



MASTEC MANAGEMENT  
SERVICES  
1000 WASHINGTON ST  
WATERBURY, VT 05671

MAY 4 10 34 AM '98

April 30, 1998

Mr. Bob Butler  
Sites Management Section  
VTDEC WMD  
103 South Main St./ West Bldg.  
Waterbury, VT 05671-0404

RE: Additional Site Investigation Report  
Former Leo's Motors, Inc. VTDEC Site #97-2228  
Route 7A and Ways Lane, Manchester Center, VT

Dear Mr. Butler:

Enclosed please find one copy of the Additional Site Investigation Report completed for the above referenced property. Mr. Jerry Coleman of Leo's Motors requested that a copy be forwarded to you for review. Please do not hesitate to call, if you have any questions or comments.

Sincerely,

Robert Higgins  
Engineer

Encl.

cc: Jerry Coleman, Leo's Motors, Inc.  
John Griffin, Wells Real Estate  
GI # 7975248

**ADDITIONAL SITE INVESTIGATION  
REPORT FOR  
FORMER LEO'S MOTORS**

**APRIL 1998**

**Site Location:**

**LEO'S MOTORS  
ROUTE 7A AND WAYS LANE  
MANCHESTER CENTER, VT  
VTDEC SITE #97-2228**

**Prepared For:**

**JERRY COLEMAN  
FORMER LEO'S MOTORS  
PO BOX 546  
MANCHESTER CENTER, VT 05255**

**Prepared By:**



**P.O. Box 943 / 19 Commerce Street Williston, VT 05495 (802) 865-4288**

May 4 10 34 AM '98

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## I. INTRODUCTION

This report details the additional site investigative work conducted by Griffin International Inc. (Griffin) for Mr. Jerry Coleman of Leo's Motors, Inc. The additional investigation was conducted to help define the extent and degree of residual petroleum contamination remaining in the subsurface at the site. Subsurface petroleum contamination was detected at this site during the permanent closure of six (6) gasoline underground storage tanks (USTs) in August of 1997. A former dry well structure was identified at the property, and waste contents were appropriately disposed of, in the context of a Phase II Environmental Site Assessment conducted at the property in August of 1997. The additional investigation consisted of the following tasks:

1. The installation of three additional groundwater monitoring wells
2. Groundwater sample collection from five of the six existing monitoring wells (MW-6 did not contain sufficient water for sampling) and three newly installed monitoring wells to characterize the degree and extent of groundwater contamination.
3. Site survey to include the newly installed monitoring wells and to permit the calculation of groundwater elevations at the site.
4. An updated survey of potential sensitive receptors in the vicinity of Leo's Motors.
5. Preparation of a summary report (this document).

The Vermont Department of Environmental Conservation (VTDEC) requested that this work be completed in a letter to Mr. Jerry Coleman of Leo's Motors from Mr. Chuck Schwer of the VTDEC, dated October 23, 1997. Work at the site was conducted in accordance with the October 31, 1997 Work Plan and Cost Estimate prepared by Griffin. Approval to proceed with this plan was given in a letter dated March 16, 1998 from Mr. Schwer to Mr. Coleman. The site (VTDEC #97-2228) is located in Manchester Center, VT. A Site Location Map is included in Appendix A.

Expenditures related to the further investigation of subsurface petroleum UST contamination will be considered eligible for coverage under the Petroleum Cleanup Fund (PCF). Investigative efforts related to the evaluation of the former floor drain dry well will not be eligible for coverage under the PCF.

The reader is referred to the Griffin, September 1997, *Phase II Environmental Site Assessment Report for Leo's Motors*, for further site history.

## II. INVESTIGATIVE PROCEDURES

### A. Floor Drain Dry Well Closure

A floor drain dry well was excavated and removed from the subsurface at the property on September 22, 1997. The dry well was excavated by Star Construction of Whitehall, NY.

The circular dry well was composed of concrete cinder blocks with a concrete cover; the top of the well was approximately 2 feet below grade. The well measured five feet in diameter and 7 feet in height. The well contained approximately 5 feet of standing sludge. There was a 4 inch diameter solid pipe coming into the well from the building. This pipe originated at the elongate floor drain and was filled with sludge which had a similar consistency, color, and odor to the sludge contained in the dry well. Another 4 inch pipe exited the well to the southwest. This pipe was perforated and led to a bed of stone approximately 30 feet to the southwest of the dry well. The discharge pipe was empty and contained no petroleum odor. There was very little evidence of petroleum staining on the bed of stone. A sample of the stone was collected and screened for volatile organic compounds (VOCs) using an HNU<sup>TM</sup>, Model HW-101 photoionization device (PID). The VOC concentration in this sample was 1.6 parts per million (ppm).

The contents of the dry well and the inlet pipe were placed in eleven 55 gallon drums and hauled and disposed of by Environmental Products and Services of Burlington, VT. A total of approximately 550 gallons of waste sludge was generated during this closure. The cement blocks comprising the walls of the dry well as well as the inlet and the outlet pipes were removed from the subsurface and disposed of as construction debris.

The bottom of the dry well was a distinct dense layer of hard silt. A sample of this silt was collected for screening. The VOC concentration in this sample was 3.8 ppm.

Soil samples were collected for PID screening from the walls of the excavation around the dry well structure. Samples were collected from depths of 2, 4, 5, and 7 feet below grade. The VOC concentrations in these samples were 1.2, 62, 0.8, and 22 ppm, respectively as measured by the PID. Soils in the area consist primarily of sand and gravel. These soil types are consistent with the soils logged during the UST removal in August of 1997.

Following the removal of the dry well system the area was backfilled with approximately 10 cubic yards of clean gravel fill.

## **B. Monitoring Well Installation**

On March 23, 1998 three groundwater monitoring wells were installed by T&K Drilling, Inc., of Troy, New Hampshire using a hollow-stem auger drill rig. The monitoring wells were designated MW-7 through MW-9. MW-7 was installed to help define the downgradient degree and extent of petroleum contamination caused by the former on-site gasoline USTs. MW-8 and MW-9 were installed to evaluate the potential impact of the dry well structure on vicinity soils and groundwater. MW-7 was installed in the expected upgradient direction from the former tank pit. MW-8 was installed downgradient of the former dry well; MW-9 was installed downgradient of the gravel bed which received liquid over flow from this dry well. The locations of the monitoring wells are shown on the Site Map in Appendix A.

Soil samples were collected at approximately five-foot intervals in each boring using a two-foot split spoon sampler. Each soil sample was screened for VOCs by PID. Soils were screened

using the Griffin Jar/Polyethylene Bag Headspace Screening Protocol, which conforms to state and industry standards. Contaminant concentrations and soil characteristics were recorded in detailed boring logs by the supervising Griffin engineer (see the Well Logs in Appendix B). The water table was observed at depths varying from approximately 11 to 20 feet below grade in the three borings.

In addition, soil samples were collected for laboratory analysis from the borings for MW-8 and MW-9. Soil samples from the approximate elevation of the base of the former dry well (10 to 12 feet below grade in MW-8) and gravel bed (3 to 5 feet below grade in MW-9) were collected from the borings and submitted for analysis of SVOCs (by EPA Method 8270 for acid extractables, only) and RCRA 8 Metals. Since there were no detected zones of elevated PID readings in the borings for MW-8 and MW-9, the samples were not analyzed for VOCs.

#### *MW-7*

The boring for MW-7 was advanced to 27 feet below grade, approximately 7.5 feet below the water table. Soils from the boring for MW-7 consisted of dry, brown, medium gravel from 5 to 7 feet below grade. Dry, light brown, medium gravel with some small cobbles was observed from 10 feet below grade to a depth of 12 feet. Dry, brown, medium gravel with coarse sand (till) and some small cobbles was observed from 15 feet to 17 feet below grade. Wet, brown, medium gravel (till) with some small cobbles was observed from 20 feet below grade to a depth of 22 feet. Wet, brown, silt and clay with fine gravel (till) was observed from 25 feet below grade to a depth of 27 feet. Petroleum odors were not observed in the soils from this boring. Soil samples collected for PID screening from MW-7 were non-detect for VOCs. No soil samples were collected for laboratory analysis.

#### *MW-8*

The boring for MW-8 was advanced to 19 feet below grade, approximately 6 feet below the water table. Soils from the boring for MW-8 consisted of medium to fine sand with some silt from 5 to 6 feet below grade. Dry, fine gravel and silt was observed from 6 feet below grade to a depth of 7 feet. Wet, brown, fine sand and silt was observed from 10 feet to 11.3 feet below grade. Wet, gray, fine sand and silt with clay was observed from 11.3 to 12 feet below grade. Wet, gray, silt and clay with some fine gravel (dense till) was observed from 12 feet to 12.5 feet below grade. Dry, gray, hard, dense clay and silt (dense till) was observed from 15 feet to 15.5 feet below grade. Refusal was met by the sampling spoon at 15.5 feet below grade; the auger however, was able to penetrate this layer. Petroleum odors were not observed in the soils from this boring. Soil samples collected for PID screening from MW-8 were non-detect for VOCs.

A soil sample collected from the MW-8 borehole at a depth of 10-12 feet below grade was submitted for laboratory analysis. This depth represented the approximate depth of the base of the former dry well. The sample was analyzed for semi-volatile organic compounds (SVOCs) and RCRA 8 Metals. Sample analysis results are presented in Appendix E. According to the results of the laboratory analysis, no SVOC constituents were detected in the sample above method detection limits. A few of the compounds targeted by the EPA RCRA 8 Metals analysis

were detected in concentrations below their Maximum Contaminant Level (MCL) standard in the sample collected from the MW-8 borehole: arsenic, barium, and chromium.

#### *MW-9*

The boring for MW-9 was advanced to 20 feet below grade, approximately 9 feet below the water table. Soils from the boring for MW-9 consisted of brown fine gravel with coarse sand from 5 to 5.5 feet below grade. Dry, brown, medium to fine sand with little silt was observed from 5.5 to 6.5 feet below grade. Dry, brown, fine sand and silt with trace clay was observed from 6.5 to 7 feet below grade. Dry, brown, fine sand and silt with trace clay was observed from 10 to 10.5 feet below grade. Wet, gray-brown, medium to fine sand with little silt was observed from 10.5 to 11.9 feet below grade. Wet, gray, clay and silt was observed from 11.9 to 12 feet below grade. Wet, gray, dense clay and silt (dense till) was observed from 15 to 17 feet below grade. Petroleum odors were not observed in the soils from this boring. Soil samples collected for PID screening from MW-9 were non-detect for VOCs.

