b>Business Address:</b> 7300 Millett Hwy, Lansing, MI, 48917	

### Water Well Contractor's Certification

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

**Signature of Registered Contractor** **Date**



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 08335	<b>County:</b> Eaton		<b>Township:</b> Delta	
<b>Well ID: 23000010760</b>		<b>Town/Range:</b> 04N 03W	<b>Section:</b> 33	<b>Well Status:</b> Active	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b>		<b>Distance and Direction from Road Intersection:</b> 1/8 mile west of Canel Rd. and 150' north of Davis Hwy.			
<b>Latitude:</b> 42.68337		<b>Well Owner:</b> Pat Wheeler			
<b>Longitude:</b> -84.66569		<b>Well Address:</b> 8809 Davis Hwy Lansing, MI 48917		<b>Owner Address:</b> 8809 Davis Hwy Lansing, MI 48917	
<b>Method of Collection:</b> GPS Differential (DGPS)					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 300.00 ft.	<b>Date Completed:</b> 6/10/2008	<b>Pump Installation Date:</b> 6/10/2008	<b>HP:</b> 0.50
<b>Well Type:</b> Replacement	<b>Height:</b> 1.00 ft. above grade	<b>Manufacturer:</b> Franklin Electric	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> 10FAO5P4	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Solvent welded/glued		<b>Drop Pipe Length:</b> 80.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Shale packer/trap		<b>Drop Pipe Diameter:</b> 1.00 in.	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 125.00 ft. depth SDR: 21.00		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.50 in. to 125.00 ft. depth 4.50 in. to 300.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	
		<b>Pressure Tank Type:</b> Diaphragm/bladder	
		<b>Manufacturer:</b> Well-Rite-Flexcon	
		<b>Model Number:</b> PC66	<b>Tank Capacity:</b> 20.0 Gallons
		<b>Pressure Relief Valve Installed:</b> Yes	

<b>Static Water Level:</b> 25.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 300.00 ft. after 1.00 hrs. at 20 GPM			
<b>Yield Test Method:</b> Air	Clay & Cobbles	22.00	22.00
	Clay & Gravel	75.00	97.00
	Black & Gray Shale	25.00	122.00
	Sandstone & Shale W/Sandstone	178.00	300.00

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well
<b>Well Grouted:</b> Yes	
<b>Grouting Method:</b> Grout pipe outside casing	
<b>Grouting Material:</b> Bentonite slurry	<b>Depth:</b> 0.00 ft. to 125.00 ft.
<b>Bags:</b> 8.00	<b>Additives:</b> None
<b>Wellhead Completion:</b> Pitless adapter, 12 inches above grade	

<b>Geology Remarks:</b>
<b>Nearest Source of Possible Contamination:</b>
<b>Type:</b> Septic tank
<b>Distance:</b> 50 ft.
<b>Direction:</b> West

<b>Drilling Machine Operator Name:</b> Steve Pung	
<b>Employment:</b> Employee	
<b>Contractor Type:</b> Water Well Drilling Contractor	
<b>Reg No:</b> 34-2246	
<b>Business Name:</b> Johnson Well Drilling	
<b>Business Address:</b> 12577 State Rd Grand, Ledge, MI, 48837	
<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Map Scale:Unknown



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 04698	<b>County:</b> Eaton		<b>Township:</b> Windsor	
<b>Well ID:</b> 23000010789	<b>Town/Range:</b> 03N 03W	<b>Section:</b> 2	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
	<b>Distance and Direction from Road Intersection:</b> 2/10 mile east of Creyts and 5/10 mile south of Lansing Ave.				
	<b>Well Owner:</b> David Hoisington				
<b>Elevation:</b>	<b>Well Address:</b> 7584 Creyts Dimondale, MI 48821		<b>Owner Address:</b> 7584 Creyts Dimondale, MI 48821		
<b>Latitude:</b> 42.67768					
<b>Longitude:</b> -84.63895					
<b>Method of Collection:</b> GPS Std Positioning Svc SA Off					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 356.00 ft.	<b>Date Completed:</b> 7/30/2008	<b>Pump Installation Date:</b>	<b>HP:</b> 0.75
<b>Well Type:</b> Replacement	<b>Height:</b> 1.00 ft. above grade	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> 75211G12BC	<b>Pump Capacity:</b> 12 GPM
<b>Casing Joint:</b> Solvent welded/glued		<b>Drop Pipe Length:</b> 100.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b> 1.00 in.	<b>Drilling Record ID:</b>
		<b>Draw Down Seal Used:</b> No	
<b>Diameter:</b> 5.00 in. to 179.00 ft. depth SDR: 21.00		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	
<b>Borehole:</b> 8.75 in. to 178.00 ft. depth 4.50 in. to 356.00 ft. depth			

<b>Static Water Level:</b> 43.00 ft. Below Grade	<b>Well Yield Test:</b> 1.00 hrs. at 20 GPM	<b>Yield Test Method:</b> Air	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Sand & Clay Brown	19.00	19.00
			Sand & Gravel	47.00	66.00
			Gray Clay Soft	12.00	78.00
			Gray Clay W/Gravel	39.00	117.00
			Shale	29.00	146.00
			Sandstone & Shale	35.00	181.00
			Sandstone	34.00	215.00
			Shale	126.00	341.00
			Sandstone	15.00	356.00

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well	
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe outside casing	
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 11.00	<b>Additives:</b> None
	<b>Depth:</b> 0.00 ft. to 175.00 ft.	

<b>Wellhead Completion:</b> Pitless adapter	<b>Geology Remarks:</b>

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> D Hein and W Witt
<b>Type:</b> Septic tank	<b>Employment:</b> Employee
<b>Distance:</b> 75 ft.	<b>Pump Installer:</b> C Fell and C Blackshear
<b>Direction:</b> West	<b>Contractor Type:</b> Water Well Drilling Contractor <b>Reg No:</b> 33-2036

<b>Abandoned Well Plugged:</b> Yes	<b>Business Name:</b> Hart Well Drilling
<b>Drilling Record ID:</b> 23000003765	<b>Business Address:</b> 1154 S Jefferson, Mason, MI, 48854

<b>Casing Diameter:</b> 4 in.	<b>Casing Removed:</b> No	<b>Water Well Contractor's Certification</b> This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Plugging Material:</b> Neat cement			
<b>No. of Bags:</b> 18.00	<b>Well Depth:</b> 180 ft.	<b>Signature of Registered Contractor</b>	<b>Date</b>

**General Remarks:** Plugged well GPS 42.67748 -84.63865 Original depth 360, probed to 180 and was solid at bottom. Well was pumping black mud, formation may have caved in. New well producing 20 GPM from 100 feet while developing with air.

**Other Remarks:**



# Water Well And Pump Record



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

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 31521	<b>County:</b> Eaton		<b>Township:</b> Windsor	
<b>Well ID: 23000011554</b>		<b>Town/Range:</b> 03N 03W	<b>Section:</b> 3	<b>Well Status:</b> Active	<b>WSSN:</b>
		<b>Source ID/Well No:</b>			
<b>Elevation:</b>		<b>Distance and Direction from Road Intersection:</b>			
<b>Latitude:</b> 42.67995		3/8 MILE WEST OF LANSING RD ON NORTH SIDE OF WOODLANE DR. HOLIDAY INN EXPRESS			
<b>Longitude:</b> -84.652516		<b>Well Owner:</b> STARBEST CONSTRUCTION			
<b>Method of Collection:</b> GPS Std Positioning Svc SA Off		<b>Well Address:</b> 9490 WOODLANE DR DIAMONDALE, MI 48821		<b>Owner Address:</b> 1040 HAMLIN RD ROCHESTER HILLS, MI 48309	

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Irrigation	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 200.00 ft.	<b>Date Completed:</b> 9/13/2013	<b>Pump Installation Date:</b> 9/13/2013	<b>HP:</b> 0.50
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> A.Y. McDonald	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic	<b>Casing Joint:</b> Solvent welded/glued	<b>Model Number:</b> 23150M2	<b>Pump Capacity:</b> 25 GPM
<b>Casing Fitting:</b>		<b>Drop Pipe Length:</b> 80.00 ft.	<b>Pump Voltage:</b> 230
<b>Diameter:</b> 5.00 in. to 115.00 ft. depth SDR: 21.00		<b>Drop Pipe Diameter:</b> 1.25 in.	<b>Drilling Record ID:</b>
		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.75 in. to 115.00 ft. depth 4.50 in. to 200.00 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 24.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 80.00 ft. after 1.00 hrs. at 50 GPM	<b>Yield Test Method:</b> Air	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Brown Clay & Sand Soft	6.00	6.00
			Gray Clay	30.00	36.00
			Gravel & Clay Medium	9.00	45.00
			Gray Clay Hard	20.00	65.00
			Gray Clay & Sand Soft	15.00	80.00
			Gravel & Clay Fine W/Stones	21.00	101.00
			Sandstone Broken W/Sand	14.00	115.00
			Shale & Sandstone Water Bearing	85.00	200.00

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well	<b>Geology Remarks:</b>
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe inside casing	
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> 8.00	
	<b>Additives:</b> None	
	<b>Depth:</b> 0.00 ft. to 115.00 ft.	

