MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Division: RRD
Report to: JEFF LIPPERT
MDEQ-RRD-WARREN
SOUTHEAST MICHIGAN DISTRICT OFF
27700 DONALD COURT, WARREN, MI 48092-2793

Total: $670.50

Lab Work Order # : 80100127
Work Site ID : LB040537
Site Name : THORNE APPLE VALLEY
Received: 01/25/2008
Reported: 01/30/2008
Collected By: JEFF LIPPERT

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AB09566	OIL-01	ORGANIC/OIL/COAL	01/24/2008

Sample Comments :

AB09566 PRIORITY 1 SAMPLE

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director

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Sample Number: AB09566 OIL-01

Volatile Compounds

Analytical Method: 8260 **Date Tested:** 01/28/2008 **Analyst:** RD
Extraction Method: 3585 **Extraction Date:** 01/25/2008 **Qualifier:**

CAS #	Compound	Result mg/Kg	RL	Qualifier	Dilution Factor
SURROGATE	#Bromofluorobenzene#	93.5			
SURROGATE	#Dibromofluoromethane#	114		9	
SURROGATE	#Toluene-d8#	103			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	40		40
71-55-6	1,1,1-Trichloroethane	170	40	2	40
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	40		40
79-00-5	1,1,2-Trichloroethane	Not Detected	40		40
75-34-3	1,1-Dichloroethane	Not Detected	40		40
75-35-4	1,1-Dichloroethylene	Not Detected	40		40
87-61-6	1,2,3-Trichlorobenzene	Not Detected	200		40
96-18-4	1,2,3-Trichloropropane	Not Detected	40		40
526-73-8	1,2,3-Trimethylbenzene	370	40	2	40
120-82-1	1,2,4-Trichlorobenzene	Not Detected	200		40
95-63-6	1,2,4-Trimethylbenzene	1100	40	2	40
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	200		40
106-93-4	1,2-Dibromoethane	Not Detected	40		40
95-50-1	1,2-Dichlorobenzene	180	40	2	40
107-06-2	1,2-Dichloroethane	Not Detected	40		40
78-87-5	1,2-Dichloropropane	Not Detected	40		40
108-67-8	1,3,5-Trimethylbenzene	280	40	2	40
541-73-1	1,3-Dichlorobenzene	Not Detected	40		40
106-46-7	1,4-Dichlorobenzene	Not Detected	40		40
78-93-3	2-Butanone (MEK)	Not Detected	200		40
591-78-6	2-Hexanone	Not Detected	200		40
91-57-6	2-Methylnaphthalene	780	200	X 2	40
67-64-1	2-Propanone (acetone)	Not Detected	800		40
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	200		40
107-13-1	Acrylonitrile	Not Detected	200	5	40
71-43-2	Benzene	Not Detected	40		40
108-86-1	Bromobenzene	Not Detected	40		40
74-97-5	Bromochloromethane	Not Detected	40		40
75-27-4	Bromodichloromethane	Not Detected	40		40
75-25-2	Bromoform	Not Detected	40		40
74-83-9	Bromomethane	Not Detected	200		40
75-15-0	Carbon disulfide	Not Detected	40		40
56-23-5	Carbon tetrachloride	Not Detected	40		40
108-90-7	Chlorobenzene	Not Detected	40		40
75-00-3	Chloroethane	Not Detected	200		40
67-66-3	Chloroform	Not Detected	40		40
74-87-3	Chloromethane	Not Detected	200		40
156-59-2	cis-1,2-Dichloroethylene	Not Detected	40		40

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

Lab Work Order #: 80100127

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Sample Number: **AB09566** **OIL-01**

Volatile Compounds

Analytical Method: 8260 **Date Tested:** 01/28/2008 **Analyst:** RD
Extraction Method: 3585 **Extraction Date:** 01/25/2008 **Qualifier:**