A soil sample collected from the MW-9 borehole at a depth of 3 to 5 feet below grade was submitted for laboratory analysis. This depth represented the approximate depth of the base of the gravel bed. The sample was analyzed for SVOCs and RCRA 8 Metals. Sample analysis results are presented in Appendix E. According to the results of the laboratory analysis, no SVOC constituents were detected in the sample above method detection limits. A few of the compounds targeted by the EPA RCRA 8 Metals analysis were detected in concentrations below their MCL standard in the sample collected from the MW-9 borehole: arsenic, barium, and chromium.

#### *Well Construction Details*

Based on the geology encountered during the installation of MW-8 and MW-9 it would appear that there is a perched water table overlaying a very dense layer of till in this area. During the installation of MW-8, the driller experienced refusal with the sampler spoon at a depth of 15.5 feet below grade following a blow count of 70; the material recovered at this depth was dry. Similar characteristics were encountered during the installation of MW-9. This dense till layer was not punctured in the construction of MW-8 or MW-9.

All three monitoring wells were constructed with two-inch diameter Schedule 40 PVC riser and 0.010-inch slotted screen. The length of the screen and riser varied depending on the depth of the well and the location of the water table in the borehole. A silica sand pack was placed around the screened portion of each well and a bentonite seal was placed above the screen and at the ground surface. To complete the construction of each well, a road box was set in concrete at grade level. In addition, locking well caps were placed on the monitoring wells. Specific well construction details are displayed in the detailed well logs included in Appendix B.

### **C. Determination of Groundwater Flow Direction and Gradient**

On April 9, 1998, depth to water measurements were taken with the use of a Keck™ interface probe in the nine on-site wells. These measurements were subtracted from the top of casing elevations, which were determined relative to an arbitrary datum of 100 feet at the top of the casing for MW-1, to determine the water table elevation at each of the wells. From the monitoring well water table elevation data, the groundwater contours were interpolated onto the site map, and the groundwater flow direction and gradient were determined.

As displayed on the groundwater contour map included in Appendix A, the regional groundwater flow for April 9, 1998, was in a southeasterly direction at a gradient of approximately 7.5%. Under this flow regime MW-1 is located in an upgradient position with respect to the source area. MW-2 is located up to cross-gradient of the source area. MW-3 and MW-4 are located on the downgradient edge of the source area. MW-5 and MW-6 are each positioned down to cross-gradient with respect to the source area. MW-7 is downgradient of the source area. MW-8 is downgradient of the former floor drain dry well, and upgradient of the UST source area. MW-9 is located downgradient of the dry well overflow gravel bed, and upgradient of the UST source area.

No free phase petroleum product was observed in any of the monitoring wells on April 9, 1998. All groundwater level data are recorded in Appendix C.

### **D. Groundwater Sample Collection and Analysis**

On April 9, 1998, immediately following well gauging, samples of the groundwater were collected from eight of the nine on-site monitoring wells; MW-6 did not contain sufficient water for sampling. MW 1 - MW-5 and MW-7 were analyzed by EPA Method 602. Due to the presence of potential floor drain waste in the vicinity of MW-8 and MW-9, these samples were analyzed by EPA Method 8260 for volatile organic compounds. In addition, the samples collected from MW-8 and MW-9 were also analyzed for SVOCs by EPA Method 8270 for acid extractables and for RCRA 8 metals. Results of the laboratory analyses for wells sampled April 9, 1998 are summarized in Appendix D. Laboratory report forms are presented in Appendix E. Applicable groundwater enforcement standards are presented in the summary table in Appendix D.

Benzene, ethylbenzene, toluene, and xylenes are in exceedence of their Vermont Groundwater Enforcement Standards (VGES) in MW-3. Benzene, ethylbenzene, and xylenes are in exceedence of their VGES in MW-4. Benzene is slightly in excess of its VGES in MW-5. None of the petroleum compounds targeted by the analysis were found above method detection limits in the groundwater samples collected from MW-1, MW-2, or MW-7.

Tetrachloroethene (PCE) was detected in MW-8 at a concentration of 2 parts per billion (ppb). This is below the VGES of 5 ppb. Additionally, MTBE was detected in concentration a trace below the quantitation limit of 2 ppb in MW-8. PCE was detected in concentration a trace below the quantitation limit of 1 ppb in MW-9.

Based on the low concentrations of PCE detected in MW-8 and MW-9 and the fact that the wells are screened at the bottom of the saturated zone, it is likely that detected concentrations of PCE are representative of the contaminant concentrations in this area. Additionally, as this sample was collected from an aquifer confined by an impermeable layer of till, it is not likely that PCE is present in free product form.

No SVOC constituents were detected in the samples collected from MW-8 and MW-9 above method detection limits. Barium was detected in the samples collected from both wells in concentrations below applicable standards. No other metals were detected in either sample above method detection limits.

All samples were collected according to Griffin's groundwater sampling protocol which complies with industry and state standards. Results from the analyses of the duplicate and trip blank samples indicate that adequate quality assurance and control (QA/QC) were maintained during sample collection and analysis.

#### **E. Sensitive Receptor Risk Assessment**

In August of 1997, Griffin conducted a sensitive receptor survey in the area immediately surrounding the Leo's Motors site. At that time Griffin identified the onsite building as well as the nearby residences and businesses as potential receptors of petroleum contamination. The results of this latest investigation do not alter these findings.

During the monitoring well installation on March 23, 1998, Griffin screened the ambient air space in the on-site building, as well as the brown house, which is located approximately 170 feet to the southeast of the UST source area, and the fish market, which is located approximately 210 feet to the southeast of the UST source area for VOCs by PID. No VOCs were detected in any building at that time.

Groundwater is found at approximately 10 to 15 feet below grade at the Leo's Motors site; this is much deeper than the 4 to 5 feet below grade where utilities are typically found. Based on this fact it is not likely that underground utilities are serving as a preferential pathway for dissolved contaminant migration at the Leo's Motors site.

There are no surface water bodies within the immediate vicinity of the site. All buildings in the vicinity are serviced by municipal water and sewer systems. No other potential receptors were observed.

It is likely that various natural processes (including biodegradation, dilution, and dispersion) have served and will continue to serve to reduce the overall degree of groundwater contamination at the site. Based on this fact, it would appear that the risk to area receptors has lessened and will continue to lessen over time.

### III. CONCLUSIONS

Based on the additional investigation at this site the following conclusions are presented:

1. As displayed on the groundwater contour map included in Appendix A, the regional groundwater flow for April 9, 1998, was in a southeasterly direction at a gradient of approximately 7.5%.
2. Benzene, ethylbenzene, toluene, and xylenes are in exceedence of their VGES in MW-3. Benzene, ethylbenzene, and xylenes are in exceedence of their VGES in MW-4. Benzene is slightly in excess of its VGES in MW-5.
3. None of the petroleum compounds targeted by the analysis were found above method detection limits in the groundwater samples collected from MW-1, MW-2, or downgradient well MW-7.
4. The apparent source of petroleum contamination, the USTs, has been removed.
5. PCE was detected in low concentrations in MW-8 and MW-9. The source of this contamination, the floor drain discharge dry well has been removed from the subsurface.
6. No SVOC constituents were detected in the samples collected from MW-8 and MW-9 above method detection limits.
7. Barium was detected in the <sup>GW</sup> samples collected from both wells in concentrations below applicable standards. No other metals were detected in either sample above method detection limits.
8. There was no free product present in any of the site wells on April 9, 1998.
9. It is likely that various natural processes (including biodegradation, dilution, and dispersion) have served and will continue to serve to reduce the overall degree of groundwater contamination at the site
10. Based on current data there do not appear to be any receptors at significant risk from subsurface petroleum contamination at Leo's Motors.

#### IV. RECOMMENDATIONS

In order to monitor and track the expected decrease in contaminant concentrations, the monitoring wells in the vicinity of the former gasoline USTs (MW-3, MW-4, MW-5, and MW-7) should be sampled on an annual basis. These samples will be analyzed by EPA Method 602 for the presence of petroleum related compounds. The next sampling event will take place in April of 1999 and continue annually until such time that contaminant concentrations drop below applicable groundwater standards. At that time, Griffin can recommend cessation of groundwater monitoring. At this time Griffin feels that the existing monitoring wells are sufficient for the determination of the extent and degree of petroleum contamination at this site. Griffin does not recommend further investigation or active remediation at this time.

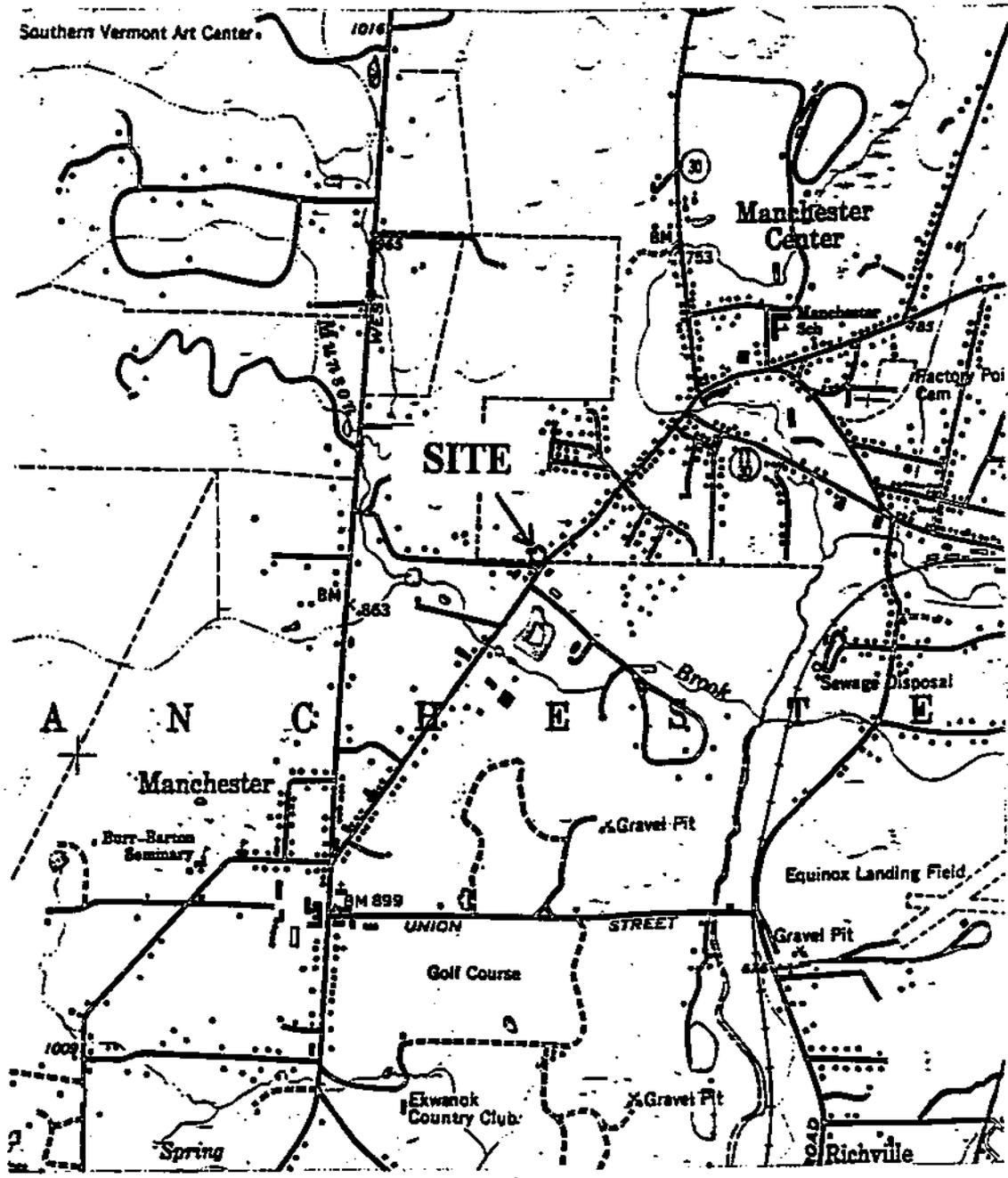
Due to the lack of significant contamination in the vicinity of the former dry well, and the fact that the potential contaminant source (the dry well and its contents) has been removed and disposed of, Griffin recommends that no further monitoring or investigative work be conducted in relation to the former dry well.