<b>Wellhead Completion:</b> 12 inches above grade
---

<b>Nearest Source of Possible Contamination:</b>	<b>Drilling Machine Operator Name:</b> RICK FREY
<b>Type:</b> Other	<b>Employment:</b> Employee
<b>Distance:</b> 75 ft.	
<b>Direction:</b> North	

<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 13-1593
<b>Business Name:</b> Mike Katz Well Drilling	
<b>Business Address:</b> 1479 E Michigan, Battle Creek, MI, 49017	

<b>Water Well Contractor's Certification</b>	
This well/pump was constructed under my supervision and I hereby certify that the work complies with Part 127 Act 368 PA 1978 and the well code.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
<b>Other Remarks:</b> Contamination Source 1:MUNICIPAL SEWER

**ATTACHMENT B**

**Test Pit and Soil Boring Documentation**



PROJECT: LBWL - Erickson PAGE 1 OF 1  
 PROJECT NO.: BORING CW-SB-01  
 ELEVATION: DATE 10/2/2018  
 FIELD GEOLOGIST: Tim Mayotte RIG Geoprobe

SAMPLE NO., TYPE & DEPTH (ft)	BLOWS/SIX INCHES OR RQD (%)	SAMPLE RECOVERY/SAMPLE LENGTH (ft)	MATERIAL MOISTURE & WATER DEPTH (ft)	MATERIAL DESCRIPTION*			USCS OR ROCK BROKENNESS	REMARKS
				SOIL DENSITY/CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
1						Void		
2								
3	NA	2.5 ft	Dry	Stiff	Gray-Brown	Sandy Clay	CL	
4								
5								
6								
7	NA	4 ft	Wet	Loose	Gray-Brown	Fine to Medium Sand	SP	Boring consists
8								of layers of
9								saturated soils
10		4 ft	Dry	Loose		Medium Sand	SP	from a depth of
11								5 ft to EOB.
12								
13								
14		4 ft	Moist	Loose		Medium to Coarse Sand	SP	
15								
16			Wet	Stiff		Sandy Clay	SC-CL	
17						End of boring = 16 feet.		
18								
19								
20								
21								
22								
23								
24								
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26								
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29								
30								
31								
32								
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38								
39								
40								

REMARKS Boring backfilled with bentonite chips.



PROJECT: LBWL - Erickson PAGE 1 OF 1  
 PROJECT NO.: BORING CW-SB-02  
 ELEVATION: DATE 10/2/2018  
 FIELD GEOLOGIST: Tim Mayotte RIG Geoprobe

SAMPLE NO., TYPE & DEPTH (ft)	BLOWS/SIX INCHES OR RQD (%)	SAMPLE RECOVERY/SAMPLE LENGTH (ft)	MATERIAL MOISTURE & WATER DEPTH (ft)	MATERIAL DESCRIPTION*			USCS OR ROCK BROKENNESS	REMARKS
				SOIL DENSITY/CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
1						Void		
2								
3	NA	3 ft	Dry	Stiff	Gray-Brown/	Clay	CL	
4					Black			
5								
6								
7	NA	4 ft	Wet	Loose	Gray-Brown	Medium Sand	SP	Boring consists
8								of layers of
9								saturated soils
10		4 ft	Moist	Loose	Gray-Brown	Medium Sand	SP	from a depth of
11								5 ft to EOB.
12								
13			Wet					
14		4 ft		Loose	Gray-Brown	Medium Sand	SP	
15			Moist					
16								
17						End of boring = 16 feet.		
18								
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REMARKS Boring backfilled with bentonite chips.





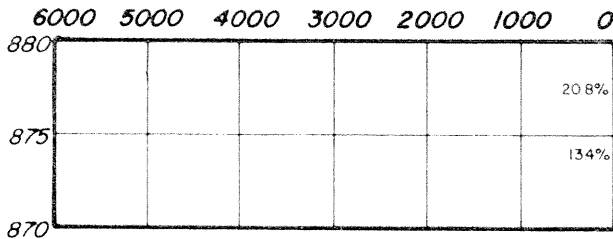
PROJECT: LBWL - Erickson PAGE 1 OF 1  
 PROJECT NO.: BORING CW-SB-03  
 ELEVATION: DATE 10/2/2018  
 FIELD GEOLOGIST: Tim Mayotte RIG Geoprobe

SAMPLE NO., TYPE & DEPTH (ft)	BLOWS/SIX INCHES OR RQD (%)	SAMPLE RECOVERY/SAMPLE LENGTH (ft)	MATERIAL MOISTURE & WATER DEPTH (ft)	MATERIAL DESCRIPTION*			USCS OR ROCK BROKENNESS	REMARKS
				SOIL DENSITY/CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
1			Dry			Void		
2								
3	NA	2.25 ft	Dry	Stiff	Gray-Brown	Clay	CL	
4								
5			Moist - Wet					
6								
7	NA	3 ft	Moist - Wet	Loose	Gray-Brown	Medium Sand	SP	Boring consists
8								of layers of
9			Wet					saturated soils
10		4 ft		Wet	Loose	Gray-Brown	Medium Sand	SP
11			Moist - Wet					5 ft to EOB.
12								
13			Moist - Wet					
14		4 ft		Moist - Wet	Loose	Gray-Brown	Medium Sand	SP
15								
16								
17						End of boring = 16 feet.		
18								
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37								
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40								

REMARKS Boring backfilled with bentonite chips.

ELEVATION IN FEET

SHEARING STRENGTH IN LBS./SQ.FT.



BULK SAMPLES  
BAG SAMPLES

TEST PIT AP-1

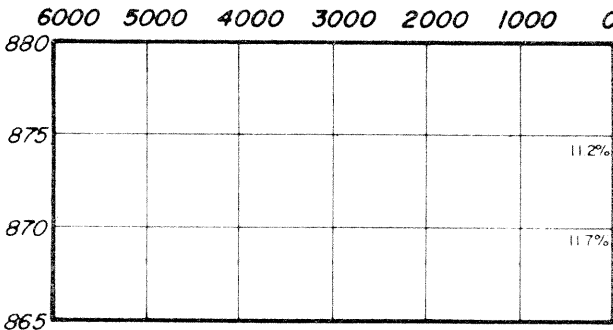
SURFACE ELEVATION 879.6

SYMBOLS	DESCRIPTIONS
ML	DARK BROWN CLAYEY SILT WITH ROOTS - TOPSOIL (9')
SC	MOTTLED BROWN AND GRAY CLAYEY FINE SAND WITH SOME SMALL GRAVEL. ROOTS TO 2'-6"
ML	BROWN FINE SANDY SILT WITH SOME SMALL GRAVEL AND TRACE OF CLAY. 3' POCKET OF WATER BEARING FINE SAND ON WEST WALL OF PIT AT 60'

TEST PIT COMPLETED AT 80'  
ON 6/23/69  
MINOR SEEPAGE WATER FROM POCKET OF SAND AT 60'

ELEVATION IN FEET

SHEARING STRENGTH IN LBS./SQ.FT.



BULK SAMPLES  
BAG SAMPLES

TEST PIT AP-2

SURFACE ELEVATION 877.8

SYMBOLS	DESCRIPTIONS
ML	DARK BROWN CLAYEY SILT WITH ROOTS - TOPSOIL (10')
SC	MOTTLED BROWN AND GRAY CLAYEY SAND
SM	MOTTLED BROWN AND GRAY FINE SILTY SAND WITH SOME CLAY AND SMALL GRAVEL
ML	BROWN SILT 2" SEAM OF BROWN FINE TO COARSE SAND WITH GRAVEL AT 5.5'
ML	GRAY CLAYEY SILT WITH SOME FINE SAND AND SMALL GRAVEL

TEST PIT COMPLETED AT 90'  
ON 6/23/69  
MINOR SEEPAGE WATER AT 5.5'

LOG OF TEST PITS

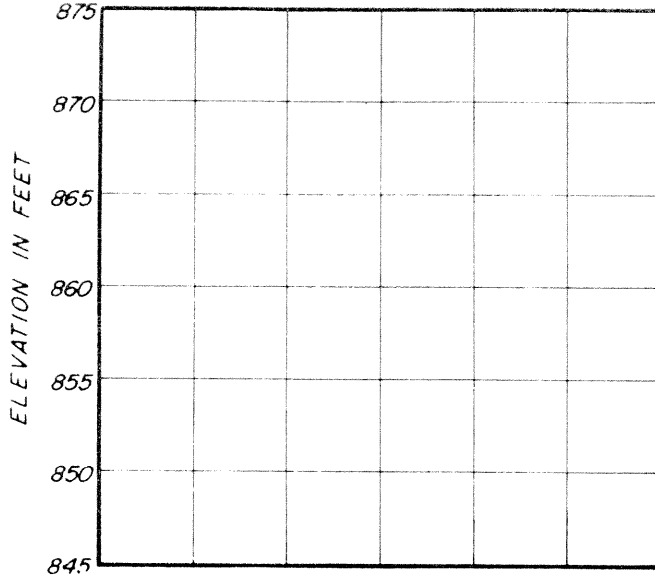
BY \_\_\_\_\_ DATE \_\_\_\_\_  
BY \_\_\_\_\_ DATE \_\_\_\_\_  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

BY \_\_\_\_\_ DATE \_\_\_\_\_  
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BY \_\_\_\_\_ DATE \_\_\_\_\_  
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 CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