CAS #	Compound	Result mg/Kg	RL	Qualifier	Dilution Factor
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	40		40
110-82-7	Cyclohexane	Not Detected	200		40
124-48-1	Dibromochloromethane	Not Detected	40		40
74-95-3	Dibromomethane	Not Detected	40		40
75-71-8	Dichlorodifluoromethane	Not Detected	200		40
60-29-7	Diethyl ether	Not Detected	200		40
108-20-3	Diisopropyl Ether	Not Detected	200		40
100-41-4	Ethylbenzene	120	40	2	40
637-92-3	Ethyltertiarybutylether	Not Detected	200		40
67-72-1	Hexachloroethane	Not Detected	200		40
98-82-8	Isopropylbenzene	Not Detected	40		40
108383,106423	m & p - Xylene	460	80	2	40
74-88-4	Methyl iodide	Not Detected	40		40
75-09-2	Methylene chloride	Not Detected	200		40
1634-04-4	Methyltertiarybutylether	Not Detected	40		40
91-20-3	Naphthalene	360	200	X 2	40
104-51-8	n-Butylbenzene	Not Detected	40		40
103-65-1	n-Propylbenzene	110	40	2	40
95-47-6	o-Xylene	200	40	2	40
99-87-6	p-Isopropyl toluene	55	40	2	40
135-98-8	sec-Butylbenzene	53	40	2	40
100-42-5	Styrene	Not Detected	40		40
98-06-6	tert-Butylbenzene	Not Detected	40		40
75-65-0	tertiary Butyl Alcohol	Not Detected	2000		40
994-05-8	tertiaryAmylmethylether	Not Detected	200		40
127-18-4	Tetrachloroethylene	280	40	2	40
109-99-9	Tetrahydrofuran	Not Detected	200	5	40
108-88-3	Toluene	230	40	2	40
156-60-5	trans-1,2-Dichloroethylene	Not Detected	40		40
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	40		40
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	200		40
79-01-6	Trichloroethylene	340	40	2	40
75-69-4	Trichlorofluoromethane	Not Detected	40		40
75-01-4	Vinyl chloride	Not Detected	40		40

Unidentified peaks present in sample.

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 01/28/2008 **Analyst:** SC
Extraction Method: 3580 **Extraction Date:** 01/25/2008 **Qualifier:**

CAS #	Compound	Result mg/Kg	RL	Qualifier	Dilution Factor

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: AB09566 OIL-01

PCBs as Aroclors

Analytical Method: 8082 **Date Tested:** 01/28/2008 **Analyst:** SC
Extraction Method: 3580 **Extraction Date:** 01/25/2008 **Qualifier:**

CAS #	Compound	Result mg/Kg	RL	Qualifier	Dilution Factor
SURROGATE	#Decachlorobiphenyl#	28.0			
SURROGATE	#Tetrachloro-m-xylene#	58.8			
12674-11-2	Aroclor 1016	Not Detected	110		10
11104-28-2	Aroclor 1221	Not Detected	110		10
11141-16-5	Aroclor 1232	Not Detected	110		10
53469-21-9	Aroclor 1242	100	10		10
12672-29-6	Aroclor 1248	Not Detected	110		10
11097-69-1	Aroclor 1254	Not Detected	10		10
11096-82-5	Aroclor 1260	25	10		10
37324-23-5	Aroclor 1262	Not Detected	25		10
11100-14-4	Aroclor 1268	Not Detected	25		10

RLs raised due to matrix interference.