**References**

1. Griffin International, Inc., September 1997, *Phase II Environmental Site Assessment Report for Leo's Motors.*

**APPENDIX A**

**Maps**



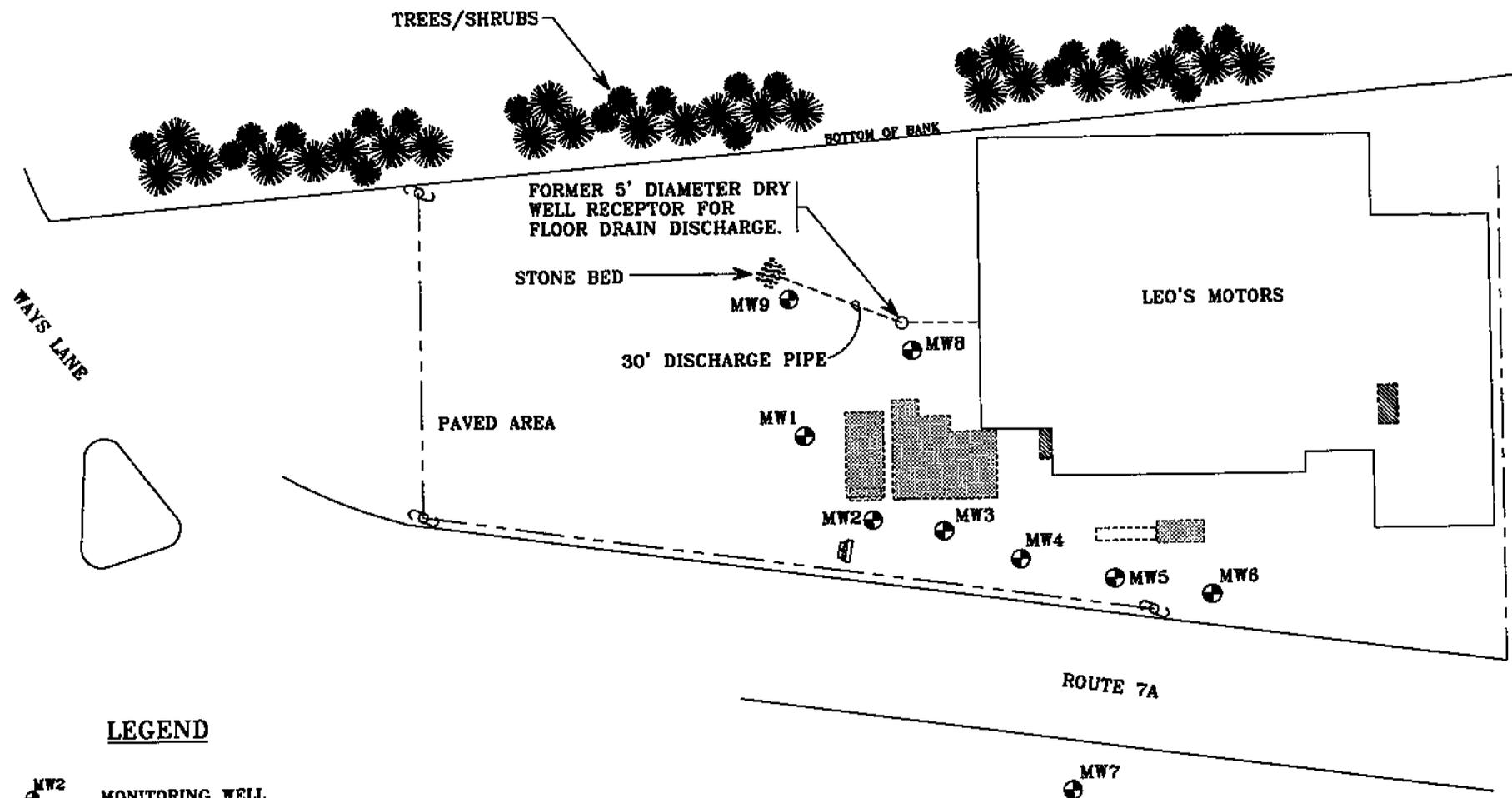
JOB #: 7975248  
 SOURCE: USGS- MANCHESTER, VERMONT QUADRANGLE



**LEO'S MOTORS, INC.**  
 ROUTE 7A AND WAYS LANE  
 MANCHESTER CENTER, VERMONT

**SITE LOCATION MAP**

DATE: 8/7/97	DWG.#:1	SCALE: 1:24000	DRN.:SB	APP.:RH
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**LEGEND**

-  MW2 MONITORING WELL
-  FORMER GASOLINE AND DIESEL FUEL UST LOCATIONS
-  FORMER WASTE OIL AND FUEL OIL USTS ABANDONED IN PLACE
-  FORMER PUMP ISLAND LOCATIONS
-  BUSINESS SIGN
-  UTILITY POLE
-  OVERHEAD POWER LINE
-  FENCE

JOB NO. 7975248

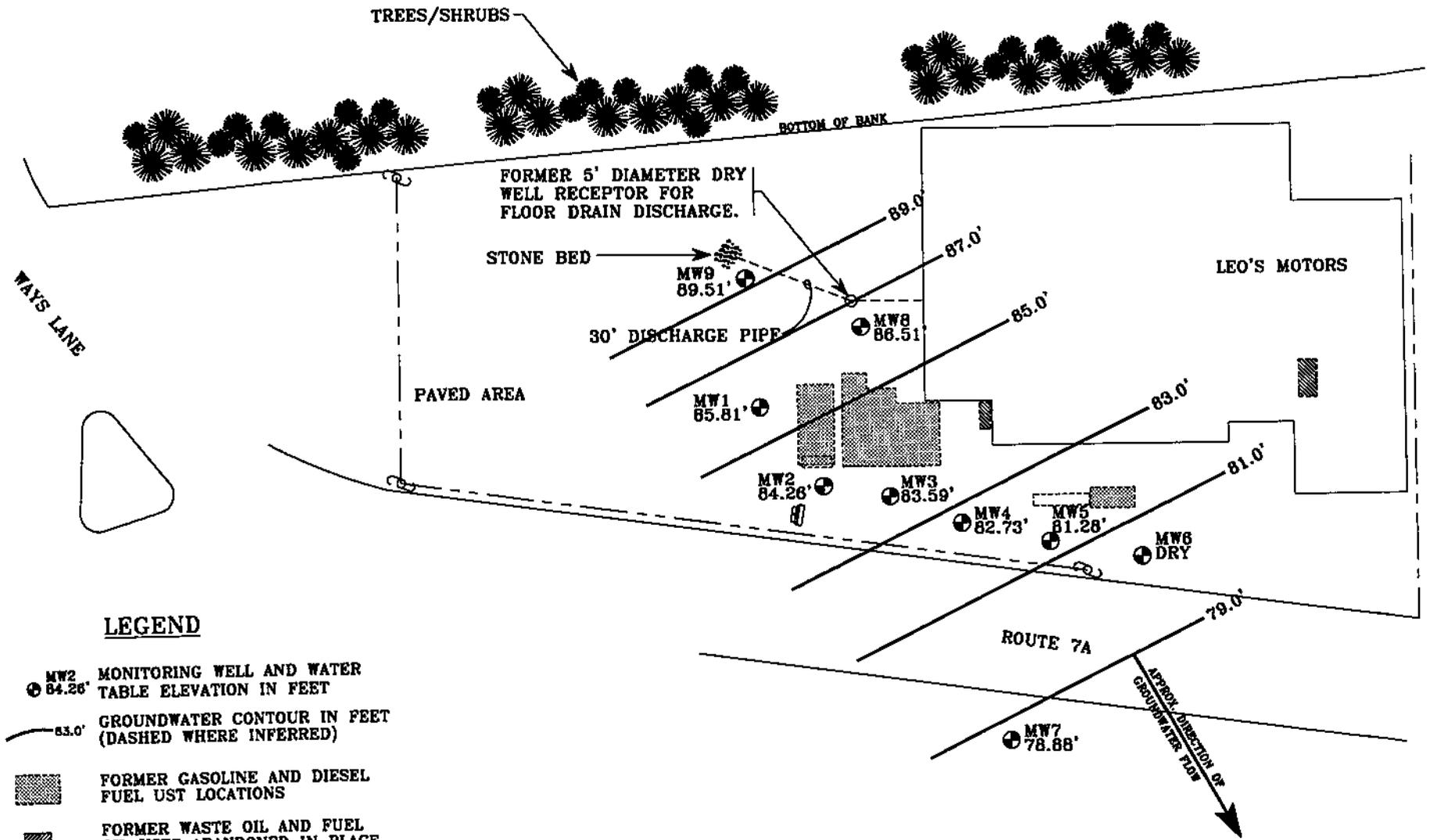


**GRIFFIN INTERNATIONAL**

**LEO'S MOTORS, INC.**  
 ROUTE 7A AND WAYS LANE  
 MANCHESTER CENTER, VERMONT

**SITE MAP**

DATE: 4/27/98	DWG. NO. 2	SCALE: 1"=40'	DRN: SJB	APP: RH
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**LEGEND**