BY \_\_\_\_\_ DATE \_\_\_\_\_  
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 CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SHEARING STRENGTH IN LBS./SQ.FT.  
 6000 5000 4000 3000 2000 1000 0



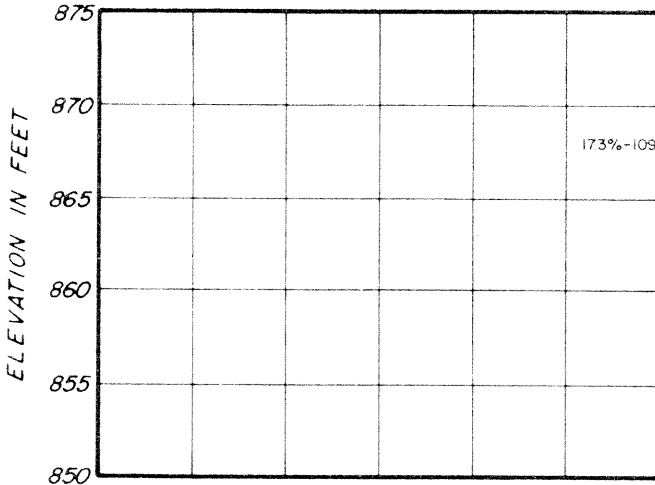
BLOW COUNTS  
 SAMPLES

BORING AP-3  
 SURFACE ELEVATION 872.8

SYMBOLS		DESCRIPTIONS
ML		BROWN SANDY SILT WITH ROOTS - TOPSOIL (6")
CL		BROWN SANDY CLAY WITH SOME ROOTS ROOTS GRADING OUT AT 2.5'
SC		BROWN CLAYEY SAND GRADING SOME SMALL GRAVEL
CL		BROWN SANDY CLAY WITH SOME SMALL GRAVEL
SP		BROWN FINE TO MEDIUM SAND SEEPAGE WATER ENCOUNTERED AT 7-8' WATER ROSE TO 5-10" IN 15 MINUTES
SP		GRAYISH - BROWN FINE SAND
ML		GRAY FINE SANDY SILT
SC		GRAY CLAYEY FINE SAND WITH SOME SMALL GRAVEL
SP		GRAY SILTY FINE SAND WITH SOME GRAVEL

BORING COMPLETED AT 25.0'  
 ON 7/8/59  
 CASING USED TO A DEPTH OF 14.0'  
 WATER LEVEL NOT RECORDED

SHEARING STRENGTH IN LBS./SQ.FT.  
 6000 5000 4000 3000 2000 1000 0



BLOW COUNTS  
 SAMPLES

BORING AP-4  
 SURFACE ELEVATION 870.7

SYMBOLS		DESCRIPTIONS
OL		BLACK ORGANIC SILT WITH ROOTS - TOPSOIL (12")
SC		GRAY CLAYEY SAND WITH ORGANIC MATTER SEEPAGE WATER ENCOUNTERED AT 2-6"
SC		MOTTLED BROWN AND GRAY CLAYEY SAND WITH POCKETS OF BROWN FINE SAND
ML		MOTTLED BROWN AND GRAY CLAYEY SILT WITH SOME SAND
ML		GRAY CLAYEY SILT WITH FINE SAND
ML		GRAY SILT
ML		GRAY SILT
SW		GRAY FINE TO COARSE SAND WITH SOME SMALL GRAVEL
ML		GRAY SILT

BORING COMPLETED AT 15.0'  
 ON 7/11/59  
 NO CASING USED  
 WATER LEVEL NOT RECORDED

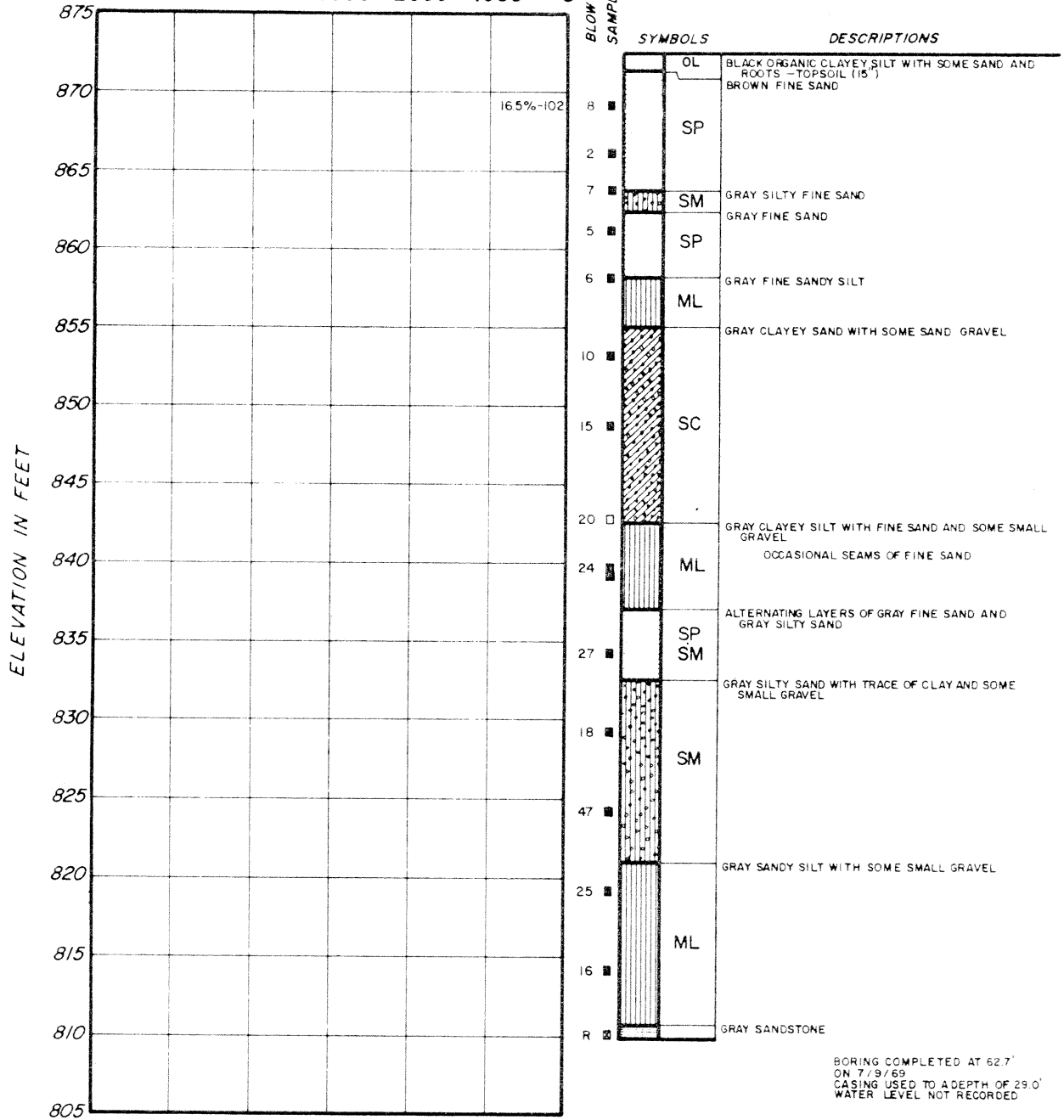
# LOG OF BORINGS

BY \_\_\_\_\_ DATE \_\_\_\_\_  
 BY \_\_\_\_\_ DATE \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 PLATE \_\_\_\_\_ OF \_\_\_\_\_

SHEARING STRENGTH IN LBS./SQ.FT.  
 6000 5000 4000 3000 2000 1000 0

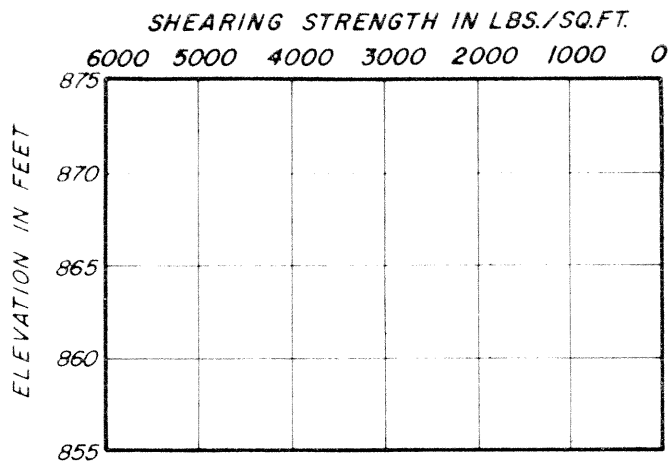
BORING AP-5

SURFACE ELEVATION 872.5



BORING COMPLETED AT 62.7'  
 ON 7/9/69  
 CASING USED TO A DEPTH OF 29.0'  
 WATER LEVEL NOT RECORDED

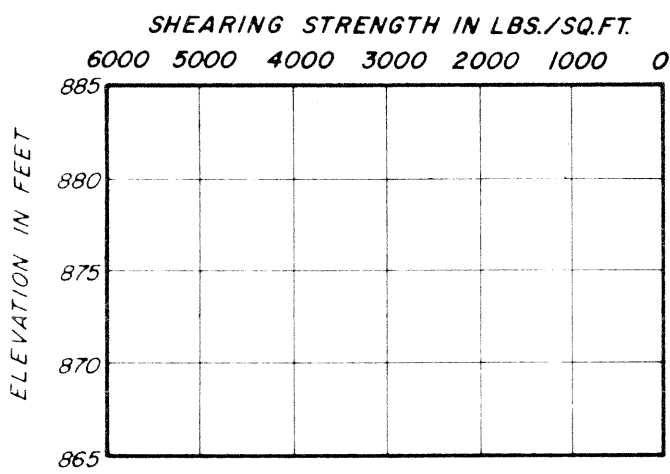
LOG OF BORINGS



**BORING AP-6**  
SURFACE ELEVATION 872.6

SYMBOLS		DESCRIPTIONS
3	CL	BLACK ORGANIC CLAYEY SILT WITH ROOTS - TOPSOIL (9") MOTTLED BROWN AND GRAY SANDY CLAY WITH SOME ROOTS
2	ML	ROOTS GRADING OUT SEEPAGE WATER ENCOUNTERED AT 3'-6" GRAY CLAYEY SILT WITH ORGANIC MATTER
4	ML	GRAY FINE SANDY SILT
6	ML	
11	SC	GRAY CLAYEY FINE SAND WITH SOME SMALL GRAVEL