Polynuclear Aromatic Hydrocarbons

Analytical Method: 8270 **Date Tested:** 01/28/2008 **Analyst:** SMH
Extraction Method: 3580 **Extraction Date:** 01/25/2008 **Qualifier:**

CAS #	Compound	Result mg/Kg	RL	Qualifier	Dilution Factor
SURROGATE	#2 - Fluorobiphenyl#	69.3			
SURROGATE	#Nitrobenzene - D5#	84.0			
SURROGATE	#p-Terphenyl-d14#	119			
91-57-6	2-Methylnaphthalene	770			1.0
83-32-9	Acenaphthene	Not Detected			1.0
208-96-8	Acenaphthylene	Not Detected			1.0
120-12-7	Anthracene	Not Detected			1.0
56-55-3	Benzo[a]anthracene	Not Detected			1.0
50-32-8	Benzo[a]pyrene	Not Detected			10
205-99-2	Benzo[b]fluoranthene	Not Detected			10
191-24-2	Benzo[g,h,i]perylene	Not Detected			10
207-08-9	Benzo[k]fluoranthene	Not Detected			10
218-01-9	Chrysene	Not Detected			1.0
53-70-3	Dibenz[a,h]anthracene	Not Detected			10
206-44-0	Fluoranthene	Not Detected			1.0
86-73-7	Fluorene	Not Detected			1.0
193-39-5	Indeno(1,2,3-c,d)pyrene	Not Detected			10
91-20-3	Naphthalene	400			1.0
85-01-8	Phenanthrene	130			1.0
129-00-0	Pyrene	Not Detected			1.0

RLs raised due to matrix interference.
Probable petroleum product(s) present.

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Systems Mgmt Unit: George Krisztian

Lab Work Order #: 80100127

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Sample AB09566 OIL-01

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
7440-43-9	Cadmium - Organic	ND	mg/Kg wet	2		01/30/2008	6010	WN
7440-47-3	Chromium - Organic	ND	mg/Kg wet	2		01/30/2008	6010	WN
7439-92-1	Lead - Organic	1700	mg/Kg wet	10	D	01/30/2008	6010	WN
	Metal Digestion - Organic	Completed				01/29/2008		RG
	Priority 1 Costs	Completed				01/28/2008		CS1
	Silica Gel Cleanup	Completed				01/28/2008	3630	DT
	Gel Permeation Cleanup-Pesticide/PCl	Completed				01/25/2008	3640	DT
	Gel Permeation Cleanup-SVOC Analy	Completed				01/28/2008	3640	DT

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Qualifier Code	Qualifier Description
1	Result(s) and RL(s) are estimated due to low surrogate recovery.
2	Result is estimated due to high surrogate recovery.
3	Result(s) and RL(s) are estimated due to low matrix spike recovery.
4	Result is estimated due to high matrix spike recovery.
5	Result and RL are estimated due to low continuing calibration standard criteria failure.
6	Result is estimated due to high continuing calibration standard criteria failure.
7	Result(s) and RL(s) are estimated due to poor precision.
8	Result(s) and RL(s) are estimated due to low recovery of batch QC.
9	Result outside QC acceptance criteria.
A	Value reported is the mean of two or more determinations.
C	Value calculated from other independent parameters.
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.
E	Result is estimated due to high recovery of batch QC.
F	Amenable cyanide was not analyzed due to low level of total cyanide.
G	Result and RL are estimated due to initial calibration standard criteria failure.
H	Recommended laboratory holding time was exceeded.
I	Dilution required due to matrix interference; reporting limit (RL) raised.
J	Analyte was positively identified. Value is an estimate.
JA	Result is estimated due to multiple Aroclors present.
JC	Result is estimated since confirmation analysis did not meet acceptance criteria
JD	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.
K	RL(s) raised due to matrix interferences.
KR	RL(s) raised due to low sample volume submitted.
KS	RL(s) raised due to low total solids.
KW	RL(s) raised due to light sample weight.
LB	Reported library search compounds are tentative identifications with estimated concentrations.
M	The level of the method preparation blank (MPB) is reported in the qualifier column.
N	Non-homogeneous sample made analysis of sample questionable.
O	Result and RL estimated due to analysis from an open vial.
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.
Q	Quantity of sample insufficient to perform analyses requested.
R	Result confirmed by re-extraction and analysis.
S	Supernatant analyzed.
T	Reported value is less than the reporting limit (RL). Result is estimated.
V	Value not available due to dilution.
W	Reported value is less than the method detection limit (MDL).
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C. 2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis by methods 8270 or 625 as semivolatile organics.
PI	Possible interference may have affected the accuracy of the laboratory result
Z	Result reported below the RL to meet the TDL in RRD Op Memo 2 (10/22/04) multiplied by applicable dilution factor.