- MW2 84.26' MONITORING WELL AND WATER TABLE ELEVATION IN FEET
- 83.0' GROUNDWATER CONTOUR IN FEET (DASHED WHERE INFERRED)
- FORMER GASOLINE AND DIESEL FUEL UST LOCATIONS
- FORMER WASTE OIL AND FUEL OIL USTS ABANDONED IN PLACE
- FORMER PUMP ISLAND LOCATIONS
- BUSINESS SIGN
- UTILITY POLE
- OVERHEAD POWER LINE
- FENCE

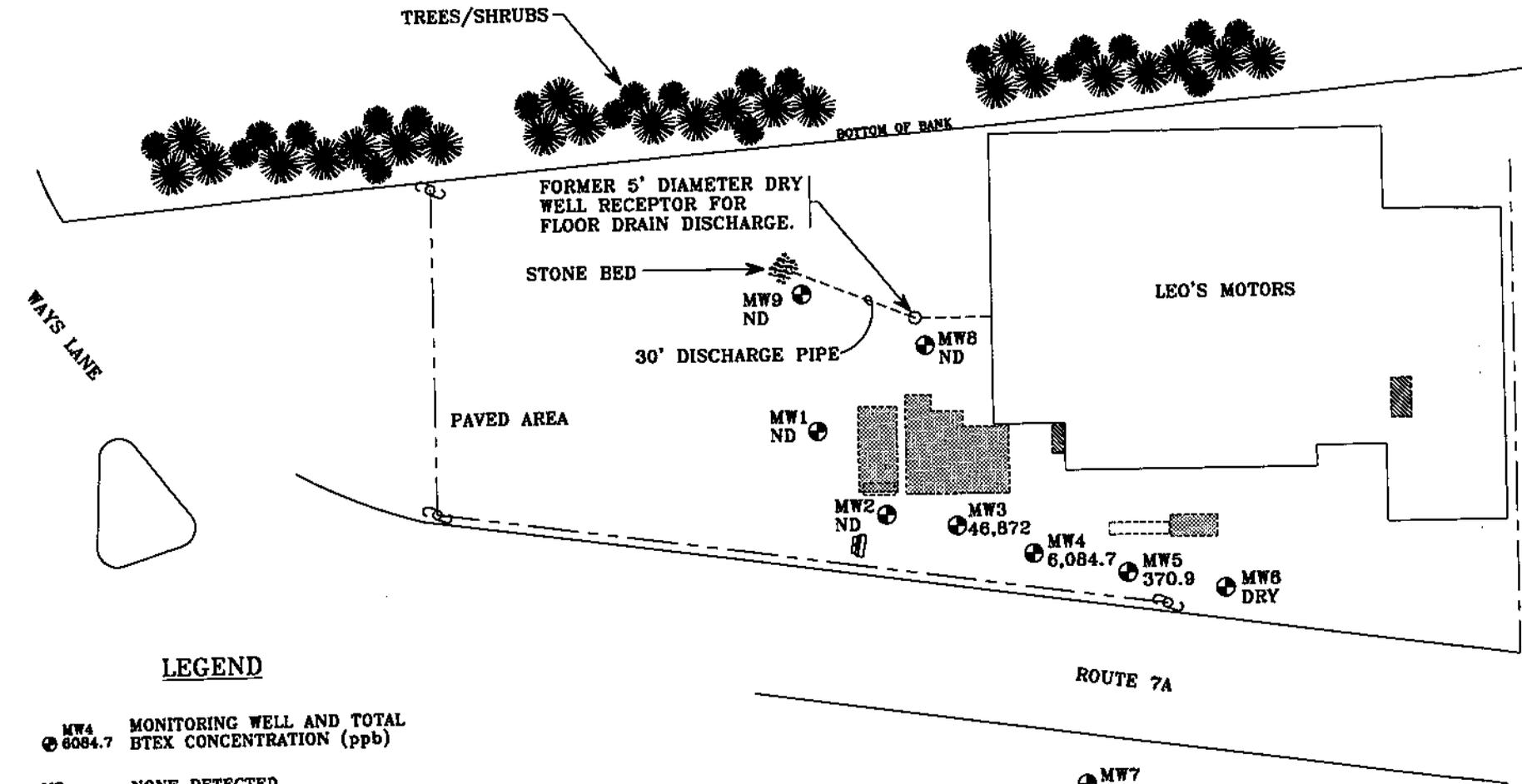
JOB NO. 7973248

**GRIFFIN INTERNATIONAL**

**LEO'S MOTORS, INC.**  
 ROUTE 7A AND WAYS LANE  
 MANCHESTER CENTER, VERMONT

**GROUNDWATER CONTOUR MAP**  
 MEASUREMENT DATE: 4/9/98

DATE: 4/27/98	DWG.#: 2	SCALE: 1"=40'	DRN: SJB	APP: RH
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**LEGEND**

- MW4 6084.7 MONITORING WELL AND TOTAL BTEX CONCENTRATION (ppb)
- ND NONE DETECTED
- FORMER GASOLINE AND DIESEL FUEL UST LOCATIONS
- FORMER WASTE OIL AND FUEL OIL USTS ABANDONED IN PLACE
- FORMER PUMP ISLAND LOCATIONS
- BUSINESS SIGN
- UTILITY POLE
- OVERHEAD POWER LINE
- FENCE



**LEO'S MOTORS, INC.**  
 ROUTE 7A AND WAYS LANE  
 MANCHESTER CENTER, VERMONT

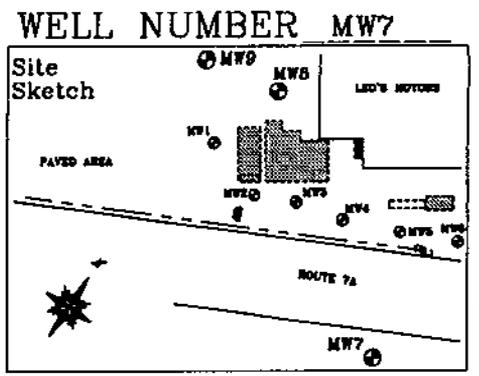
**CONTAMINANT CONCENTRATION MAP**  
 SAMPLE DATE: 4/9/98

DATE: 4/27/98	DWG# 2	SCALE: 1"=40'	DRN: SJB	APP: RH
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**APPENDIX B**

**Well Logs**

PROJECT LEO'S MOTORS  
 LOCATION MANCHESTER, VERMONT  
 DATE DRILLED 3/23/98 TOTAL DEPTH OF HOLE 27.0'  
 DIAMETER 4.25"  
 SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"  
 CASING DIA. 2" LENGTH 14.5' TYPE sch 40 pvc  
 DRILLING CO. T&K DRILLING METHOD HSA  
 DRILLER ALAN TOMMILA LOG BY R. HIGGINS

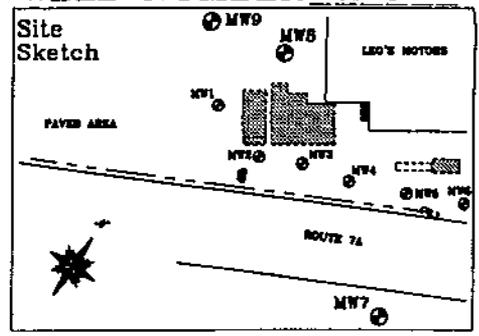


GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0	ROAD BOX				0
0	LOCKING WELL CAP				0
2	CONCRETE				2
4	NATIVE BACKFILL				4
5'-7'	WELL RISER		1/2/3/3 0 ppm	Dark brown fine SAND, trace of silt, loose, no odor, damp	6
10'-12'	BENTONITE		10/12/12/10 0 ppm	Dry, light brown, medium GRAVEL, some small cobbles, no odor.	12
15'-17'	SAND PACK		17/22/21/18 0 ppm	Dry, brown, medium GRAVEL and coarse SAND, (till), some cobbles, no odor.	16
18	WELL SCREEN				18
20'-22'	BOTTOM CAP		12/18/19/24 0 ppm	20.0' WATER TABLE Wet, brown, medium GRAVEL, (till), few cobbles, no odor.	20
25'-27'	UNDISTURBED NATIVE SOIL		18/44/31/29 0 ppm	Wet, brown SILT and CLAY with fine GRAVEL, (till), no odor.	26
28				BASE OF WELL AT 25' END OF EXPLORATION AT 27'	28
30					30
32					32
34					34
36					36
38					38
40					40
42					42
44					44
46					46
48					48
50					50

PROJECT LEO'S MOTORS  
 LOCATION MANCHESTER, VERMONT  
 DATE DRILLED 3/23/98 TOTAL DEPTH OF HOLE 19.0'  
 DIAMETER 4.25"  
 SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"  
 CASING DIA. 2" LENGTH 8.5' TYPE sch 40 pvc  
 DRILLING CO. T&K DRILLING METHOD HSA  
 DRILLER ALAN TOMMILA LOG BY R. HIGGINS

WELL NUMBER MW8



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0	ROAD BOX				0
0	LOCKING WELL CAP				0
1	CONCRETE				1
2	NATIVE BACKFILL				2
3	BENTONITE				3
4	NATIVE BACKFILL				4
5					5
6	WELL RISER		5'-7'- 7/3/7/8 0 ppm	Dry, brown, medium to fine SAND, some silt, no odor.	6
7	BENTONITE			Dry, white and black, fine GRAVEL and SILT, no odor.	7
8					8
9					9
10					10
11	SAND PACK		10'-12'- 10/10/9/15 0 ppm	Wet, brown, fine SAND and SILT, no odor.	11
12			12'-12.5'- 20 0 ppm	Wet, gray, fine SAND with silt and clay, no odor.	12
13				Wet, gray, SILT and CLAY with some fine gravel, (till), no odor.	13
14					14
15	WELL SCREEN		15'-15.5'- 75 0 ppm	15.4' WATER TABLE	15
16				Dry, gray, dense CLAY and SILT, (till), no odor.	16
17					17
18	BOTTOM CAP				18
19	UNDISTURBED NATIVE SOIL				19
20				BASE OF WELL AT 19' END OF EXPLORATION AT 19'	20
21					21
22					22
23					23
24					24
25					25

PROJECT LEO'S MOTORS

LOCATION MANCHESTER, VERMONT

DATE DRILLED 3/23/98 TOTAL DEPTH OF HOLE 20.0'

DIAMETER 4.25"