BORING COMPLETED AT 150'  
ON 7/9/69  
NO CASING USED  
WATER LEVEL NOT RECORDED



**BORING AP-7**  
SURFACE ELEVATION 882.6

SYMBOLS		DESCRIPTIONS
4	ML	DARK BROWN CLAYEY SILT WITH ROOTS - TOPSOIL (9") MOTTLED BROWN AND GRAY SANDY CLAY
11	SM	SEEPAGE WATER ENCOUNTERED AT 3'-1" MOTTLED BROWN AND GRAY SILTY SAND WITH TRACE OF CLAY
19	SP	BROWN FINE TO MEDIUM SAND
13	CL	GRAY SANDY CLAY WITH SOME SMALL GRAVEL
9	ML	GRAY CLAYEY SILT WITH FINE SAND

BORING COMPLETED AT 150'  
ON 7/11/69  
NO CASING USED  
WATER LEVEL NOT RECORDED


## LOG OF BORINGS

BY \_\_\_\_\_ DATE \_\_\_\_\_  
 BY \_\_\_\_\_ DATE \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

# PHOTOGRAPHIC LOG

<b>Customer:</b> LBWL	<b>Project No.:</b> LBWL-1018-001
<b>Site Name:</b> 3725 South Canal Road	<b>Site Location:</b> Delta Township, Michigan
<b>Photographer:</b> Tim Mayotte	
<b>Photo No.:</b> 1	
<b>Date:</b> June 2014	
<b>Direction:</b> East	
<b>Notes:</b> Two test pits excavated within footprint of Retention Basin. Note standing water.	
<b>Photographer:</b> Tim Mayotte	
<b>Photo No.:</b> 2	
<b>Date:</b> June 2014	
<b>Direction:</b> NA	
<b>Notes:</b> View into test pit within footprint of Forebay. Soils are sandy clays and clayey sands. Soil conditions are dry despite surface moisture.	

# PHOTOGRAPHIC LOG

<b>Customer:</b> Allen-Bailey Tag & Label	<b>Project No.:</b> ABT-0318-001
<b>Site Name:</b> 3177 Lehigh Street	<b>Site Location:</b> Caledonia, NY 14423
<b>Photographer:</b> Tim Mayotte	
<b>Photo No.:</b> 3	
<b>Date:</b> April 6, 2018	
<b>Direction:</b> NA	
<b>Notes:</b> View into test pit within footprint of Forebay. Soils are sandy clays and clayey sands. Soil conditions are dry despite surface moisture.	
<b>Photographer:</b> Tim Mayotte	
<b>Photo No.:</b> 4	
<b>Date:</b> April 6, 2018	
<b>Direction:</b> NA	
<b>Notes:</b> View into test pit within footprint of Retention Basin. Soils are sandy clays and clayey sands. Soil conditions are dry despite surface moisture.	

# PHOTOGRAPHIC LOG

<b>Customer:</b> Allen-Bailey Tag & Label	<b>Project No.:</b> ABT-0318-001
<b>Site Name:</b> 3177 Lehigh Street	<b>Site Location:</b> Caledonia, NY 14423
<b>Photographer:</b> Tim Mayotte	
<b>Photo No.:</b> 5	
<b>Date:</b> April 6, 2018	
<b>Direction:</b> NA	
<b>Notes:</b> View into test pit within footprint of Retention Basin. Soils are sandy clays and clayey sands. Soil conditions are dry despite surface moisture.	
<b>Photographer:</b> Tim Mayotte	
<b>Photo No.:</b> 6	
<b>Date:</b> April 6, 2018	
<b>Direction:</b> South	
<b>Notes:</b> View into test pit within footprint of Retention Basin. Soils are sandy clays and clayey sands. Soil conditions are dry despite surface moisture.	



# GEOTECHNICAL TESTING SUMMARY

LBWL - Erickson Station - Foundation Samples  
MD&E Project No.



SAMPLE	CLASSIFICATION	%Fines	LL%	PI%	w <sup>o</sup> / <sub>field</sub>	w <sup>o</sup> / <sub>opt</sub>	ρ <sub>d</sub> (lbs/ft <sup>3</sup> )	K (cm/s)
EW-F-01	Clayey Sand	29.50	NA	NA	NA	9.20	124.24	NA
EW-F-02	Clayey Sand	14.10	NA	NA	NA	8.25	129.23	NA
EW-F-03	Clayey Sand	9.70	NA	NA	NA	12.00	121.11	NA
EW-F-04	Clayey Sand	9.80	NA	NA	NA	8.50	125.92	NA
EW-F-05	Clayey Sand	16.30	NA	NA	NA	8.30	126.86	NA
EW-F-06	Clayey Sand	12.20	NA	NA	NA	7.85	131.10	NA
EW-T-01	Clayey Sand	NA	NA	NA	NA	10.00	133.60	NA
EW-T-02	Clayey Sand	NA	NA	NA	NA	9.80	127.67	NA
EW-T-03	Clayey Sand	NA	NA	NA	NA	9.30	127.98	NA
West Floor	Clayey Sand	13.10	NA	NA	NA	9.00	128.61	NA
South Floor	Clayey Sand	17.60	NA	NA	NA	7.95	129.98	NA
<b>Ranges/Averages:</b>								

NOTES:

**GRAIN SIZE ANALYSIS**

**Sieve Analysis**

Project: LBWL - Erickson Ash Impoundment Reconfiguration  
 Sample: E. Floor Cut Stockpile  
 Test Date: 7/8/2014  
 Test Personnel: TJM  
 Visual Classification: Clayey sand



Wt. of Soil Container (g): 31.50  
 W. of Container w/Dry Soil (g): 700.00  
 Wt. of Dry Soil (g): 668.50

Sieve Number	Diameter (mm)	Mass of Sieve (g)	Mass of Sieve/Soil (g)	Soil Retained (g)	Percent Retained	Percent Passing
4	4.750	419.50	435.50	16.0	2.4%	97.6%
10	2.000	391.00	431.50	40.5	6.1%	91.5%
20	0.840	322.00	364.50	42.5	6.4%	85.2%
40	0.425	284.50	326.00	41.5	6.2%	79.0%
60	0.250	264.50	331.50	67.0	10.0%	69.0%
100	0.150	258.00	383.50	125.5	18.8%	50.2%
200	0.075	244.50	382.50	138.0	20.6%	29.5%
Pan	---	366.50	561.50	195.0	29.2%	0.4%
				666.0		

