FENNER’S DITCH CASE STUDY
Muskegon County, Michigan

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KEY FINDINGS OF HISTORIC INFORMATION

1. Well was drilled in 1929 to a depth of 2,039 feet into the Dundee Limestone Formation.
2. Well was abandoned in 1931.
3. Hundreds of feet of upper casing was pulled from the borehole during abandonment.
4. The borehole was filled with drilling mud, and iron balls were placed at 290 feet and 1,106 feet.
5. In or around the 1950’s, Fenner’s Ditch was excavated and widened to support recreational boating, removing any surface impression of the former well.
### VC-3 (1-5) (Sed)
- 8/3/2010
- 1,2,4-TMB: 78 ppm
- 1,2,3-TMB: IL
- Cyclohexane: 3200 ppm
- Isopropylbenzene: 260 ppm
- n-Butylbenzene: 580 ppm
- p-Propylbenzene: 400 ppm
- s-sec-Butylbenzene: 580 ppm
- Xylenes (total): 580 ppm
- Other VOCs: ND
- PAHs: ND

### MSB-1 (7-8) (GW)
- 8/2/2010
- 1,2,4-TMB: 78 ppm
- 1,2,3-TMB: 49 ppm
- 1,3,5-TMB: 13 ppm
- Cyclohexane: 220 ppm
- n-propylbenzene: 11 ppm
- Xylenes (total): 186 ppm
- Other VOCs: ND
- PAHs: ND

### MSB-2 (C-5) (GW)
- 8/2/2010
- VOCs: ND
- PAHs: ND

### MSB-3 (7-9) (GW)
- 8/2/2010
- VOCs: ND
- PAHs: ND

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## Approximate Reported Potential Locations of Former Dolly Damm #4 Oil Well

- VC-1
- VC-2
- VC-3
- VC-4
- VC-5
- VC-6
- VC-7
- VC-8
- VC-9
- VC-10

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**DEQ**
Feasibility Study Grant

• August 2015: MDEQ receives a grant from EPA-Great Lakes Restoration Initiative (GLRI) to perform a Focused Feasibility Study
  – Evaluate options/costs for identifying and/or locating the source of the oil seep
  – Evaluate options/costs for capturing, containing, or otherwise mitigating the venting oil.
  – $41,400 awarded
Feasibility Study Results

• Remedial Investigation
  – High resolution direct sensing to establish limits of free-phase product
  – Supplemental soil and groundwater sampling to provide definitive analytical data to support risk decisions

• Mitigation Approach
  – Several remedial options identified
  – Selection can not be made until the remedial investigation is conducted
Need Additional Funding

• DEQ needed a funding source to conduct the remedial investigation and determine/implement the mitigation strategy

• **August 2016**: EPA provided DEQ with a Pollution Removal Funding Authorization (PRFA) with a cap of $697,000
  
  – Source of funding was the Oil Spill Liability Trust Fund, administered by US Coast Guard

• **March 2018**: additional $250,000 was approved, bringing DEQ cap to $947,000
2010 Investigation – Area of Impact
Conceptual Site Model
GeoProbe® Optical Image Profiler Deployment
Field Investigation Photos
Representative OIP Log

Basal silty clay

Two horizons of apparent oil saturation
Remedy Selection
NOTES:

1. SELECT CRUSHED STONE TRANSMISSION ZONE TO BE MINIMUM 4 INCHES THICK BETWEEN TOP OF PIPE AND AQUABLOK LAYER.

2. END OF SCREEN TO BE AT 576' - 3" ± 3".

3. WELL PER PRODUCT RECOVERY SUMPS SPECIFICATION ON SHEET 10.

4. SEEDING TO BE PROVIDED.

5. PROVIDE GENERAL WASHED FILL AS REQUIRED TO REACH 6 INCHES BELOW FINAL GRADE.

6. CONTRACTOR TO GRADE GENERAL WASHED FILL AND TOP SOIL TO MATCH FINAL ELEVATION OF CAP AND RIPRAP AND EXISTING GRADES BEYOND THE EXCAVATION LIMITS.

7. SEE PRODUCT RECOVERY SUMPS SPECIFICATION ON SHEET 10 FOR ACCEPTABLE PRODUCTS AND ADDITIONAL INFORMATION.

PRODUCT RECOVERY SUMP DETAIL

(NOT TO SCALE)
Community Outreach

FENNER'S DITCH OIL SEEP PROJECT
LAKEVIEW TOWNSHIP, MUSKEGON COUNTY, MICHIGAN
OCTOBER 2016

The Michigan Department of Environmental Quality (DEQ) and the United States Environmental Protection Agency (USEPA) have determined that there is a small oil seep that may have occurred as a result of the oil spill at Frink Lake in Lakeview Township. Oil seepage has been observed in the vicinity of the oil spill. Oil seepages that have been discovered on the surface of the soil or water have been noted at various sites throughout the area. The Michigan Department of Environmental Quality (DEQ) has determined that the oil seep is a potential threat to public health and the environment. The Lakeview Township has been notified of the potential threat and is taking appropriate action to address the issue.

PROJECT OBJECTIVES

The project objectives are to identify the location of the oil seep and to assess the potential impact of the oil seep on the environment. The project will utilize a combination of field surveys, aerial photography, and geographic information system (GIS) data to identify the location of the oil seep and to assess the potential impact of the oil seep on the environment.

PROJECT IMPLEMENTATION

The project will be implemented in two phases. The first phase will involve the identification of the oil seep and the potential impact of the oil seep on the environment. The second phase will involve the development of a management plan to address the potential impact of the oil seep on the environment.

PROJECT COST

The cost of the project is estimated at $200,000. The project will be funded by the Lakeview Township and the Michigan Department of Environmental Quality (DEQ).

ENVIRONMENTAL CONCERNS

The oil seep is located near a residential area and a highway. The potential impact of the oil seep on the environment is a concern. The oil seep is located near a residential area and a highway. The potential impact of the oil seep on the environment is a concern.

FUTURE WORK

The future work will include the development of a management plan to address the potential impact of the oil seep on the environment. The project will be implemented in two phases. The first phase will involve the identification of the oil seep and the potential impact of the oil seep on the environment. The second phase will involve the development of a management plan to address the potential impact of the oil seep on the environment.

OIL SEEP INVESTIGATION

The first phase of work will involve investigating the oil seep through a series of soil borings and sediment cores. Field work is scheduled to begin October 31, 2016 and will end by November 1st, 2016. The soil borings and sediment cores will be taken in the canal and on land at the locations selected based on the map below.

PROJECT CONSIDERATIONS

Some of the work will involve the use of a small barge in the canal so that sediment cores can be collected. When the work is completed, an containment boom will be deployed in the canal to intercept any spills that may be generated as a result of the work. Boat traffic will be limited to those through the canal on the outside of the containment boom while work is occurring. On land, soil samples will only be collected at properties where DEQ has been granted written access by the property owners.

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Timeline

• Joint Permit Application has been submitted to DEQ/US Army Corp of Engineers for work in the waterway
• Bids have been received and DEQ is in the process of issuing the award
• Contractor is anticipating 3-6 week construction phase
• Ideal schedule is to conduct work in May/June, 2018 with goal of completion by July 1\textsuperscript{st}. 
WE HAVE THE OIL
JUST FRY YOUR FISH
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Questions?