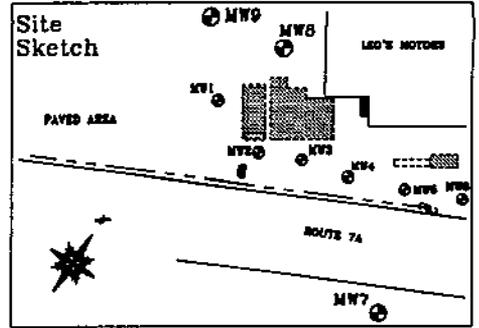
SCREEN DIA. 2" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 9.5' TYPE sch 40 pvc

DRILLING CO. T&K DRILLING METHOD HSA

DRILLER ALAN TOMMILA LOG BY R. HIGGINS

WELL NUMBER MW9



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX			0
0		LOCKING WELL CAP			0
1		CONCRETE			1
2		NATIVE BACKFILL			2
3		BENTONITE			3
4		NATIVE BACKFILL			4
5		WELL RISER	5'-7'- 5/6/10/12 0 ppm	Dry, brown, fine GRAVEL and SAND, no odor.	5
6				Dry, brown, medium to fine SAND with silt, no odor.	6
7				Fine SAND and SILT, trace clay, no odor.	7
8		BENTONITE			8
9					9
10			10'-12'- 8/7/8/8 0 ppm	Dry, brown, fine SAND and SILT, trace clay, no odor.	10
11		SAND PACK		Wet, gray/brown, medium to fine SAND, little silt, no odor.	11
12				Wet, gray, CLAY and SILT, no odor.	12
13					13
14					14
15			15'-17'- 23/24/19/41 0 ppm		15
16		WELL SCREEN		16.2" WATER TABLE	16
17				Wet, gray, dense, CLAY and SILT, (till), no odor.	17
18					18
19		BOTTOM CAP			19
20		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 20' END OF EXPLORATION AT 20'	20
21					21
22					22
23					23
24					24
25					25

**APPENDIX C**

**Groundwater Liquid Level Data**

**Liquid Level Monitoring Data  
Leo's Motor, Inc.  
Manchester, VT**

**Monitoring Date: 4/9/98**

Well I.D.	Top of Casing Elevation	Depth To Product	Depth To Water	Product Thickness	Specific Gravity Of Product	Hydro Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
MW-1	100.00	-	14.19	-	-	-	15.64	85.81
MW-2	99.19	-	14.93	-	-	-	14.93	84.26
MW-3	98.76	-	15.17	-	-	-	15.17	83.59
MW-4	98.52	-	15.79	-	-	-	15.79	82.73
MW-5	98.44	-	17.16	-	-	-	17.16	81.28
MW-6	98.13	-	DRY	-	-	-	N/A	N/A
MW-7	98.39	-	19.51				19.51	78.88
MW-8	99.44	-	12.93				12.93	86.51
MW-9	100.29	-	10.78	-	-	-	10.78	89.51

**APPENDIX D**

**Groundwater Quality Summary Data**

**Groundwater Quality Summary**  
**Leo's Motors**  
**Manchester, VT**

PARAMETER	MW1			VGES
	8/5/97	4/9/98		
Benzene	<1	<1		5
Chlorobenzene	<1	<1		100
1,2-DCB	<1	<1		600
1,3-DCB	<1	<1		600
1,4-DCB	<1	<1		75
Ethylbenzene	<1	<1		700
Toluene	<1	<1		1,000
Xylenes	<2	<1		10,000
Total BTEX				-
MTBE	7.2	<10		40
BTEX + MTBE	7.2			-

PARAMETER	MW2			VGES
	8/5/97	4/9/98		
Benzene	<1	<1		5
Chlorobenzene	<1	<1		100
1,2-DCB	<1	<1		600
1,3-DCB	<1	<1		600
1,4-DCB	<1	<1		75
Ethylbenzene	1.1	<1		700
Toluene	3.5	<1		1,000
Xylenes	8.8	<1		10,000
Total BTEX	13.4			-
MTBE	6.0	<10		40
BTEX + MTBE	19.4			-

PARAMETER	MW3			VGES
	8/5/97	4/9/98		
Benzene	406.	462.		5
Chlorobenzene	<100	<200		100
1,2-DCB	<100	<200		600
1,3-DCB	<100	<200		600
1,4-DCB	<100	<200		75
Ethylbenzene	2,890.	4,110.		700
Toluene	10,200.	16,800.		1,000
Xylenes	16,600.	25,500.		10,000
Total BTEX	28,096.	46,872.		-
MTBE	TBQ	<2000		40
BTEX + MTBE	28,096.	46,872.		-

TBQ - Trace Below Quantitation Limit

All Values Reported in ug/L (ppb)

8/5/97 Analysis by EPA Method 8260; 4/9/98 Analysis by EPA Method 602

**Groundwater Quality Summary**  
**Leo's Motors**  
**Manchester, VT**

PARAMETER	MW4			VGES
	8/5/97	4/9/98		
Benzene	3,370	83.7		5
Chlorobenzene	< 200	< 20		100
1,2-DCB	< 200	< 20		600
1,3-DCB	< 200	< 20		600
1,4-DCB	< 200	< 20		75
Ethylbenzene	2,900	747		700
Toluene	16,500	964		1,000
Xylenes	13,400	4,290		10,000
Total BTEX	38,170	6084.7		-
MTBE	1,990	< 200		40
BTEX + MTBE	40,160	6084.7		-

PARAMETER	MW5			VGES
	8/5/97	4/9/98		
Benzene	8.3	79.2		5
Chlorobenzene	< 1	< 2		100
1,2-DCB	< 1	< 2		600
1,3-DCB	< 1	< 2		600
1,4-DCB	< 1	< 2		75
Ethylbenzene	< 1	54.5		700
Toluene	TBQ	143		1,000
Xylenes	2.3	94.2		10,000
Total BTEX	10.6	370.9		-
MTBE	41.5	32.3		40
BTEX + MTBE	52.1	403.2		-

PARAMETER	MW6			VGES
	8/5/97	4/9/98		
Benzene	no sample	no sample		5
Chlorobenzene	well dry	well dry		100
1,2-DCB				600
1,3-DCB				600
1,4-DCB				75
Ethylbenzene				700
Toluene				1,000
Xylenes				10,000
Total BTEX				-
MTBE				40
BTEX + MTBE				-

TBQ - Trace Below Quantitation Limit

All Values Reported in ug/L (ppb)

8/5/97 Analysis by EPA Method 8260; 4/9/98 Analysis by EPA Method 602

**Groundwater Quality Summary  
Leo's Motors  
Manchester, VT**

PARAMETER	MW7			VGES
	8/5/97	4/9/98		
Benzene	no sample	<1		5
Chlorobenzene	well did	<1		100
1,2-DCB	not exist	<1		600
1,3-DCB		<1		600
1,4-DCB		<1		75
Ethylbenzene		<1		700
Toluene		<1		1,000
Xylenes		<1		10,000
Total BTEX				-
MTBE		<10		40
BTEX + MTBE				-

PARAMETER	MW8			VGES
	8/5/97	4/9/98		
Benzene	no sample	<1		5
Chlorobenzene	well did	<1		100
1,2-DCB	not exist	<1		600
1,3-DCB		<1		600
1,4-DCB		<1		75
Ethylbenzene		<1		700
Toluene		<1		1,000
Xylenes		<2		10,000
Total BTEX				-
MTBE		TBQ		40
BTEX + MTBE				-

PARAMETER	MW9			VGES
	8/5/97	4/9/98		
Benzene	no sample	<1		5
Chlorobenzene	well did	<1		100
1,2-DCB	not exist	<1		600
1,3-DCB		<1		600
1,4-DCB		<1		75
Ethylbenzene		<1		700
Toluene		<1		1,000
Xylenes		<2		10,000
Total BTEX				-
MTBE		<2		40
BTEX + MTBE				-

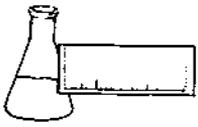
TBQ - Trace Below Quantitation Limit

All Values Reported in ug/L (ppb)

MW-8 & MW-9 Analysis by EPA Method 8260; MW-7 Analysis by EPA Method 602

**APPENDIX E**

**Laboratory Analysis Reports**



**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**REPORT OF LABORATORY ANALYSIS**

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors/7975248  
DATE REPORTED: April 3, 1998  
DATE SAMPLED: March 23, 1998

PROJECT CODE: GILM1907  
REF. #: 118,102 - 118,103

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated proper sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

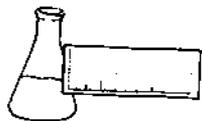
Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures



**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8270 (SOLIDS) -- ACID EXTRACTABLES

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors/7975248  
REPORT DATE: April 3, 1998  
DATE SAMPLED: March 23, 1998  
DATE RECEIVED: March 24, 1998  
DATE EXTRACTED: March 30, 1998

PROJECT CODE: GILM1907  
ANALYSIS DATE: April 1, 1998  
STATION: MW-8 Soil  
REF. #: 118,102  
TIME SAMPLED: 9:55  
SAMPLER: R. Higgins

<u>Parameter</u>	<u>Quantitation Limit (ug/kg)</u>	<u>Concentration (ug/kg) as received</u>
------------------	---------------------------------------	--

**ACID EXTRACTABLES:**

Benzyl alcohol	200	ND
4-Chloro-3-methylphenol	200	ND
2-Chlorophenol	100	ND
2,4-Dichlorophenol	100	ND
2,6-Dichlorophenol	100	ND
2,4-Dimethylphenol	100	ND
4,6-Dinitro-2-methylphenol	1000	ND
2,4-Dinitrophenol	200	ND
2-Methylphenol (o-cresol)	100	ND
3&4-Methylphenol (m&p-cresol)	100	ND
2-Nitrophenol	200	ND
4-Nitrophenol	200	ND
Pentachlorophenol	1000	ND
Phenol	100	ND
2,4,5-Trichlorophenol	200	ND
2,4,6-Trichlorophenol	200	ND

PERCENT SOLIDS: 83.%

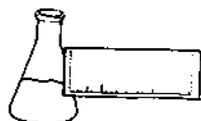
NUMBER OF UNIDENTIFIED PEAKS: 0

**SURROGATE RECOVERY:**

2-Fluorophenol:	86.%
Phenol-d5:	96.%
2-Fluorobiphenyl:	88.%

NOTES:

1 None detected



LABORATORY REPORT

EPA METHOD 8270 (SOLIDS) -- ACID EXTRACTABLES

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors/7975248  
REPORT DATE: April 3, 1998  
DATE SAMPLED: March 23, 1998  
DATE RECEIVED: March 24, 1998  
DATE EXTRACTED: March 30, 1998