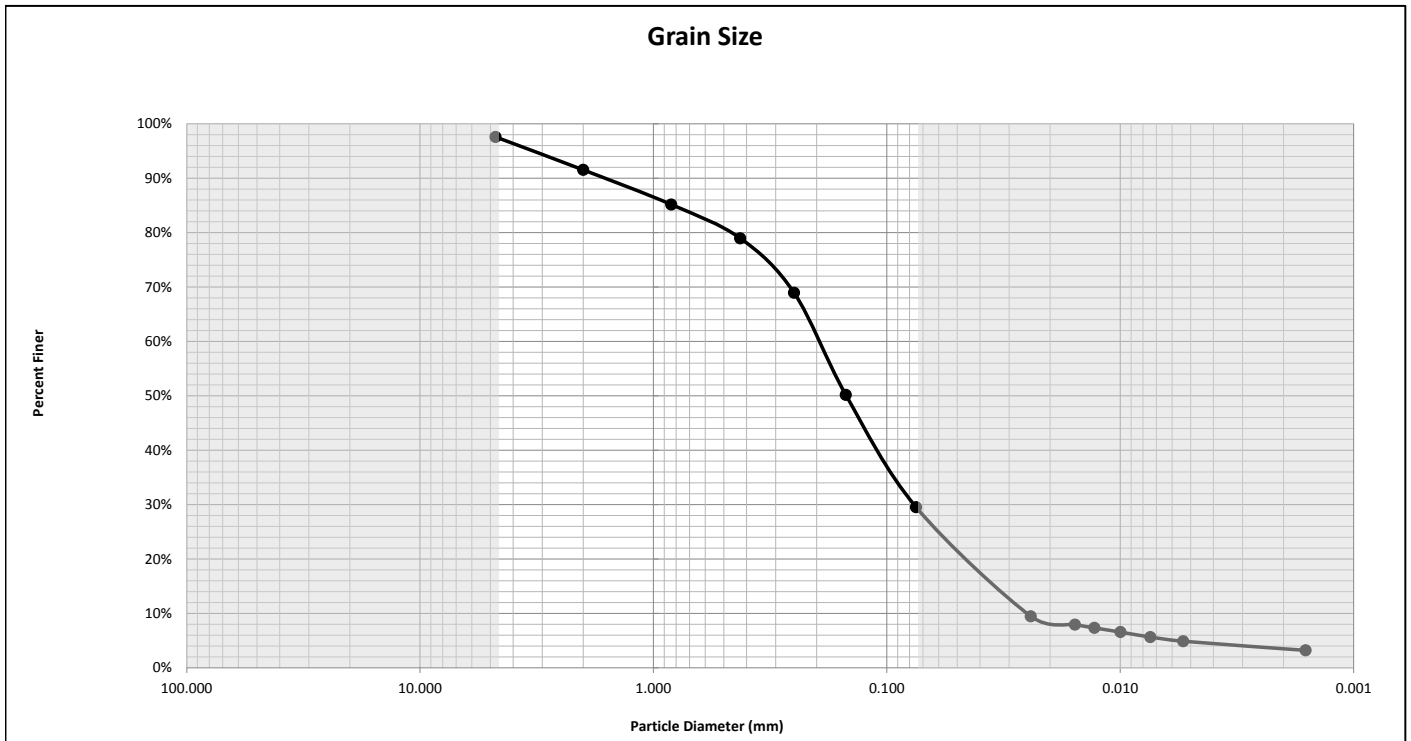
% Gravel: 2.4%      D<sub>10</sub>: 0.025 mm  
 % Sand: 68.1%      D<sub>30</sub>: 0.075 mm  
 % Fines: 29.2%      D<sub>60</sub>: 0.2 mm

C<sub>u</sub>: 8  
 C<sub>c</sub>: 1      Well Graded

**Hydrometer Analysis**

Test Date: 8-Jul-14  
 Hydrometer Number: 152H  
 Specific Gravity of Soil: 2.55  
 Dispersing Agent: SHMP  
 Weight of Soil Sample (g): 194.5  
 Zero Correction: 6  
 Meniscus Correction: 1

Date	Time	Elapsed Time (min)	Temp °C	Hydrom. Reading	Corrected Hydrom. Reading	L	k	D (mm)	C <sub>r</sub>	a	R <sub>c</sub>	P	P <sub>A</sub>
		0	24	75	76	6.5	0.01342	---	1	1.02	---	---	---
		2	24	67	68	6.5	0.01342	0.02419	1	1.02	62	32.5	9.5%
		5	24	57	58	6.8	0.01342	0.01565	1	1.02	52	27.3	8.0%
		8	24	53	54	7.4	0.01342	0.01291	1	1.02	48	25.2	7.3%
		15	24	48	49	8.3	0.01342	0.00998	1	1.02	43	22.6	6.6%
		30	24	42	43	9.2	0.01342	0.00743	1	1.02	37	19.4	5.7%
		63	24	37	38	10.1	0.01342	0.00537	1	1.02	32	16.8	4.9%
		836	24	26	27	12	0.01342	0.00161	1	1.02	21	11.0	3.2%



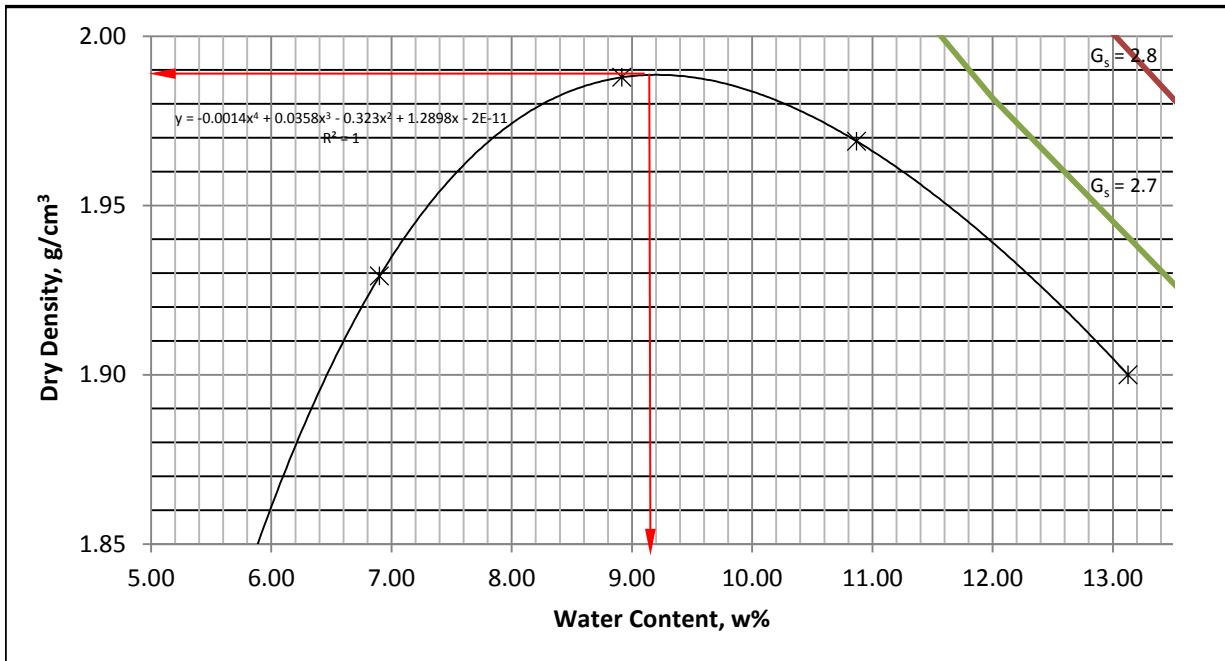
**Unified Classification of Sample:** Silty Clay or Clayey Sand

**MOISTURE-DENSITY (Compaction) TEST**



Test Method: Standard Proctor (Method A) ASTM 698  
 Test Date: 8-Jul-14  
 Test Personnel: T. Mayotte  
 Project: LBWL - Erickson  
 Sample: EW-F-01  
 Visual Classification of Soil: SC-SM

Test No.	1	2	3	4	5	6
w% (assumed)	7.00	9.00	11.00	13.00		
WC Tin No.	4B	3B	1F	1Y		
M <sub>c</sub> (g)	13.91	13.79	13.86	14.23		
M <sub>cms</sub> (g)	77.27	101.85	104.24	107.13		
M <sub>cds</sub> (g)	73.18	94.64	95.38	96.35		
M <sub>s</sub> (g)	59.27	80.85	81.52	82.12	0.00	0.00
M <sub>w</sub> (g)	4.09	7.21	8.86	10.78	0.00	0.00
w%	6.90	8.92	10.87	13.13	#DIV/0!	#DIV/0!
Mold No.	B	B	B	B		
Mold Vol (cm <sup>3</sup> )	952.61	952.61	952.61	952.61		
M <sub>mold</sub> (g)	2282.00	2282.00	2282.00	2282.00		
M <sub>m</sub> + M <sub>cs</sub> (g)	4246.50	4344.50	4361.50	4329.50		
M <sub>mms</sub> (g)	1964.50	2062.50	2079.50	2047.50	0.00	0.00
ρ <sub>ws</sub> (g/cm <sup>3</sup> )	2.06	2.17	2.18	2.15	#DIV/0!	#DIV/0!
ρ <sub>d</sub> (g/cm <sup>3</sup> )	1.93	1.99	1.97	1.90	#DIV/0!	#DIV/0!