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ND : Not Detected

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ug / Kg : microgram / kilogram (ppb)
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Priority One!

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

PRIORITY Yellow

Page ____ of ____
MATRIX=ORGANIC/OIL

LAB ORDER # 80100127

SITE CODE NUMBER	SITE NAME
LB046537	Thorne Apple Valley

DIVISION	DISTRICT/OFFICE	MDEQ PROJECT MANAGER	E-MAIL ADDRESS	PHONE	ACCEPT HT CODES? YES / NO If yes, which parameters?
RRD	SEMI	Jeff Lippert	Lipperti@mi.gov	586 753 3857	

PRIMARY CONTACT PERSON	CONTRACT FIRM NAME (if applicable)	PHONE	AY: 04 INDEX: 44704 PROJECT: 453431	PCA: 30744 PH:
Jeff Lippert		586 753 3857		

OVERFLOW LAB (Required for all samples)
1ST CHOICE: Brighton Analytical 2ND CHOICE:

COLLECTED BY: Jeff Lippert / Jerry Tiernan PHONE:

E-MAIL ADDRESSES TO SEND ADDITIONAL REPORTS TO:
1.) lipperti@michigan.gov
2.)

**** SAFETY INFORMATION REQUIRED ****

SEE BACK OF FORM

LAB USE ONLY		FIELD ID (Sample Identification)	SAMPLE COLLECTED DATE MM/DD/YY	TIME MILITARY	COMMENTS
1	AB 9566	OIL-01	01/24/08	11:45	Priority One! (PCBs)
2	AB				
3	AB				
4	AB				
5	AB				
6	AB				
7	AB				
8	AB				
9	AB				
10	AB				

ORGANIC

OL VOLATILES (8260)

Volatile Full List	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10

PESTICIDES/PCBS (8081/8082)

Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10

BASE NEUTRAL & ACIDS (8270)

BNAs	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10

****ORGANIC SPECIAL REQUESTS****

Library Search Volatiles	1 2 3 4 5 6 7 8 9 10
Library Search Semivolatiles	1 2 3 4 5 6 7 8 9 10
FingerPrint	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

HW

Flashpoint	1 2 3 4 5 6 7 8 9 10
Solubility	1 2 3 4 5 6 7 8 9 10
Other _____	1 2 3 4 5 6 7 8 9 10
Other _____	1 2 3 4 5 6 7 8 9 10
Other _____	1 2 3 4 5 6 7 8 9 10

INORGANIC

MO

Circle Requested Metal and Corresponding Sample No.

ICP (6010)

Cd Cr Cu Ni Pb Zn	1 2 3 4 5 6 7 8 9 10
Ba Co Mn Fe Li	1 2 3 4 5 6 7 8 9 10
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10

Cold Vapor AA (7470/7471)

Hg - Mercury	1 2 3 4 5 6 7 8 9 10

Furnace AA (7060)

As - Arsenic	1 2 3 4 5 6 7 8 9 10

Fuel Analyses

% Cl	1 2 3 4 5 6 7 8 9 10
BTU	1 2 3 4 5 6 7 8 9 10
% Sulfur	1 2 3 4 5 6 7 8 9 10
% Ash	1 2 3 4 5 6 7 8 9 10

Chain-of-Custody

	RELEASED BY / ORGANIZATION	RECEIVED BY / ORGANIZATION	DATE	TIME
Print Name & Organization	Jeff Lippert DEQ	UPS		
Signature	[signature]			
Print Name & Organization	UPS Sealed	Roger A Anderson DEQ	1/25/08	1146
Signature	1Z EW0 134 22 1000 3067	[signature]		

Fill in Safety Section "Back of Form"

Revised October 2006