PROJECT CODE: GILM1907  
ANALYSIS DATE: April 2, 1998  
STATION: MW-9 Soil  
REF. #: 118,103  
TIME SAMPLED: 11:42  
SAMPLER: R. Higgins

<u>Parameter</u>	<u>Quantitation Limit (ug/kg)</u>	<u>Concentration (ug/kg) as received</u>
------------------	---------------------------------------	--

**ACID EXTRACTABLES:**

Benzyl alcohol	200	ND
4-Chloro-3-methylphenol	200	ND
2-Chlorophenol	100	ND
2,4-Dichlorophenol	100	ND
2,6-Dichlorophenol	100	ND
2,4-Dimethylphenol	100	ND
4,6-Dinitro-2-methylphenol	1000	ND
2,4-Dinitrophenol	200	ND
2-Methylphenol (o-cresol)	100	ND
3&4-Methylphenol (m&p-cresol)	100	ND
2-Nitrophenol	200	ND
4-Nitrophenol	200	ND
Pentachlorophenol	1000	ND
Phenol	100	ND
2,4,5-Trichlorophenol	200	ND
2,4,6-Trichlorophenol	200	ND

PERCENT SOLIDS: 86.%

NUMBER OF UNIDENTIFIED PEAKS: >10

**SURROGATE RECOVERY:**

2-Fluorophenol:	72.%
Phenol-d5:	78.%
2-Fluorobiphenyl:	79.%

NOTES:

1 None detected

**CHAIN-OF-CUSTODY RECORD**

26061

7975248

Project Name: <b>Leas Motors</b>	Reporting Address: <b>GRIFFIN</b>	Billing Address:
Site Location: <b>Manchester, VT</b>		
Endyne Project Number: <b>GIZM1907</b>	Company: <b>R. HIGGINS</b>	Sampler Name: <b>R. HIGGINS</b>
	Contact Name/Phone #: <b>R. HIGGINS</b>	Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
118102	MW 8 Soil	SOIL	✓		3/23/98 9:55	2	4oz G		30	4°C	
118103	MW 9 Soil	↓	↓		11:42	↓	↓		↓	↓	

Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time <b>3/24 10:43am</b>
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes  No

**Requested Analyses**

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCPLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <b>8270 for extractable acids only + RCRA 8 Metals</b>										

**CHAIN-OF-CUSTODY RECORD**
**26061**

7975248

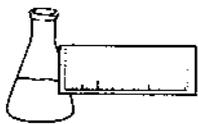
Project Name: <b>Leis Motors</b>	Reporting Address: <b>GRIFFIN</b>	Billing Address:
Site Location: <b>Manchester, VT</b>		
Endyne Project Number:	Company: <b>R. HIGGINS</b>	Sampler Name: <b>R. HIGGINS</b>
	Contact Name/Phone #:	Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	MW 8 Soil	Soil	✓		3/23/93 9:55	2	4oz G		30	4°C	
	MW 9 Soil	↓	↓		11:42	↓	↓		↓	↓	

Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time: <b>3/24 10:43am</b>
Relinquished by: Signature	Received by: Signature	Date/Time

 New York State Project: Yes \_\_\_ No X
**Requested Analyses**

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <b>8270 for extractable acids only + RCRA 9 Metals</b>										



**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**REPORT OF LABORATORY ANALYSIS**

**CLIENT:** Griffin International  
**PROJECT NAME:** Leo's Motors  
**REPORT DATE:** April 8, 1998  
**DATE SAMPLED:** March 23, 1998

**PROJECT CODE:** GILM3908  
**REF.#:** 118,104 - 118,105

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Samples were not preserved.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

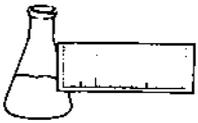
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

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**ENDYNE, INC.**

Laboratory Services

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Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**LABORATORY REPORT**

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
REPORT DATE: April 8, 1998  
DATE SAMPLED: March 23, 1998  
DATE RECEIVED: March 24, 1998

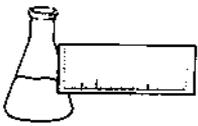
PROJECT CODE: GILM3908  
REF. #: 118,104  
STATION: MW-8 Soil  
TIME SAMPLED: 09:55  
SAMPLER: R. Higgins

Digestion was performed by EPA Method 3050.

<u>Parameter</u>	<u>Concentration</u> <u>(mg/kg, dry wt.)</u>	<u>Reporting Limit</u> <u>(mg/kg, dry wt.)</u>	<u>Analytical Method</u>	<u>Analysis Date</u>
Total Arsenic	3.8 4.23	2.14	SM 3113B	4/1/98
Total Barium	18.0	0.855	EPA 200.7	3/31/98
Total Cadmium	ND <sup>1</sup>	0.855	EPA 200.7	3/31/98
Total Chromium	3.76	0.855	EPA 200.7	3/31/98
Total Lead	ND	1.71	SM 3113B	4/1/98
Total Mercury	ND	0.420	EPA 245.5	3/26/98
Total Selenium	ND	2.14	SM 3113B	4/3/98
Total Silver	ND	1.71	EPA 200.7	3/31/98

NOTES:

1 None Detected



**ENDYNE, INC.**

**Laboratory Services**

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Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**LABORATORY REPORT**

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
REPORT DATE: April 8, 1998  
DATE SAMPLED: March 23, 1998  
DATE RECEIVED: March 24, 1998

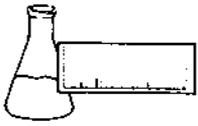
PROJECT CODE: GILM3908  
REF. #: 118,105  
STATION: MW-9 Soil  
TIME SAMPLED: 11:42  
SAMPLER: R. Higgins

Digestion was performed by EPA Method 3050.

<u>Parameter</u>	<u>Concentration</u> (mg/kg, dry wt.)	<u>Reporting Limit</u> (mg/kg, dry wt.)	<u>Analytical Method</u>	<u>Analysis Date</u>
Total Arsenic	7.16	2.06	SM 3113B	4/1/98
Total Barium	22.9	0.823	EPA 200.7	3/31/98
Total Cadmium	ND <sup>1</sup>	0.823	EPA 200.7	3/31/98
Total Chromium	5.59	0.823	EPA 200.7	3/31/98
Total Lead	ND	1.65	SM 3113B	4/1/98
Total Mercury	ND	0.494	EPA 245.5	3/26/98
Total Selenium	ND	2.06	SM 3113B	4/3/98
Total Silver	ND	1.65	EPA 200.7	3/31/98

**NOTES:**

1 None Detected



**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

LABORATORY REPORT

DUPLICATE CONTROL DATA

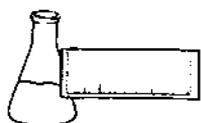
CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
REPORT DATE: April 8, 1998  
DATE SAMPLED: March 23, 1998  
DATE RECEIVED: March 24, 1998

PROJECT CODE: GILM3908  
REF. #: 118,104  
STATION: MW-8 Soil  
TIME SAMPLED: 09:55  
SAMPLER: R. Higgins

<u>Parameter</u>	<u>Dup 1</u> <u>(mg/kg, dry wt.)</u>	<u>Dup 2</u> <u>(mg/kg, dry wt.)</u>	<u>Rel. % Diff.</u>
Total Arsenic	4.27	4.19	2.
Total Barium	18.1	17.9	1.
Total Cadmium	ND <sup>1</sup>	ND	ND
Total Chromium	3.59	3.93	9.
Total Lead	ND	ND	ND
Total Mercury	ND	ND	ND
Total Selenium	ND	ND	ND
Total Silver	ND	ND	ND

NOTES:

1 None Detected



**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**METALS LABORATORY REPORT**

**SPIKE CONTROL DATA**

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
REPORT DATE: April 8, 1998  
DATE SAMPLED: March 23, 1998  
DATE RECEIVED: March 24, 1998

PROJECT CODE: GILM3908  
REF. #: 118,105  
STATION: MW-9 Soil  
TIME SAMPLED: 11:42  
SAMPLER: R. Higgins

<u>Parameter</u>	<u>Concentration<sup>2</sup></u> <u>(mg/L)</u>	<u>Target</u> <u>(mg/L)</u>	<u>Spike Result</u> <u>(mg/L)</u>	<u>% Rec.</u>
Total Arsenic	0.017	0.010	0.030	126.
Total Barium	0.278	0.400	0.623	86.
Total Cadmium	ND <sup>1</sup>	0.200	0.170	83.
Total Chromium	0.068	0.400	0.408	85.
Total Mercury	ND	0.003	0.004	94.
Total Selenium	ND	0.020	0.020	101.
Total Silver	ND	0.200	0.158	89.

**NOTES:**

1 None Detected

2 Spike performed on diluted digestate. Unadjusted results presented here.

7975248

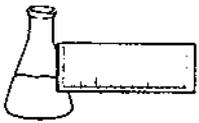
Project Name: <u>Leas Motors</u>	Reporting Address: <u>Griffin</u>	Billing Address:
Site Location: <u>Manchester, VT</u>		
Endyne Project Number: <u>GILW 3808</u>	Company: <u>R. Higgins</u>	Sampler Name: <u>R. Higgins</u>
	Contact Name/Phone #: <u>R. Higgins</u>	Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
118104	MW 8 Soil	SOIL	✓		3/23/98 9:55	2	4oz G		30	4°C	
118105	MW 9 Soil	↓	↓		11:42	↓	↓		↓	↓	

Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time <u>3/24 10:43am</u>
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes  No

Requested Analyses											
1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Phos. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <u>8270 for extractable acids only + RCRA 8 METALS</u>										



**ENDYNE, INC.**

Laboratory Services

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Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors/7975248  
REPORT DATE: April 20, 1998  
DATE SAMPLED: April 9, 1998

PROJECT CODE: GILM1176  
REF. #: 118,908 - 118,909

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

Blank contamination was not observed at levels affecting the analytical results.

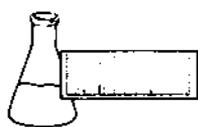
Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures



### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors/7975248  
REPORT DATE: April 20, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998  
ANALYSIS DATE: April 18, 1998

PROJECT CODE: GILM1176  
REF.#: 118,908  
STATION: MW 8  
TIME SAMPLED: 12:09  
SAMPLER: R.H./S.B.