Optimum Moisture Content: **9.2 %**

Maximum Dry Density: **1.99 g/cm<sup>3</sup>**      **124.24 lbs/ft<sup>3</sup>**

**GRAIN SIZE ANALYSIS**

**Sieve Analysis**

Project: LBWL - Erickson Ash Impoundment Reconfiguration  
 Sample: EW-F-01  
 Test Date: 7/8/2014  
 Test Personnel: TJM  
 Visual Classification: Clayey sand



Wt. of Soil Container (g): 31.00  
 W. of Container w/Dry Soil (g): 644.50  
 Wt. of Dry Soil (g): 613.50

Sieve Number	Diameter (mm)	Mass of Sieve (g)	Mass of Sieve/Soil (g)	Soil Retained (g)	Percent Retained	Percent Passing
4	4.750	419.50	482.00	62.5	10.2%	89.8%
10	2.000	391.00	515.00	124.0	20.2%	69.6%
20	0.840	322.00	419.50	97.5	15.9%	53.7%
40	0.425	284.50	341.50	57.0	9.3%	44.4%
60	0.250	264.50	322.50	58.0	9.5%	35.0%
100	0.150	258.00	323.00	65.0	10.6%	24.4%
200	0.075	244.50	307.50	63.0	10.3%	14.1%
Pan	---	366.50	451.50	85.0	13.9%	0.2%
				612.0		

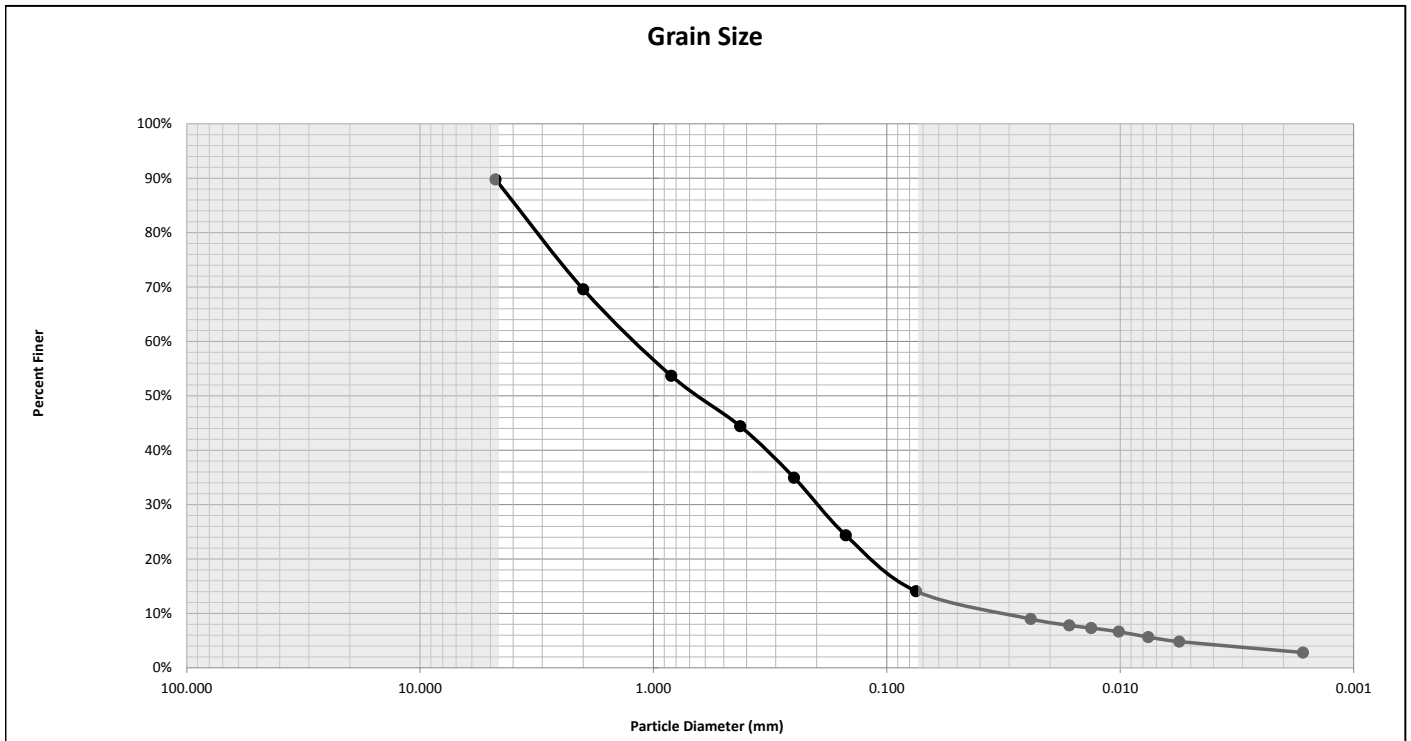
% Gravel: 10.2%      D<sub>10</sub>: 0.03 mm  
 % Sand: 75.7%      D<sub>30</sub>: 0.2 mm  
 % Fines: 13.9%      D<sub>60</sub>: 1.2 mm

C<sub>u</sub>: 40  
 C<sub>c</sub>: 1      Well Graded

**Hydrometer Analysis**

Test Date: 8-Jul-14  
 Hydrometer Number: 152H  
 Specific Gravity of Soil: 2.55  
 Dispersing Agent: SHMP  
 Weight of Soil Sample (g): 85  
 Zero Correction: 7  
 Meniscus Correction: 0

Date	Time	Elapsed Time (min)	Temp °C	Hydrom. Reading	Corrected Hydrom. Reading	L	k	D (mm)	C <sub>r</sub>	a	R <sub>c</sub>	P	P <sub>A</sub>
		0	24	70	70	6.5	0.01342	---	1	1.02	---	---	---
		2	24	60	60	6.5	0.01342	0.02419	1	1.02	54	64.8	9.0%
		5	24	53	53	7.6	0.01342	0.01655	1	1.02	47	56.4	7.8%
		8	24	50	50	7.9	0.01342	0.01334	1	1.02	44	52.8	7.3%
		15	24	46	46	8.6	0.01342	0.01016	1	1.02	40	48.0	6.7%
		30	24	40	40	9.6	0.01342	0.00759	1	1.02	34	40.8	5.7%
		60	24	35	35	10.4	0.01342	0.00559	1	1.02	29	34.8	4.8%
		827	24	23	23	12.5	0.01342	0.00165	1	1.02	17	20.4	2.8%



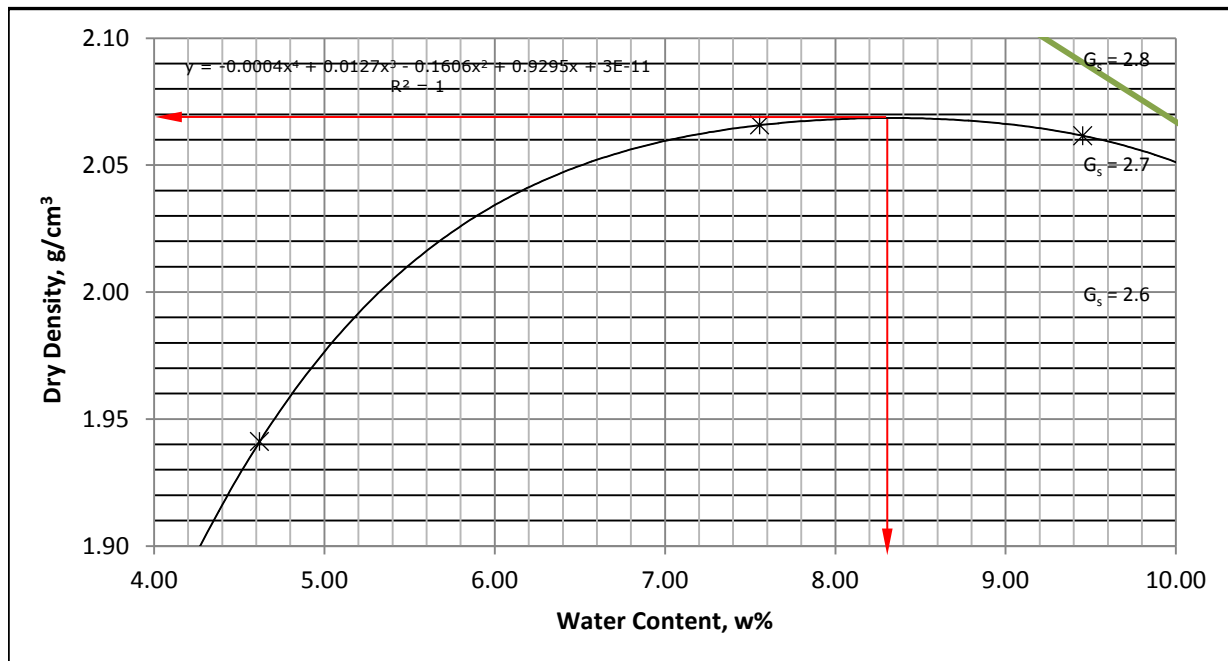
**Unified Classification of Sample:** Silty Clay or Clayey Sand

# MOISTURE-DENSITY (Compaction) TEST



Test Method: Standard Proctor (Method A) ASTM 698  
 Test Date: 8-Jun-14  
 Test Personnel: T. Mayotte  
 Project: LBWL - Erickson  
 Sample: EW-F-02  
 Visual Classification of Soil: SC-SM

Test No.	1	2	3	4	5	6
w% (assumed)	4.00	6.00	8.00	10.00		
WC Tin No.	3O	2C	1T	2D		
M <sub>c</sub> (g)	14.10	14.09	13.76	13.96		
M <sub>cms</sub> (g)	98.80	98.36	93.89	109.27		
M <sub>cds</sub> (g)	95.06	92.44	86.97	99.52		
M <sub>s</sub> (g)	80.96	78.35	73.21	85.56	0.00	0.00
M <sub>w</sub> (g)	3.74	5.92	6.92	9.75	0.00	0.00
w%	4.62	7.56	9.45	11.40	#DIV/0!	#DIV/0!
Mold No.	A	A	A	A		
Mold Vol (cm <sup>3</sup> )	952.61	952.61	952.61	952.61		
M <sub>mold</sub> (g)	2287.00	2287.00	2287.00	2287.00		
M <sub>m</sub> + M <sub>cs</sub> (g)	4221.50	4403.50	4436.50	4391.50		
M <sub>mms</sub> (g)	1934.50	2116.50	2149.50	2104.50	0.00	0.00
ρ <sub>ws</sub> (g/cm <sup>3</sup> )	2.03	2.22	2.26	2.21	#DIV/0!	#DIV/0!
ρ <sub>d</sub> (g/cm <sup>3</sup> )	1.94	2.07	2.06	1.98	#DIV/0!	#DIV/0!



Optimum Moisture Content: **8.25 %**

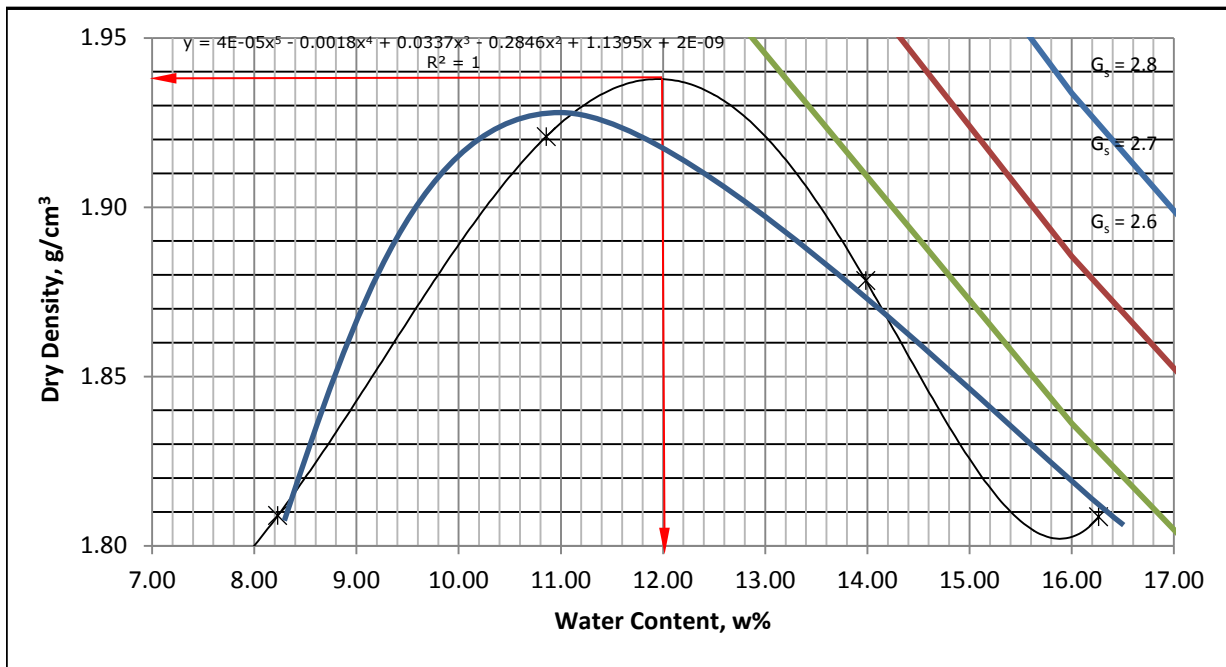
Maximum Dry Density: **2.07 g/cm<sup>3</sup>**      **129.23 lbs/ft<sup>3</sup>**

## MOISTURE-DENSITY (Compaction) TEST

Test Method: Standard Proctor (Method A) ASTM 698  
 Test Date: 10-Jun-14  
 Test Personnel: TJM  
 Project:  
 Sample: EW-F-03  
 Visual Classification of Soil:



Test No.	1	2	3	4	5	6
w% (assumed)	4.00	7.00	10.00	13.00	15.00	
WC Tin No.	1F	2C	3I	4B	2A	
M <sub>c</sub> (g)	13.87	14.08	13.76	13.91	13.84	
M <sub>cms</sub> (g)	99.70	97.85	86.56	90.44	94.33	
M <sub>cds</sub> (g)	95.52	91.48	79.43	81.05	83.07	
M <sub>s</sub> (g)	81.65	77.40	65.67	67.14	69.23	0.00
M <sub>w</sub> (g)	4.18	6.37	7.13	9.39	11.26	0.00
w%	5.12	8.23	10.86	13.99	16.26	#DIV/0!
Mold No.	B	B	B	B	B	
Mold Vol (cm <sup>3</sup> )	952.61	952.61	952.61	952.61	952.61	
M <sub>mold</sub> (g)	2282.00	2282.00	2282.00	2282.00	2282.00	
M <sub>m</sub> + M <sub>cs</sub> (g)	4037.00	4147.00	4310.50	4321.50	4285.00	
M <sub>mms</sub> (g)	1755.00	1865.00	2028.50	2039.50	2003.00	0.00
ρ <sub>ws</sub> (g/cm <sup>3</sup> )	1.84	1.96	2.13	2.14	2.10	#DIV/0!
ρ <sub>d</sub> (g/cm <sup>3</sup> )	1.75	1.81	1.92	1.88	1.81	#DIV/0!



Optimum Moisture Content: 12 %

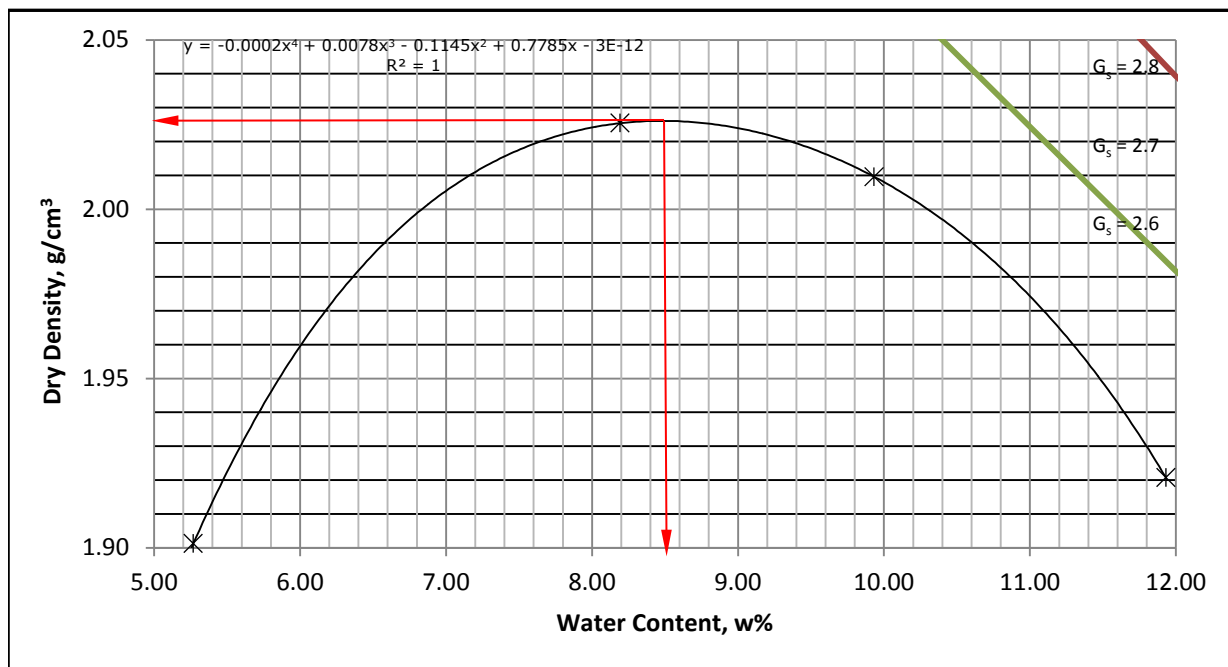
Maximum Dry Density: 1.94 g/cm<sup>3</sup>      121.11 lbs/ft<sup>3</sup>

## MOISTURE-DENSITY (Compaction) TEST

Test Method: Standard Proctor (Method A) ASTM 698  
 Test Date: 11-Jul-14  
 Test Personnel: TJM  
 Project:  
 Sample: EW-F-04  
 Visual Classification of Soil: Fine Sand



Test No.	1	2	3	4	5	6
w% (assumed)	4.00	7.00	10.00	13.00	15.00	
WC Tin No.	2D	3P	3N	3K		
M <sub>c</sub> (g)	13.95	13.86	14.14	14.00		
M <sub>cms</sub> (g)	101.07	107.88	119.07	109.97		
M <sub>cds</sub> (g)	96.71	100.76	109.59	99.74		
M <sub>s</sub> (g)	82.76	86.90	95.45	85.74	0.00	0.00
M <sub>w</sub> (g)	4.36	7.12	9.48	10.23	0.00	0.00
w%	5.27	8.19	9.93	11.93	#DIV/0!	#DIV/0!
Mold No.	A	A	A	A		
Mold Vol (cm <sup>3</sup> )	952.61	952.61	952.61	952.61		
M <sub>mold</sub> (g)	2287.00	2287.00	2287.00	2287.00		
M <sub>m</sub> + M <sub>cs</sub> (g)	4193.50	4374.50	4391.50	4335.00		
M <sub>mms</sub> (g)	1906.50	2087.50	2104.50	2048.00	0.00	0.00
ρ <sub>ws</sub> (g/cm <sup>3</sup> )	2.00	2.19	2.21	2.15	#DIV/0!	#DIV/0!
ρ <sub>d</sub> (g/cm <sup>3</sup> )	1.90	2.03	2.01	1.92	#DIV/0!	#DIV/0!