<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)	<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	2.0
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	TBQ <sup>2</sup>

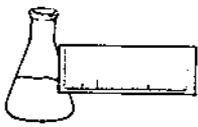
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 108.%  
Toluene-d8 : 98.%  
4-Bromofluorobenzene : 98.%

#### NOTES:

- 1 None detected
- 2 Trace below quantitation limit



### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors/7975248  
REPORT DATE: April 20, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998  
ANALYSIS DATE: April 17, 1998

PROJECT CODE: GILM1176  
REF.#: 118,909  
STATION: MW 9  
TIME SAMPLED: 12:08  
SAMPLER: R.H./S.B.

<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)	<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	TBQ <sup>2</sup>
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 108.%  
Toluene-d8 : 100.%  
4-Bromofluorobenzene : 91.%

#### NOTES:

- 1 None detected
- 2 Trace below quantitation limit

CHAIN-OF-CUSTODY RECORD

26861

7975248

Project Name: <b>LEOS MOTORS</b>	Reporting Address: <b>GRIFFIN</b>	Billing Address:
Site Location: <b>Manchester VT</b>		
Endyne Project Number: <b>GILM 1176</b>	Company: <b>R. HIGGINS</b>	Sampler Name: <b>R.H. / S.B</b>
	Contact Name/Phone #:	Phone #:

Lab #	Sample Location	Matrix	GRA B	COMP	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	TRIP BLANK	H <sub>2</sub> O	✓		4/9/98 7:29	2	40MLG		602	HC1	
	MW5				10:51						
	MW7				10:56						
	MW4				11:07						
	MW2				11:08						
	Duplicate MW2				11:08						
	MW3				11:21						
	MW1				11:21						
118,908	MW8				12:09				8260		
118,909	MW9				12:08				8260		
	MW8				12:09	1	1LG		30	4°C	
	MW9				12:08	1	1LG		30	4°C	

Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4/10/98 10:24
Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4-10-98 10:25

New York State Project: Yes  No

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	ICLIP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): SVOC's EPA 8270 for Acid extractables only										

CHAIN-OF-CUSTODY RECORD

26862

79752418

Project Name: <u>Leo's Motors</u>	Reporting Address: <u>GRiffin</u>	Billing Address:
Site Location: <u>Manchester, VT</u>		
Endyne Project Number:	Company: Contact Name/Phone #: <u>R. Higgins</u>	Sampler Name: <u>R.H. / S.B.</u> Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	MW8	H <sub>2</sub> O	✓		4/9/98 12:09	1	1/2 gal P		30	4°C	
	MW9	H <sub>2</sub> O	✓		12:09	1	1/2 gal P		30	4°C	

Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time <u>4/10/98 10:24</u>
Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time <u>4-10-98 10:25</u>

New York State Project: Yes  No

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <u>RCRA 8 METALS</u>										

7475248

**CHAIN-OF-CUSTODY RECORD**

26861

Project Name: <b>LEUS MOTORS</b> Site Location: <b>Manchester VT</b>	Reporting Address: <b>GRIFFIN</b>	Billing Address:
Endyne Project Number:	Company: <b>R. HIGGINS</b> Contact Name/Phone #:	Sampler Name: <b>R.H./S.B.</b> Phone #:

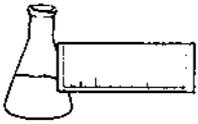
Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	TRIP BLANK	H <sub>2</sub> O	✓		4/9/98	2	40ML		6026	HL	
	MW5				1051						
	MW7				1056						
	MW4				1107						
	MW2				1108						
	Duplicate MW2				1108						
	MW3				1121						
	MW1				1121						
	MW8				1204				8260		
	MW9				1209	0	0		8260	✓	
	MW3				1209	1	1LG		30	4°C	
	MW9				1209	1	1LG		30	4°C	

Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4/10/98 10:24
Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4/10/98 10:25

New York State Project: Yes  No

**Requested Analyses**

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <b>SIT - EPA 8270 for Acid esters only</b>										



**ENDYNE, INC.**

Laboratory Services

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Williston, Vermont 05495  
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FAX 879-7103

**REPORT OF LABORATORY ANALYSIS**

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
REPORT DATE: April 22, 1998  
DATE SAMPLED: April 9, 1998

PROJECT CODE: GILM3178  
REF.#: 118,912 - 118,913

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Metals preservation with HNO<sub>3</sub> was performed at the laboratory.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

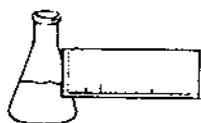
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

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**LABORATORY REPORT**

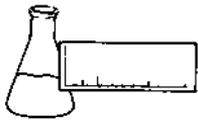
CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
REPORT DATE: April 22, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998

PROJECT CODE: GILM3178  
REF. #: 118,912  
STATION: MW8  
TIME SAMPLED: 12:09  
SAMPLER: R.H. / S.B.

<u>Parameter</u>	<u>Concentration</u> (mg/L, ppm)	<u>Reporting Limit</u> (mg/L, ppm)	<u>Analytical Method</u>	<u>Analysis Date</u>
Dissolved Arsenic	ND <sup>1</sup>	0.005	SM 3113B	4/14/98
Dissolved Barium	0.157	0.010	EPA 200.7	4/14/98
Dissolved Cadmium	ND	0.002	EPA 200.7	4/14/98
Dissolved Chromium	ND	0.010	EPA 200.7	4/14/98
Dissolved Lead	ND	0.002	SM 3113B	4/15/98
Dissolved Mercury	ND	0.001	EPA 245.1	4/17/98
Dissolved Selenium	ND	0.010	SM 3113B	4/21/98
Dissolved Silver	ND	0.010	EPA 200.7	4/14/98

**NOTES:**

1 None Detected



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**LABORATORY REPORT**

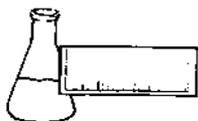
CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
REPORT DATE: April 22, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998

PROJECT CODE: GILM3178  
REF. #: 118,913  
STATION: MW9  
TIME SAMPLED: 12:08  
SAMPLER: R.H. / S.B.

<u>Parameter</u>	<u>Concentration</u> (mg/L, ppm)	<u>Reporting Limit</u> (mg/L, ppm)	<u>Analytical Method</u>	<u>Analysis Date</u>
Dissolved Arsenic	ND <sup>1</sup>	0.005	SM 3113B	4/14/98
Dissolved Barium	0.063	0.010	EPA 200.7	4/14/98
Dissolved Cadmium	ND	0.002	EPA 200.7	4/14/98
Dissolved Chromium	ND	0.010	EPA 200.7	4/14/98
Dissolved Lead	ND	0.002	SM 3113B	4/15/98
Dissolved Mercury	ND	0.001	EPA 245.1	4/17/98
Dissolved Selenium	ND	0.010	SM 3113B	4/21/98
Dissolved Silver	ND	0.010	EPA 200.7	4/14/98

**NOTES:**

1 None Detected



**ENDYNE, INC.**

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**LABORATORY REPORT**

**DUPLICATE CONTROL DATA**

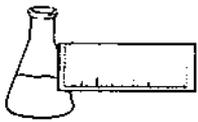
**CLIENT:** Griffin International  
**PROJECT NAME:** Leo's Motors  
**REPORT DATE:** April 22, 1998  
**DATE SAMPLED:** April 9, 1998  
**DATE RECEIVED:** April 10, 1998

**PROJECT CODE:** GILM3178  
**REF. #:** 118,912  
**STATION:** MW8  
**TIME SAMPLED:** 12:09  
**SAMPLER:** R.H. / S.B.

<u>Parameter</u>	<u>Dup 1</u> <u>(mg/L)</u>	<u>Dup 2</u> <u>(mg/L)</u>	<u>Rel. % Diff.</u>
Dissolved Arsenic	ND.9	ND	ND
Dissolved Barium	0.157	0.157	0.
Dissolved Cadmium	ND	ND	ND
Dissolved Chromium	ND	ND	ND
Dissolved Lead	ND	ND	ND
Dissolved Mercury	ND	ND	ND
Dissolved Selenium	ND	ND	ND
Dissolved Silver	ND	ND	ND

**NOTES:**

1 None Detected



**ENDYNE, INC.**

Laboratory Services

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**METALS LABORATORY REPORT**

**SPIKE CONTROL DATA**

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
REPORT DATE: April 22, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998

PROJECT CODE: GILM3178  
REF. #: 118,913  
STATION: MW9  
TIME SAMPLED: 12:08  
SAMPLER: R.H. / S.B.

<u>Parameter</u>	<u>Concentration</u> <u>(mg/L)</u>	<u>Target</u> <u>(mg/L)</u>	<u>Spike Result</u> <u>(mg/L)</u>	<u>% Rec.</u>
Dissolved Arsenic	ND <sup>1</sup>	0.010	0.010	101.
Dissolved Barium	0.063	0.400	0.461	99.
Dissolved Cadmium	ND	0.200	0.185	92.
Dissolved Chromium	ND	0.400	0.378	95.
Dissolved Lead	ND	0.010	0.010	102.
Dissolved Mercury	ND	0.003	0.003	103.
Dissolved Silver	ND	0.200	0.163	80.

**NOTES:**

1 None Detected

CHAIN-OF-CUSTODY RECORD

26861

7975248

Project Name: LEOS MOTORS	Reporting Address: GRIFFIN	Billing Address:
Site Location: Manchester VT		
Endyne Project Number: 62LM3178	Company: R. HIGGINS	Sampler Name: R.H. / S.B
	Contact Name/Phone #:	Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	TRIP BLANK	60	✓		4/9/98	2	40MLG		602	HC1	
	MW5				10:51						
	MW7				10:56						
	MW4				11:07						
	MW2				11:08						
	Duplicate MW2				11:08						
	MW3				11:21						
	MW1				11:21						
	MW8				12:09				8260		
	MW9				12:08				8260	✓	
	MW9				12:09	1	1LG		30	4°C	
	MW9				12:03	1	1LG		30	4°C	

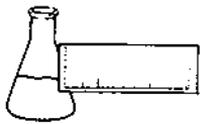
Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4/10/98 10:24
Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4-10-98 10:25

New York State Project: Yes  No

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): SVOC's EPA 8270 for Acid extractables only										





**ENDYNE, INC.**

**Laboratory Services**

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

**REPORT OF LABORATORY ANALYSIS**

**CLIENT:** Griffin International  
**PROJECT NAME:** Leo's Motors/7975148  
**DATE REPORTED:** April 24, 1998  
**DATE SAMPLED:** April 9, 1998

**PROJECT CODE:** GILM1177  
**REF. #:** 118,910 - 118,911

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated proper sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

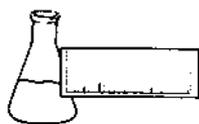
Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

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LABORATORY REPORT

EPA METHOD 8270 (LIQUID) -- EXTRACTABLES ACID

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors/7975248  
REPORT DATE: April 24, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998  
DATE EXTRACTED: April 15, 1998

PROJECT CODE: GILM1177  
ANALYSIS DATE: April 21, 1998  
STATION: MW8  
REF. #: 118,910  
TIME SAMPLED: 12:09  
SAMPLER: R.H./S.B.

<u>Parameter</u>	<u>Quantitation Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
<b>ACID EXTRACTABLES:</b>		
Benzyl alcohol	10	ND
4-Chloro-3-methylphenol	10	ND
2-Chlorophenol	5	ND
2,4-Dichlorophenol	5	ND
2,6-Dichlorophenol	5	ND
2,4-Dimethylphenol	5	ND
4,6-Dinitro-2-methylphenol	50	ND
2,4-Dinitrophenol	10	ND
2-Methylphenol (o-cresol)	5	ND
3&4-Methylphenol (m&p-cresol)	5	ND
2-Nitrophenol	10	ND
4-Nitrophenol	10	ND
Pentachlorophenol	50	ND
Phenol	5	ND
2,4,5-Trichlorophenol	10	ND
2,4,6-Trichlorophenol	10	ND

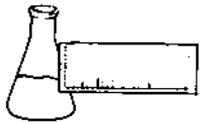
NUMBER OF UNIDENTIFIED PEAKS: >10

**SURROGATE RECOVERY:**

2-Fluorophenol: 48.%  
Phenol-d5: 37.%  
2,4,6-Tribromophenol: 109.%

NOTES:

1 None detected



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LABORATORY REPORT

EPA METHOD 8270 (LIQUID) -- EXTRACTABLES ACID

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors/7975248  
REPORT DATE: April 24, 1998  
DATE SAMPLED: April 9, 1998  
DATE RECEIVED: April 10, 1998  
DATE EXTRACTED: April 15, 1998

PROJECT CODE: GILM1177  
ANALYSIS DATE: April 22, 1998  
STATION: MW9  
REF. #: 118,911  
TIME SAMPLED: 12:08  
SAMPLER: R.H./S.B.

<u>Parameter</u>	<u>Quantitation Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
<b>ACID EXTRACTABLES:</b>		
Benzyl alcohol	10	ND
4-Chloro-3-methylphenol	10	ND
2-Chlorophenol	5	ND
2,4-Dichlorophenol	5	ND
2,6-Dichlorophenol	5	ND
2,4-Dimethylphenol	5	ND
4,6-Dinitro-2-methylphenol	50	ND
2,4-Dinitrophenol	10	ND
2-Methylphenol (o-cresol)	5	ND
3&4-Methylphenol (m&p-cresol)	5	ND
2-Nitrophenol	10	ND
4-Nitrophenol	10	ND
Pentachlorophenol	50	ND
Phenol	5	ND
2,4,5-Trichlorophenol	10	ND
2,4,6-Trichlorophenol	10	ND

NUMBER OF UNIDENTIFIED PEAKS: >10

**SURROGATE RECOVERY:**

2-Fluorophenol: 45.%  
Phenol-d5: 37.%  
2,4,6-Tribromophenol: 99.%

NOTES:

1 None detected

CHAIN-OF-CUSTODY RECORD

26861

7975248

Project Name: LEOS MOTORS Site Location: Manchester VT	Reporting Address: GRIFFIN	Billing Address:
Endyne Project Number: GILM1177	Company: R. HIGGINS Contact Name/Phone #:	Sampler Name: R.H. / S.B. Phone #:

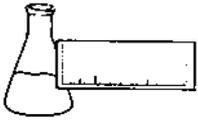
Lab #	Sample Location	Matrix	GRA B	COMP	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	TRIP BLANK	H <sub>2</sub> O	✓		4/9/98 7:29	2	40MLG		602	HC1	
	MW5				10:51						
	MW7				10:56						
	MW4				11:07						
	MW2				11:08						
	Duplicate MW2				11:08						
	MW3				11:21						
	MW1				11:21						
	MW8				12:09				8260		
	MW9				12:08				8260	✓	
118,910	MW8				12:09	1	1LG		30	4°C	
118,911	MW9				12:08	1	1LG		30	4°C	

Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4/10/98 10:24
Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4-10-98 10:25

New York State Project: Yes  No

Requested Analyses											
1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): SVOCs EPA 8270 for Acid extractables only										





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**REPORT OF LABORATORY ANALYSIS**

**CLIENT:** Griffin International  
**PROJECT NAME:** Leo's Motors  
**REPORT DATE:** April 15, 1998  
**DATE SAMPLED:** April 9, 1998

**PROJECT CODE:** GILM1175  
**REF.#:** 118,900 - 118,907

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated sample preservation with HCl. Samples 118,902 and 118,907 were found to have a neutral pH.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

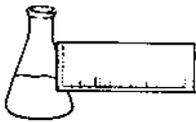
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

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**ENDYNE, INC.**

Laboratory Services

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**EPA METHOD 602--PURGEABLE AROMATICS**

CLIENT: Griffin International  
PROJECT NAME: Leo's Motors  
CLIENT PROJ. #: 7975248

DATE RECEIVED: April 10, 1998  
REPORT DATE: April 15, 1998  
PROJECT CODE: GILM1175

Ref. #:	118,900	118,901	118,902	118,903	118,904
Site:	Trip Blank	MW5	MW7	MW4	MW2
Date Sampled:	4/9/98	4/9/98	4/9/98	4/9/98	4/9/98
Time Sampled:	7:29	10:51	10:56	11:07	11:08
Sampler:	R.H./S.B.	R.H./S.B.	R.H./S.B.	R.H./S.B.	R.H./S.B.
Date Analyzed:	4/13/98	4/14/98	4/14/98	4/14/98	4/14/98
UIP Count:	0	>10	0	>10	1
Dil. Factor (%):	100	50	100	5	100
Surr % Rec. (%):	97	88	96	99	99
Parameter	Conc. (ug/L)				
Benzene	<1	79.2	<1	83.7	<1
Chlorobenzene	<1	<2	<1	<20	<1
1,2-Dichlorobenzene	<1	<2	<1	<20	<1
1,3-Dichlorobenzene	<1	<2	<1	<20	<1
1,4-Dichlorobenzene	<1	<2	<1	<20	<1
Ethylbenzene	<1	54.5	<1	747.	<1
Toluene	<1	143.	<1	964.	<1
Xylenes	<1	94.2	<1	4,290.	<1
MTBE	<10	32.3	<10	<200	<10

Ref. #:	118,905	118,906	118,907		
Site:	Duplicate MW2	MW3	MW1		
Date Sampled:	4/9/98	4/9/98	4/9/98		
Time Sampled:	11:08	11:21	11:21		
Sampler:	R.H./S.B.	R.H./S.B.	R.H./S.B.		
Date Analyzed:	4/15/98	4/15/98	4/14/98		
UIP Count:	1	>10	1		
Dil. Factor (%):	100	0.5	100		
Surr % Rec. (%):	107	105	95		
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)		
Benzene	<1	462.	<1		
Chlorobenzene	<1	<200	<1		
1,2-Dichlorobenzene	<1	<200	<1		
1,3-Dichlorobenzene	<1	<200	<1		
1,4-Dichlorobenzene	<1	<200	<1		
Ethylbenzene	<1	4,110.	<1		
Toluene	<1	16,800.	<1		
Xylenes	<1	25,500.	<1		
MTBE	<10	<2000	<10		

Note: UIP = Unidentified Peaks TBQ = Trace Below Quantitation NI = Not Indicated

CHAIN-OF-CUSTODY RECORD

26861

7975248 118,900 - 118,913

Project Name: LEOS MOTORS Site Location: Manchester VT	Reporting Address: GRIFFIN	Billing Address:
Endyne Project Number: GILM1175	Company: R. HIGGINS Contact Name/Phone #:	Sampler Name: R.H./S.B. Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
118,900	TRIP BLANK	H <sub>2</sub> O	✓		4/9/98 7:29	2	40MLG		602	HC1	
118,901	MW5				10:51						
118,902	MW7				10:56						
118,903	MW4				11:07						
118,904	MW2				11:08						
118,905	Duplicate MW2				11:08						
118,906	MW3				11:21						
118,907	MW1				11:21						
	MW8				12:09				8260		
	MW9				12:08				8260	✓	
	MW9				12:09	1	1LG		30	4°C	
	MW9				12:08	1	1LG		30	4°C	

Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4/10/98 10:24
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Relinquished by: Signature <i>[Signature]</i>	Received by: Signature <i>[Signature]</i>	Date/Time 4-10-98 10:25
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New York State Project: Yes  No

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): SVOC's EPA 8270 for Acid extractables only										

**CHAIN-OF-CUSTODY RECORD**

26862

7975243

118.300 - 118.313

Project Name: <b>Lea's Motors</b>	Reporting Address: <b>Griffin</b>	Billing Address:
Site Location: <b>Manchester VT</b>		
Endyne Project Number:	Company: <b>R. Higgins</b>	Sampler Name: <b>R.H. / S.B.</b>
	Contact Name/Phone #:	Phone #:

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time <b>4/10/98</b>	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	MW8	H <sub>2</sub> O	✓		12:09	1	1/2 p/p		30	4°C	
	MW9	H <sub>2</sub> O	✓		12:03	1	1/2 p/p		30	4°C	

Relinquished by: Signature <i>Robert Huff</i>	Received by: Signature <i>Christy Cole</i>	Date/Time <b>4/10/98 10:24</b>
Relinquished by: Signature <i>Christy Cole</i>	Received by: Signature <i>Tonia M. Chambers</i>	Date/Time <b>4-10-98 10:25</b>

 New York State Project: Yes    No    Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <b>RCRA 8 METALS</b>										

**CHAIN-OF-CUSTODY RECORD**

26862

HTS 243

Project Name: <u>LEWIS MOUNTAIN</u>	Reporting Address: <u>Griffin</u>	Billing Address:
Site Location: <u>Manchester VT</u>		
Endyne Project Number:	Company: <u>R. Higgins</u>	Sampler Name: <u>R.H. / S.B.</u>
	Contact Name/Phone #:	Phone #:

Lab #	Sample Location	Matrix	GRA B	COMP	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	MW3	H <sub>2</sub> O	✓		4/10/98	1	1/2 p/p		30	4°C	
	MW9	H <sub>2</sub> O	✓		12:03	1	1/2 p/p		30	4°C	

Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time: <u>4/10/98 10:24</u>
Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time: <u>4-10-98 11:05</u>

New York State Project: Yes    No    Requested Analyses

1	pH *	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <u>HEAVY METALS</u>										