Optimum Moisture Content: **8.5 %**

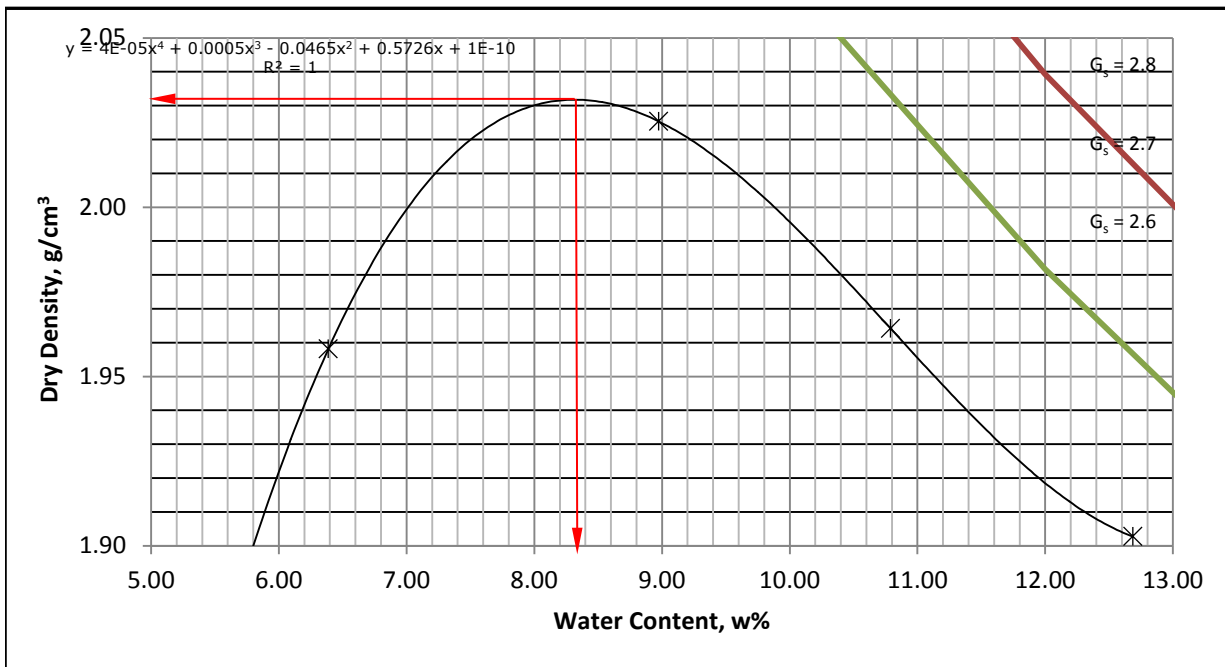
Maximum Dry Density: **2.017 g/cm<sup>3</sup>**      **125.92 lbs/ft<sup>3</sup>**

# MOISTURE-DENSITY (Compaction) TEST



Test Method: Standard Proctor (Method A) ASTM 698  
 Test Date: 13-Jul-14  
 Test Personnel: TJM  
 Project:  
 Sample: EW-F-05  
 Visual Classification of Soil: Fine Sand

Test No.	1	2	3	4	5	6
w% (assumed)	4.00	7.00	9.00	11.00		
WC Tin No.	3L	2D	3A	3D		
M <sub>c</sub> (g)	14.03	13.96	13.97	13.94		
M <sub>cms</sub> (g)	110.79	96.40	106.70	111.65		
M <sub>cds</sub> (g)	104.98	89.61	97.67	100.65		
M <sub>s</sub> (g)	90.95	75.65	83.70	86.71	0.00	0.00
M <sub>w</sub> (g)	5.81	6.79	9.03	11.00	0.00	0.00
w%	6.39	8.98	10.79	12.69	#DIV/0!	#DIV/0!
Mold No.	A	A	A	A		
Mold Vol (cm <sup>3</sup> )	952.61	952.61	952.61	952.61		
M <sub>mold</sub> (g)	2287.00	2287.00	2287.00	2287.00		
M <sub>m</sub> + M <sub>cs</sub> (g)	4271.50	4389.50	4360.00	4329.50		
M <sub>mms</sub> (g)	1984.50	2102.50	2073.00	2042.50	0.00	0.00
ρ <sub>ws</sub> (g/cm <sup>3</sup> )	2.08	2.21	2.18	2.14	#DIV/0!	#DIV/0!
ρ <sub>d</sub> (g/cm <sup>3</sup> )	1.96	2.03	1.96	1.90	#DIV/0!	#DIV/0!



Optimum Moisture Content: **8.3 %**

Maximum Dry Density: **2.032 g/cm<sup>3</sup>**      **126.86 lbs/ft<sup>3</sup>**

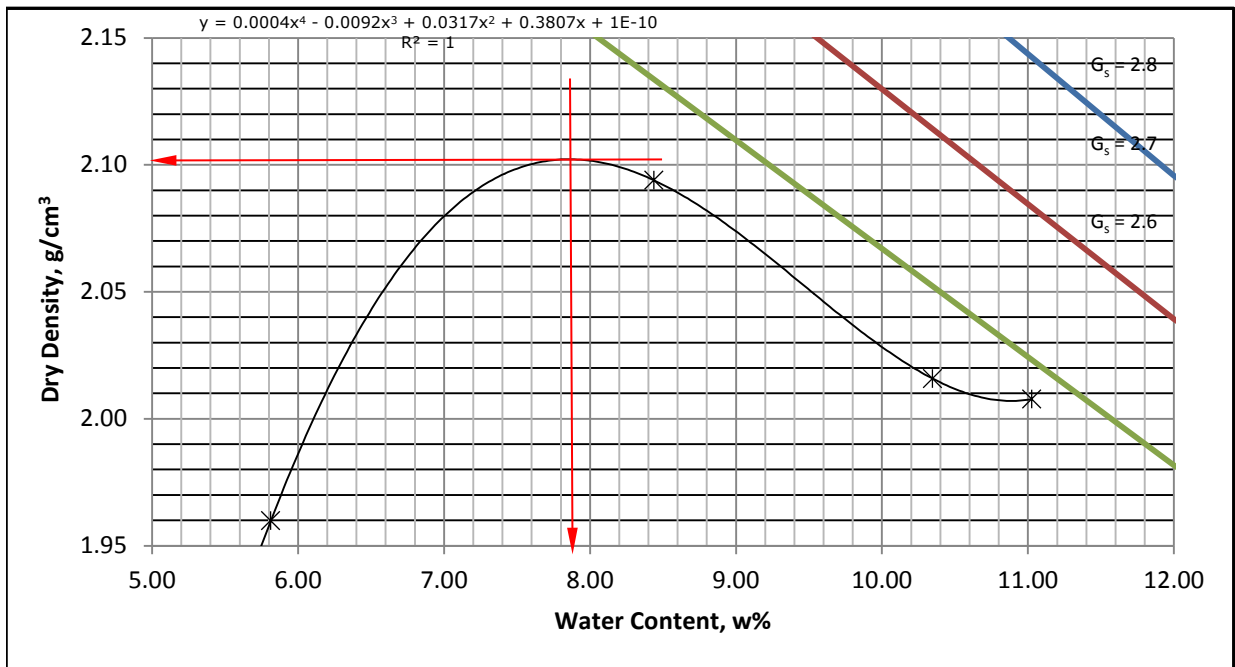


# MOISTURE-DENSITY (Compaction) TEST



Test Method: Standard Proctor (Method A) ASTM 698  
 Test Date: 11-Jul-14  
 Test Personnel: TJM  
 Project:  
 Sample: EW-F-06  
 Visual Classification of Soil:

Test No.	1	2	3	4	5	6
w% (assumed)	4.00	7.00	10.00	13.00	15.00	
WC Tin No.	3D	3G	3A	3M		
M <sub>c</sub> (g)	13.94	14.04	13.97	13.95		
M <sub>cms</sub> (g)	95.48	106.17	99.41	104.27		
M <sub>cds</sub> (g)	91.00	99.00	91.40	95.30		
M <sub>s</sub> (g)	77.06	84.96	77.43	81.35	0.00	0.00
M <sub>w</sub> (g)	4.48	7.17	8.01	8.97	0.00	0.00
w%	5.81	8.44	10.34	11.03	#DIV/0!	#DIV/0!
Mold No.	A	A	A	A		
Mold Vol (cm <sup>3</sup> )	952.61	952.61	952.61	952.61		
M <sub>mold</sub> (g)	2287.00	2287.00	2287.00	2287.00		
M <sub>m</sub> + M <sub>cs</sub> (g)	4262.50	4450.00	4406.00	4410.50		
M <sub>mms</sub> (g)	1975.50	2163.00	2119.00	2123.50	0.00	0.00
ρ <sub>ws</sub> (g/cm <sup>3</sup> )	2.07	2.27	2.22	2.23	#DIV/0!	#DIV/0!
ρ <sub>d</sub> (g/cm <sup>3</sup> )	1.96	2.09	2.02	2.01	#DIV/0!	#DIV/0!



Optimum Moisture Content: **7.85 %**

Maximum Dry Density: **2.1 g/cm<sup>3</sup>**      **131.10 lbs/ft<sup>3</sup>**